

Appendix A
**Air Quality and Greenhouse
Gas Emissions Calculations
and Modeling**

A.1-1 Assumptions

IBC Multi-Use Trail Creekwalk
Assumptions

Project Land Uses	CalEEMod Land Use Type	CalEEMod Land Use Subtype	Amount	Unit	Building SF	Landscaping Area
Project Land Uses						
Creekwalk Trail	Parking	Other Non-asphalt surface	3.340	acre	0	0

Source:
Construction Data Form, Confirmation of acreage from Nicholas Woo on 8/14/2024

Construction Phase	CalEEMod Phase Type	Start Date	End Date	Workdays (\$ days/week)	Worker Vehicles/Day	Workers Trips (In/Out)/Day	Total Debris or Concrete Amount	Daily Debris or Concrete Amount	Total Haul (or Concrete) Trips (In/Out)	Total Haul (or Concrete) Trucks/Day	Haul (or Concrete) Trips/Day (In/Out)	Days of Hauling	Vendor Truck trips/day
Demolition	Demolition	1/1/2028	6/30/2028	130	5	10	6,288	49	1,258	5	10	130	2
Site Grading	Grading	7/1/2028	9/12/2028	52	3	6	5,670	110	1,134	11	22	52	2
Asphalt Paving	Paving	9/13/2028	2/22/2029	117	10	20	5,390	47	1,080	5	10	117	
Concrete Paving	Trenching	9/13/2028	10/10/2028	20	0	0	265	14	54	2	4	20	
Total Work Days				299									

Demolition Quantities	
Parameters	Amount
Total	
Building Area (ft ²)	0
Building Volume (ft ³)	0
Building and Hardscape Waste Volume (CY) ¹	0
Building Waste weight (tons) ²	0
Hardscape	
Hardscape Area (ft ²)	145,490
Thickness (ft)	1.167
Hardscape Debris Volume (CY)	6,288
Debris weight (lb)/Volume (CY) ²	2400
Hardscape Debris Weight (tons)	7,546
Total Debris Weight (tons)	7,546
Total Demolition Debris (CY)	6,288
Haul Truck Capacity (CY)	10
Total Haul Trucks Required	629
Total Haul Truck Trips (In/Out)	1,258
Days of Hauling³	130
Total Haul Truck Trips (In/Out) per day	10

Notes/Comments:
Roadside Management Toolbox: Asphalt Concrete

Paving	
Parameters	Amount
Asphalt	
Asphalt Site Area (acres) ²	2.04
Site Area (ft ²)	88,950
Footing Depth (ft) ⁴	1.00
Total Asphalt Volume (CY) ¹	3,294
Asphalt Truck Capacity (CY)	10
Total Trucks Required ²	330
Total Truck Trips (In/Out)	660
Days of Asphalt Delivery	117
Max Truck Trips (In/Out) per Day	6

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Provided by BFK Engineers
Provided by BFK Engineers, Aggregate Base and Asphalt

Site Grading Quantities	
Parameters	Amount
Material(Export) (CY) ¹	5,670
Haul Truck Capacity (CY)	10
Total Haul Trucks Required	567
Total Haul Truck Trips (In/Out)	1,134
Days of Hauling³	52
Daily Haul Amount (CY)	110
Total Haul Truck Trips (In/Out) per day	22

Decomposed Granite(DG) Material	
Parameters	Amount
DG Site Area (acres) ²	1.30
Site Area (ft ²)	56,575
Footing Depth (ft) ⁴	1.00
Total DG Volume (CY) ¹	2,095
DG Truck Capacity (CY)	10
Total Trucks Required ²	210
Total Truck Trips (In/Out)	420
Days of DG Delivery	117
Max Truck Trips (In/Out) per Day	4

Provided by BFK Engineers
Provided by BFK Engineers
Provided by BFK Engineers

Foundations/Concrete Quantities (Building Construction)	
Parameters	Amount
Foundations	
Site Area (acres) ²	
Site Area (ft ²)	
Footing Depth (ft) ⁴	
Total Concrete Volume (CY) ¹	265
Concrete Truck Capacity (CY)	10
Total Concrete Trucks Required ²	27
Total Concrete Truck Trips (In/Out)	54
Days of Concrete Delivery	20
Max Concrete Truck Trips (In/Out) per Day	4

*We assume it takes 20 days

Notes:
1 Construction data needs and data responses from client

Conservatively assumes that waste was disposed
50 miles roundtrip (48.6 miles), to and from Prisma
2 Deshecha Landfill / OC Waste & Recycling

Off-Road Heavy-Duty Construction Equipment - Maximum Day

Construction Phase	CalEEMod Equipment Category	No. of Heavy-Duty Equipment	No. of hours/day	Hours of Operation/Week Per Equipment	Emissions Tier Rating or Fuel (After Mitigation if needed)	Notes/Comments
Demolition	Crushing/Processing Equip.	2	8	40	Average	*Diesel Equip used, Load, HP, and emission factor taken from CalEEMod 2020 Appendix D. Modeled separately due to caleemod error where it did not calculate the emissions.
	Excavators	2	8	40	Average	
Site Grading	Graders	2	8	40	Average	
Asphalt Paving	Cement/Mortar Mixers	2	8	40	Average	
	Pavers	2	8	40	Average	
	Paving Equipment	2	8	40	Average	
	Rollers	2	8	40	Average	
	Pumps	2	8	40	Average	
Concrete Paving						

Notes: Construction Equipment identified in the Project's Construction Assumptions document

A.1-2 Construction Air Quality and GHG Calculations and Modeling

California institute of technology GINSBURG CENTER FOR QUANTUM PRECISION MEASUREMENT
Air Quality Assessment

Localized Significance Thresholds

(SCAQMD, Final Localized Significance Threshold Methodology, Appendix C (2008))

Source Receptor Area 20
25 meters to Sensitive Receptor

Acres	Screening Values			Project Site
	1	2	5	3.34
Construction LSTs				
NOX	92	131	197	182.48
CO	647	962	1,711	1,546.22
PM10	4	7	14	12.46
PM2.5	3	5	9	8.12

Notes:

- a. Project screening levels are linearly interpolated based on the 1-,2- and 5- acre screening levels.
- b. Source: SCAQMD Localized Significance Thresholds, Appendix C - Mass Rate LST Look-up Tables

IBC Multi-Use Trail Creekwalk Segment

Air Quality Construction Analysis

Unmitigated

Regional Maximums Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day									
Demolition-2028	1.02	7.91	11.58	0.02	0.27	1.18	1.45	0.27	0.22	0.49
Site Grading-2028	0.65	6.56	8.52	0.02	0.27	0.87	1.14	0.25	0.19	0.44
Asphalt Paving-2028	1.07	9.70	12.75	0.02	0.35	0.49	0.84	0.32	0.12	0.45
Asphalt Paving-2029	1.05	9.48	12.56	0.02	0.33	0.49	0.82	0.30	0.12	0.43
Concrete Paving-2028	4.59E-03	0.38	0.16	2.29E-03	4.41E-03	0.09	0.09	4.41E-03	0.03	0.03
Project Daily Maximum Emissions	1.07	9.70	12.75	0.02	0.35	1.18	1.45	0.32	0.22	0.49
Threshold	75.0	100.0	550.0	150.0	None	None	150.0	None	None	55.0
Exceed Threshold (Y/N)?	No	No	No	No	No	No	No	No	No	No

Overlapping Phases Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day									
Demolition-2028	1.02	7.91	11.58	0.02	0.27	1.18	1.45	0.27	0.22	0.49
Site Grading-2028	0.65	6.56	8.52	0.02	0.27	0.87	1.14	0.25	0.19	0.44
Asphalt Paving-2028 + Concrete Paving-2028	1.07	10.08	12.91	0.03	0.35	0.58	0.93	0.33	0.15	0.48
Asphalt Paving-2029	1.05	9.48	12.56	0.02	0.33	0.49	0.82	0.30	0.12	0.43
Project Daily Maximum Emissions	1.07	10.08	12.91	0.03	0.35	1.18	1.45	0.33	0.22	0.49
Threshold	75.0	100.0	550.0	150.0	None	None	150.0	None	None	55.0
Exceed Threshold (Y/N)?	No	No	No	No	No	No	No	No	No	No

Localized Maximum Source	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day									
Demolition-2028	0.98	6.87	10.68	0.02	0.26	0.80	1.06	0.26	0.12	0.38
Site Grading-2028	0.60	4.47	7.32	0.01	0.25	0.28	0.52	0.23	0.03	0.26
Asphalt Paving-2028	1.00	8.68	11.41	0.02	0.34	0.00	0.34	0.31	0.00	0.31
Asphalt Paving-2029	0.99	8.51	11.42	0.02	0.32	0.00	0.32	0.29	0.00	0.29
Concrete Paving-2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Project Daily Maximum Emissions	1.00	8.68	11.42	0.02	0.34	0.80	1.06	0.31	0.12	0.38
Threshold		182.5	1546.2				12.5			8.1
Exceed Threshold (Y/N)?		No	No				No			No

IBC Multi-Use Trail Creekwalk Segment
 Air Quality Construction Analysis
 Unmitigated

Summer Source	Onsite Emissions										Offsite Emissions									
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day										lb/day									
Demolition-2028	0.98	6.87	10.68	0.02	0.26	0.80	1.06	0.26	0.12	0.38	0.04	1.00	0.90	0.01	0.01	0.37	0.39	0.01	0.10	0.11
Site Grading-2028	0.60	4.47	7.32	0.01	0.25	0.28	0.52	0.23	0.03	0.26	0.04	2.10	1.20	0.01	0.02	0.59	0.62	0.02	0.16	0.19
Asphalt Paving-2028	1.00	8.68	11.41	0.02	0.34	0.00	0.34	0.31	0.00	0.31	0.07	0.97	1.34	0.01	0.01	0.49	0.50	0.01	0.12	0.14
Asphalt Paving-2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Paving-2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59E-03	0.37	0.16	2.29E-03	4.41E-03	0.09	0.09	4.41E-03	0.03	0.03
Regional Emissions	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5										
Demolition-2028	1.02	7.87	11.58	0.02	0.27	1.18	1.45	0.27	0.22	0.49										
Site Grading-2028	0.65	6.56	8.52	0.02	0.27	0.87	1.14	0.25	0.19	0.44										
Asphalt Paving-2028	1.07	9.65	12.75	0.02	0.35	0.49	0.84	0.32	0.12	0.45										
Asphalt Paving-2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Concrete Paving-2028	4.59E-03	0.37	0.16	2.29E-03	4.41E-03	0.09	0.09	4.41E-03	0.03	0.03										
Project Daily Maximum Emissions	1.07	9.65	12.75	0.02	0.35	1.18	1.45	0.32	0.22	0.49										

IBC Multi-Use Trail Creekwalk Segment
 Air Quality Construction Analysis
 Unmitigated

Winter Source	Onsite Emissions										Offsite Emissions									
	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5
	lb/day										lb/day									
Demolition-2028	0.98	6.87	10.68	0.02	0.26	0.80	1.06	0.26	0.12	0.38	0.04	1.05	0.84	0.01	0.01	0.37	0.39	0.01	0.10	0.11
Site Grading-2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paving-2028	1.00	8.68	11.41	0.02	0.34	0.00	0.34	0.31	0.00	0.31	0.07	1.01	1.21	0.01	0.01	0.49	0.50	0.01	0.12	0.14
Asphalt Paving-2029	0.99	8.51	11.42	0.02	0.32	0.00	0.32	0.29	0.00	0.29	0.06	0.97	1.14	0.01	0.01	0.49	0.50	0.01	0.12	0.14
Concrete Paving-2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.23E-03	0.38	0.16	2.29E-03	4.41E-03	0.09	0.09	4.41E-03	0.03	0.03
Regional Emissions	ROG	NOX	CO	SO2	Exhaust PM10	Fugitive PM10	Total PM10	Exhaust PM2.5	Fugitive PM2.5	Total PM2.5										
Demolition-2028	1.02	7.91	11.52	0.02	0.27	1.18	1.45	0.27	0.22	0.49										
Site Grading-2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Asphalt Paving-2028	1.07	9.70	12.62	0.02	0.35	0.49	0.84	0.32	0.12	0.45										
Asphalt Paving-2029	1.05	9.48	12.56	0.02	0.33	0.49	0.82	0.30	0.12	0.43										
Concrete Paving-2028	4.23E-03	0.38	0.16	2.29E-03	4.41E-03	0.09	0.09	4.41E-03	0.03	0.03										
Project Daily Maximum Emissions	1.07	9.70	12.62	0.02	0.35	1.18	1.45	0.32	0.22	0.49										

IBC Multi-Use Trail Creekwalk Segment

Construction Annual GHG

Year	Metric Tons/Year		
	CalEEMod	Water + Construction Office	Total
2028	337.7	12.6	350.3
2029	49.3	1.4	50.7
Total	387.0	14.0	401.0
Amortized - 30 years	12.9	0.5	13.4

IBC Multi-Use Trail Creekwalk Segment
 Construction GHG
 Construction Water Energy Estimates

Source	Acreage/Day	Number of Days	Total Construction Water Use (Mgal)	Electricity Demand from Water Conveyance (MWh)	Annual Electricity Demand from Water Conveyance (MWh)
Demolition	3.34	130	1.303	8.9	7.7
Grading	3.34	52	0.521	3.5	3.1
Total			1.824	12.4	10.8

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
	3044	725	1537	1501

Sources and Assumptions:

CalEEMod Appendix G, Table G-32

-Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

-Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%. Factor is therefore $(20.94 \text{ GAL/SF/year}) \times (43,560 \text{ SF/acre}) / (365 \text{ days/year}) / (0.85) = 2,940 \text{ gallons/acre/day}$, rounded up to 3,000 gallons/acre/day.

(U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. "Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

Electricity Emission Factor (MT CO2/MWh)	Electricity Emission Factor (lbs CO2/MWh)	Total GHG Emissions Per
2.41E-01	531.98	2.63
(MT CH4/MWh)	(lbs CH4/MWh)	
1.50E-05	0.033	
(MT N2O/MWh)	(lbs N2O/MWh)	
1.81E-06	0.004	

IBC Multi-Use Trail Creekwalk Segment
 Construction GHG Analysis

Temporary Construction Trailer - Electricity

Land Use	Square Feet	Energy Use per year (kWh)	Total Energy Use (kWh)	Energy Use per SF
General Office	2,000	40,936	46,880.36	20.5

Note: Energy use per sf is derived from CalEEMod User Guide, Appendix G, Table G-28 for the Statewide average for General Office Building land use

Electricity Emission Factor	Electricity Emission Factor	Total GHG Emissions Per Year	Year	Proportion of Year Worked	GHG Emissions Per Construction Year
(MT CO2/MWh)	(lbs CO2/MWh)	9.92	2028	1.00	9.94
2.41E-01	531.98		2029	0.14	1.42
(MT CH4/MWh)	(lbs CH4/MWh)				
1.50E-05	0.033				
(MT N2O/MWh)	(lbs N2O/MWh)				
1.81E-06	0.004				

IBC - Creekwalk Segment Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	IBC - Creekwalk Segment
Construction Start Date	1/1/2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.68397269893333, -117.83143434594083
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	3.34	Acre	3.34	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.	1.36	1.07	10.0	12.9	0.03	0.35	1.18	1.23	0.33	0.22	0.48	—	3,182	3,182	0.18	0.30	3.59	3,247
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.36	1.07	10.1	12.8	0.03	0.35	1.18	1.23	0.33	0.22	0.48	—	3,170	3,170	0.16	0.21	0.07	3,235
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.40	4.01	4.97	0.01	0.13	0.65	0.78	0.12	0.13	0.26	—	1,524	1,524	0.08	0.13	0.74	1,566
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.07	0.73	0.91	< 0.005	0.02	0.12	0.14	0.02	0.02	0.05	—	252	252	0.01	0.02	0.12	259

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.36	1.07	10.0	12.9	0.03	0.35	1.18	1.23	0.33	0.22	0.48	—	3,182	3,182	0.18	0.30	3.59	3,247

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.36	1.07	10.1	12.8	0.03	0.35	1.18	1.23	0.33	0.22	0.48	—	3,170	3,170	0.16	0.21	0.07	3,235
2029	1.30	1.05	9.48	12.6	0.02	0.33	0.49	0.82	0.30	0.12	0.43	—	2,819	2,819	0.13	0.15	0.05	2,868
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.53	0.40	4.01	4.97	0.01	0.13	0.65	0.78	0.12	0.13	0.26	—	1,524	1,524	0.08	0.13	0.74	1,566
2029	0.14	0.11	0.98	1.31	< 0.005	0.03	0.05	0.08	0.03	0.01	0.04	—	293	293	0.01	0.02	0.09	298
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.10	0.07	0.73	0.91	< 0.005	0.02	0.12	0.14	0.02	0.02	0.05	—	252	252	0.01	0.02	0.12	259
2029	0.02	0.02	0.18	0.24	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	48.5	48.5	< 0.005	< 0.005	0.01	49.3

3. Construction Emissions Details

3.1. Demolition (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.61	2.04	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	284
Demolition	—	—	—	—	—	—	0.80	0.80	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.61	2.04	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	284
Demolition	—	—	—	—	—	—	0.80	0.80	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.57	0.73	< 0.005	0.01	—	0.01	0.01	—	0.01	—	101	101	< 0.005	< 0.005	—	101
Demolition	—	—	—	—	—	—	0.29	0.29	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.8
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.47	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	126	126	< 0.005	< 0.005	0.36	126
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.1	60.1	< 0.005	0.01	0.13	62.9

Hauling	0.07	0.01	0.92	0.41	0.01	0.01	0.23	0.24	0.01	0.06	0.07	—	817	817	0.06	0.13	1.47	858
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	120	120	< 0.005	< 0.005	0.01	121
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.2	60.2	< 0.005	0.01	< 0.005	62.8
Hauling	0.07	0.01	0.95	0.41	0.01	0.01	0.23	0.24	0.01	0.06	0.07	—	817	817	0.06	0.13	0.04	857
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	43.2	43.2	< 0.005	< 0.005	0.06	43.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.4
Hauling	0.03	< 0.005	0.34	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	291	291	0.02	0.05	0.23	305
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.15	7.15	< 0.005	< 0.005	0.01	7.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.70
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	48.2	48.2	< 0.005	0.01	0.04	50.6

3.3. Grading (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.47	7.32	0.01	0.25	—	0.25	0.23	—	0.23	—	1,137	1,137	0.05	0.01	—	1,141
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.03	0.03	—	—	—	—	—	—	—

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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.64	1.04	< 0.005	0.04	—	0.04	0.03	—	0.03	—	162	162	0.01	< 0.005	—	163	
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	0.02	0.02	0.12	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9	
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.4	75.4	< 0.005	< 0.005	0.22	75.8	
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.1	60.1	< 0.005	0.01	0.13	62.9	
Hauling	0.16	0.03	2.02	0.89	0.01	0.02	0.50	0.52	0.02	0.14	0.16	—	1,797	1,797	0.13	0.28	3.24	1,888	

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.57	8.57	< 0.005	< 0.005	0.01	8.95
Hauling	0.02	< 0.005	0.30	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	256	256	0.02	0.04	0.20	269
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.72	1.72	< 0.005	< 0.005	< 0.005	1.74
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.48
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.4	42.4	< 0.005	0.01	0.03	44.5

3.5. Asphalt Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.96	8.68	11.4	0.02	0.34	—	0.34	0.31	—	0.31	—	1,787	1,787	0.07	0.01	—	1,793
Paving	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.14	0.96	8.68	11.4	0.02	0.34	—	0.34	0.31	—	0.31	—	1,787	1,787	0.07	0.01	—	1,793
Paving	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.87	2.46	< 0.005	0.07	—	0.07	0.07	—	0.07	—	385	385	0.02	< 0.005	—	386
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.34	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.7	63.7	< 0.005	< 0.005	—	63.9
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.93	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	251	251	< 0.005	< 0.005	0.73	253
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	0.07	0.01	0.92	0.41	0.01	0.01	0.23	0.24	0.01	0.06	0.07	—	817	817	0.06	0.13	1.47	858
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.80	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	239	239	< 0.005	0.01	0.02	242

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	0.07	0.01	0.95	0.41	0.01	0.01	0.23	0.24	0.01	0.06	0.07	—	817	817	0.06	0.13	0.04	857
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	52.2	52.2	< 0.005	< 0.005	0.07	52.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	< 0.005	0.21	0.09	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	0.01	0.03	0.14	185
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.65	8.65	< 0.005	< 0.005	0.01	8.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.02	30.6

3.7. Asphalt Paving (2029) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	0.94	8.51	11.4	0.02	0.32	—	0.32	0.29	—	0.29	—	1,786	1,786	0.07	0.01	—	1,793
Paving	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.12	0.10	0.88	1.18	< 0.005	0.03	—	0.03	0.03	—	0.03	—	185	185	0.01	< 0.005	—	186
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.7	30.7	< 0.005	< 0.005	—	30.8
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.75	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	235	235	< 0.005	0.01	0.02	238
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	0.07	0.01	0.92	0.39	0.01	0.01	0.23	0.24	0.01	0.06	0.07	—	797	797	0.05	0.13	0.03	837
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.7	24.7	< 0.005	< 0.005	0.03	25.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	82.6	82.6	0.01	0.01	0.06	86.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.10	4.10	< 0.005	< 0.005	< 0.005	4.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.01	14.4

3.9. Concrete Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	< 0.005	0.37	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.03	0.03	—	327	327	0.02	0.05	0.59	343
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	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	0.03	< 0.005	0.38	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.03	0.03	—	327	327	0.02	0.05	0.02	343
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.01	18.8
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.11

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2028	6/30/2028	5.00	130	—
Grading	Grading	7/1/2028	9/12/2028	5.00	52.0	—
Asphalt Paving	Paving	9/13/2028	2/22/2029	5.00	117	—

Concrete Paving	Trenching	9/13/2028	10/10/2028	5.00	20.0	—
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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
Demolition	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
Asphalt Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Asphalt Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Asphalt Paving	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56
Asphalt Paving	Pumps	Diesel	Average	2.00	8.00	11.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	2.00	10.2	HHDT,MHDT
Demolition	Hauling	10.0	25.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	6.00	18.5	LDA,LDT1,LDT2
Grading	Vendor	2.00	10.2	HHDT,MHDT
Grading	Hauling	22.0	25.0	HHDT

Grading	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Asphalt Paving	Vendor	—	10.2	HHDT,MHDT
Asphalt Paving	Hauling	10.0	25.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Concrete Paving	—	—	—	—
Concrete Paving	Worker	0.00	18.5	LDA,LDT1,LDT2
Concrete Paving	Vendor	—	10.2	HHDT,MHDT
Concrete Paving	Hauling	4.00	25.0	HHDT
Concrete Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
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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 (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	7,546	—
Grading	—	5,670	52.0	0.00	—
Asphalt Paving	0.00	0.00	0.00	0.00	2.04

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	2.04	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	532	0.03	< 0.005
2029	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
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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	9.54	annual days of extreme heat
Extreme Precipitation	3.60	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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A

Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	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	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0
Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.2
Housing	39.2
Linguistic	59.4
Poverty	55.5
Unemployment	5.57

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	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617
Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199
Supermarket access	58.28307455
Tree canopy	29.41100988
Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526
Low-inc renter severe housing cost burden	75.33684075

Uncrowded housing	22.40472219
Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4
Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2
Stroke	98.4
Health Risk Behaviors	—
Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6
Other Decision Support	—
2016 Voting	59.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
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	Site construction phasing information confirmed by BKF Engineers.
Construction: Off-Road Equipment	Equipment provided by BKF Engineers
Construction: Off-Road Equipment EF	Diesel powered Crushing Equipment emission factors from CalEEMod Version 2020 Appendix D
Construction: Dust From Material Movement	see assumptions
Construction: Trips and VMT	see assumption sheet
Construction: Paving	see assumptions sheet

