Appendix B:
Additional Technical Supporting Information

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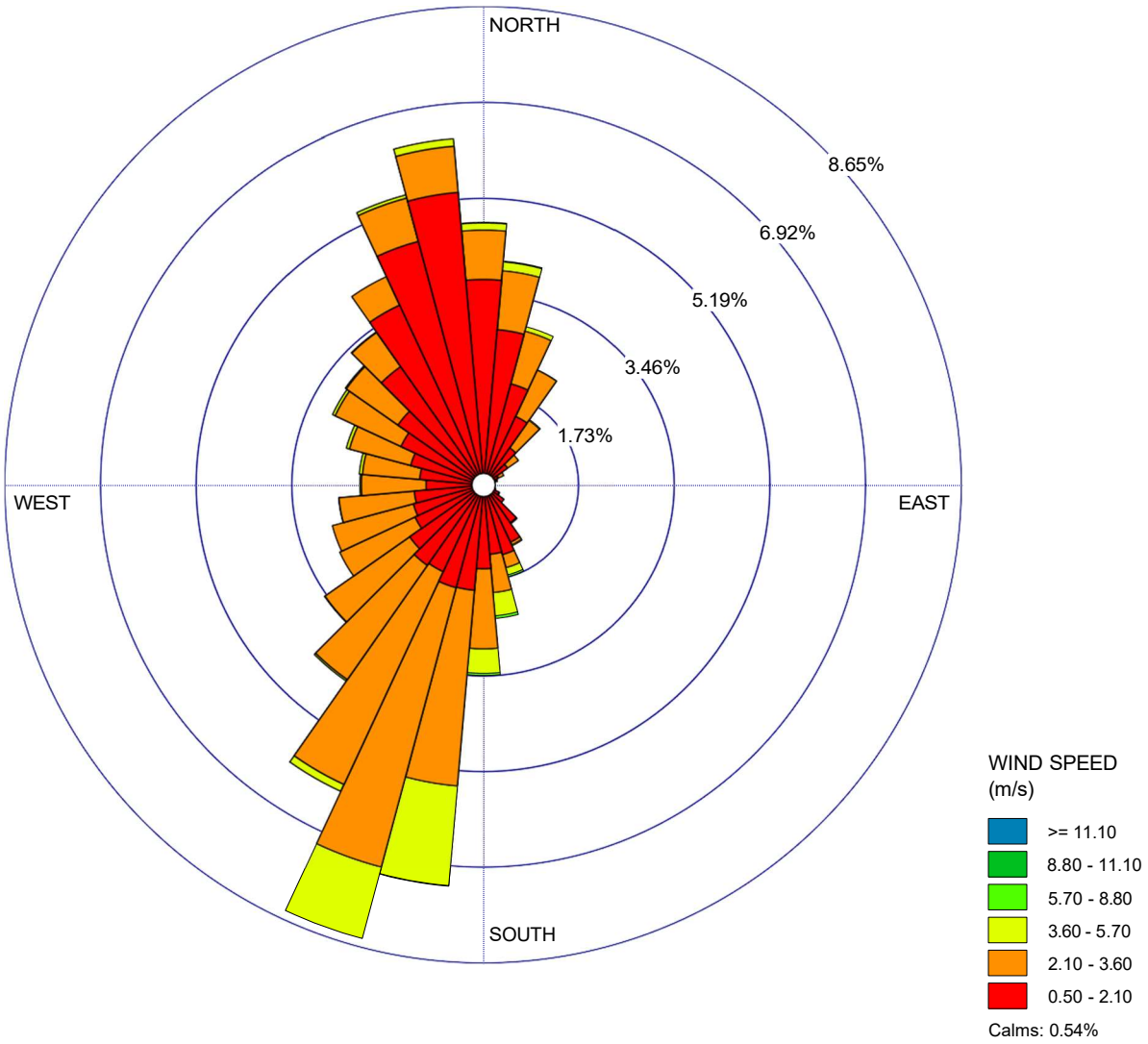
WIND ROSE PLOT:

Bay Area Air District Concord Meteorological Data Wind Direction during Construction Hours

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

Wind Rose is generated just for the hours with emissions when construction would occur or from 8 AM – 5 PM. This corresponds to the modeling hours in AERMOD.

DATA PERIOD:

Start Date: 1/1/2013 - 08:00
End Date: 12/31/2017 - 17:00

CALM WINDS:

0.54%

AVG. WIND SPEED:

1.99 m/s

How to Read a Wind Rose Diagram

The wind rose above shows the general wind direction and speed for the meteorological data set used in the AERMOD modeling for the project.'

The circular format of the wind rose shows the direction the winds blew from and the length of each "spoke" around the circle shows how often the wind blew from that direction.

Roundabout (Community Benefits Variant) - T4 Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roundabout (Community Benefits Variant) - T4
Construction Start Date	11/15/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.6
Precipitation (days)	34
Location	37.93005, -122.02015
County	Contra Costa
City	Walnut Creek
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1308
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.35

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 Asphalt Surfaces	11	1000sqft	0.25	0.00	0.00	0.00	—	Roundabout

Other Non-Asphalt Surfaces	1.00	Acre	1.00	0.00	6,534	—	—	Conservative estimate for additional area (assumed 15% of the additional 1 acre would be landscaped)

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, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.7	1.6	7.7	15	0.02	0.06	2.8	2.9	0.06	1.4	1.4	—	2,534	2,534	0.10	0.02	0.01	2,544
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.06	0.27	0.46	< 0.005	< 0.005	0.05	0.05	< 0.005	0.02	0.02	—	73	73	< 0.005	< 0.005	0.01	73
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.05	0.08	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	12	12	< 0.005	< 0.005	< 0.005	12

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.7	1.6	7.7	15	0.02	0.06	2.8	2.9	0.06	1.4	1.4	—	2,534	2,534	0.10	0.02	0.01	2,544
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06	0.06	0.27	0.46	< 0.005	< 0.005	0.05	0.05	< 0.005	0.02	0.02	—	73	73	< 0.005	< 0.005	0.01	73
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.01	0.01	0.05	0.08	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	12	12	< 0.005	< 0.005	< 0.005	12

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.27	6.4	12	0.02	0.04	—	0.04	0.04	—	0.04	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	2.4	2.4	—	1.2	1.2	—	—	—	—	—	—	—

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	< 0.005	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11	11	< 0.005	< 0.005	—	11
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.9	1.9	< 0.005	< 0.005	—	1.9
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59	59	< 0.005	< 0.005	0.01	60
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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.06
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

3.3. Grading (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	7.7	14	0.02	0.05	—	0.05	0.05	—	0.05	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	2.8	2.8	—	1.3	1.3	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.08	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27	27	< 0.005	< 0.005	—	27
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	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	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.5	4.5	< 0.005	< 0.005	—	4.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79	79	< 0.005	< 0.005	0.01	80
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
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	0.00	0.00	0.00	0.00	0.00	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. Paving (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.28	4.4	6.9	0.01	0.06	—	0.06	0.06	—	0.06	—	991	991	0.04	0.01	—	995
Paving	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.12	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27	27	< 0.005	< 0.005	—	27
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	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.5	4.5	< 0.005	< 0.005	—	4.5
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	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99	99	< 0.005	< 0.005	0.01	100
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.7	2.7	< 0.005	< 0.005	< 0.005	2.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
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. Architectural Coating (2026) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.1	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	1.5	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.7	3.7	< 0.005	< 0.005	—	3.7
Architectural Coatings	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	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00	0.00	0.00	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	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

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
Site Preparation	Site Preparation	11/15/2026	11/17/2026	5.0	2.0	—
Grading	Grading	11/18/2026	11/23/2026	5.0	4.0	—
Paving	Paving	11/24/2026	12/7/2026	5.0	10.0	—
Architectural Coating	Architectural Coating	12/8/2026	12/21/2026	5.0	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.0	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	7.0	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.0	84	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.0	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.0	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.0	7.0	84	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.0	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Interim	1.00	6.0	81	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.0	89	0.36
Paving	Rollers	Diesel	Average	1.00	7.0	36	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.0	84	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.0	37	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	Worker	7.5	12	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.4	HHDT,MHDT
Site Preparation	Hauling	0.00	20	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	10.0	12	LDA,LDT1,LDT2
Grading	Vendor	—	8.4	HHDT,MHDT
Grading	Hauling	0.00	20	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	Worker	13	12	LDA,LDT1,LDT2
Paving	Vendor	—	8.4	HHDT,MHDT
Paving	Hauling	0.00	20	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	0.00	12	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.4	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	HHDT
Architectural Coating	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%

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)
Architectural Coating	0.00	0.00	0.00	0.00	3,274

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	1.9	0.00	0.00
Grading	0.00	0.00	4.0	0.00	0.00
Paving	0.00	0.00	0.00	0.00	1.3

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

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Other Asphalt Surfaces	0.25	100%
Paving	Other Non-Asphalt Surfaces	1.00	0%

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	204	0.03	< 0.005

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Construction: Construction Phases	No demolition or building construction Retained CalEEMod default phase durations
Construction: Off-Road Equipment	MM T4 Interim for Engines 50 hp+

Mitchell Townhomes Project

Construction HRA - Source and Receptor Locations

Source Legend:

Site

Area Source

Truck Route

Receptor Legend:

X Residential Receptor

FCS

An ADEC Innovation

Construction Activity Noise Calculation for Roundabout Improvements

Receptor: Viamante multi-family residential land use	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Paver	77	1	50	35	1	0	81.6	78.6	73059363.5
Roller	80	1	20	60	1	0	77.6	70.6	11574074.1
						Lmax[5]	**82**	**Leq**	**79**

Notes:
[1] Percentage of time activity occurs each hour based on FHWA usage factors
[2] Distance assumes one piece of equipment adjacent to project boundary and others at the closest reasonable operating distance away
[3] Soft ground terrain between project site and receptor.
[4] Shielding due to terrain or structures
[5] Calculated Lmax is the loudest value.

Distance to Receptor (feet)	**8 Hour Average Calculation**					
		Time	Hourly Leq	Leq'	0.1*Leq	antiLog
	Night	12:00 AM	0.0	10.0	1	10
		1:00 AM	0.0	10.0	1	10
		2:00 AM	0.0	10.0	1	10
		3:00 AM	0.0	10.0	1	10
		4:00 AM	0.0	10.0	1	10
		5:00 AM	0.0	10.0	1	10
		6:00 AM	0.0	10.0	1	10
	Day	7:00 AM	0.0	0.0	0	1
35		8:00 AM	79.3	79.3	7.927541981	84633437.6
45		9:00 AM	77.9	77.9	7.791057507	61809824
55		10:00 AM	75.3	75.3	7.52960698	33853765.4
65		11:00 AM	73.1	73.1	7.311954978	20509495.5
Lunch break		12:00 PM	0.0	0.0	0	1
75		1:00 PM	71.3	71.3	7.125511258	13350922
85		2:00 PM	69.6	69.6	6.962438271	9171455.66
95		3:00 PM	68.2	68.2	6.817524232	6569377.71
105		4:00 PM	66.9	66.9	6.687127151	4865496.35
		5:00 PM	0.0	0.0	0	1
Notes: *Equipment is measured as		6:00 PM	0.0	0.0	0	1
operating across the project site	Evening	7:00 PM	0.0	0.0	0	1
		8:00 PM	0.0	0.0	0	1
		9:00 PM	0.0	0.0	0	1
	Night	10:00 PM	0.0	10.0	1	10
		11:00 PM	0.0	10.0	1	10
				Sum		234763871
				Sum/8		29345483.9
				Log10(Sum/8)		7.46754128
				10*Log10(Sum/8)		74.6754128
				8 Hour Average		75

Receptor: Viamante multi-family residential land use	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Paver	77	1	50	45	1	0	77.9	75.4	34374981.7
Roller	80	1	20	45	1	0	80.9	74.4	27434842.2
								Leq	**78**

Receptor: Viamante multi-family residential land use	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Paver	77	1	50	55	1	0	76.2	72.7	18827469.3
Roller	80	1	20	55	1	0	79.2	71.8	15026296
								Leq	**75**

Receptor: Viamante multi-family residential land use									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	Lmax	Quantity	factor[1]	[2]	Effect[3]	(dBA)[4]	Lmax	Leq	Energy
Paver	77	1	50	65	1	0	74.7	70.6	11406172.8
Roller	80	1	20	65	1	0	77.7	69.6	9103322.71
								Leq	73

Receptor: Viamante multi-family residential land use									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	Lmax	Quantity	factor[1]	[2]	Effect[3]	(dBA)[4]	Lmax	Leq	Energy
Paver	77	1	50	75	1	0	73.5	68.7	7424996.05
Roller	80	1	20	75	1	0	76.5	67.7	5925925.93
								Leq	71

Receptor: Viamante multi-family residential land use									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	Lmax	Quantity	factor[1]	[2]	Effect[3]	(dBA)[4]	Lmax	Leq	Energy
Paver	77	1	50	85	1	0	72.4	67.1	5100623.18
Roller	80	1	20	85	1	0	75.4	66.1	4070832.49
								Leq	70

Receptor: Viamante multi-family residential land use									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	Lmax	Quantity	factor[1]	[2]	Effect[3]	(dBA)[4]	Lmax	Leq	Energy
Paver	77	1	50	95	1	0	71.4	65.6	3653500.76
Roller	80	1	20	95	1	0	74.4	64.6	2915876.95
								Leq	68

Receptor: Viamante multi-family residential land use									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	Lmax	Quantity	factor[1]	[2]	Effect[3]	(dBA)[4]	Lmax	Leq	Energy
Paver	77	1	50	105	1	0	70.6	64.3	2705902.35
Roller	80	1	20	105	1	0	73.6	63.3	2159594
								Leq	67

Construction Activity Noise Calculation at Montessori School

Montesorri School	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	41	1	0	87.6	83.6	229413217
Excavator	85	1	40	91	1	0	77.2	73.2	20981949
Front End Loader	80	1	40	91	1	0	72.2	68.2	6635074.86
Backhoe	80	1	40	91	1	0	72.2	68.2	6635074.86
						Lmax[5]	**88**	**Leq**	**84**

Notes:
[1] Percentage of time activity occurs each hour based on FHWA usage factors
[2] Distance assumes one piece of equipment adjacent to project boundary and others at the closest reasonable operating distance away
[3] Soft ground terrain between project site and receptor.
[4] Shielding due to terrain or structures
[5] Calculated Lmax is the loudest value.

Distance to Receptor (feet)		8 Hour Average Calculation				
		Time	Hourly Leq	Leq'	0.1*Leq	antiLog
	Night	12:00 AM	0.0	0.0	0	1
		1:00 AM	0.0	0.0	0	1
		2:00 AM	0.0	0.0	0	1
		3:00 AM	0.0	0.0	0	1
		4:00 AM	0.0	0.0	0	1
		5:00 AM	0.0	0.0	0	1
		6:00 AM	0.0	0.0	0	1
	Day	7:00 AM	0.0	0.0	0	1
41		8:00 AM	84.2	84.2	8.421053003	263665315
91		9:00 AM	77.4	77.4	7.742206871	55234047.8
141		10:00 AM	71.7	71.7	7.17167371	14848196.6
191		11:00 AM	67.8	67.8	6.776230946	5973528.59
Lunch break		12:00 PM	0.0	0.0	0	1
241		1:00 PM	64.7	64.7	6.47327992	2973582.01
291		2:00 PM	62.3	62.3	6.227652081	1689087.24
341		3:00 PM	60.2	60.2	6.021067911	1049706.56
391		4:00 PM	58.4	58.4	5.842800776	696307.024
		5:00 PM	0.0	0.0	0	1
Notes: *Equipment is measured as		6:00 PM	0.0	0.0	0	1
operating across the project site	Evening	7:00 PM	0.0	0.0	0	1
		8:00 PM	0.0	0.0	0	1
		9:00 PM	0.0	0.0	0	1
	Night	10:00 PM	0.0	0.0	0	1
		11:00 PM	0.0	0.0	0	1
				Sum		346129787
				Sum/8		43266223.4
				Log10(Sum/8)		7.63614899
				10*Log10(Sum/8)		76.3614899
				8 Hour Average		76

Montesorri School	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	91	1	0	77.2	73.2	20981949
Excavator	85	1	40	91	1	0	77.2	73.2	20981949
Front End Loader	80	1	40	91	1	0	72.2	68.2	6635074.86
Backhoe	80	1	40	91	1	0	72.2	68.2	6635074.86
								Leq	**77**

Montesorri School	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	141	1	0	71.5	67.5	5640435.88
Excavator	85	1	40	141	1	0	71.5	67.5	5640435.88
Front End Loader	80	1	40	141	1	0	66.5	62.5	1783662.44
Backhoe	80	1	40	141	1	0	66.5	62.5	1783662.44
								Leq	**72**

Montesorri School									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	191	1	0	67.5	63.6	2269184.99
Excavator	85	1	40	191	1	0	67.5	63.6	2269184.99
Front End Loader	80	1	40	191	1	0	62.5	58.6	717579.301
Backhoe	80	1	40	191	1	0	62.5	58.6	717579.301
							Leq		**68**

Montesorri School									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	241	1	0	64.5	60.5	1129584.9
Excavator	85	1	40	241	1	0	64.5	60.5	1129584.9
Front End Loader	80	1	40	241	1	0	59.5	55.5	357206.108
Backhoe	80	1	40	241	1	0	59.5	55.5	357206.108
							Leq		**65**

Montesorri School									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	291	1	0	62.1	58.1	641639.42
Excavator	85	1	40	291	1	0	62.1	58.1	641639.42
Front End Loader	80	1	40	291	1	0	57.1	53.1	202904.2
Backhoe	80	1	40	291	1	0	57.1	53.1	202904.2
							Leq		**62**

Montesorri School									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	341	1	0	60.0	56.0	398755.666
Excavator	85	1	40	341	1	0	60.0	56.0	398755.666
Front End Loader	80	1	40	341	1	0	55.0	51.0	126097.614
Backhoe	80	1	40	341	1	0	55.0	51.0	126097.614
							Leq		**60**

Montesorri School									
	Reference (dBA) 50 ft		Usage	Distance to Receptor	Ground	Shielding	Calculated (dBA)		
Equipment Description	**Lmax**	**Quantity**	**factor[1]**	**[2]**	**Effect[3]**	**(dBA)[4]**	**Lmax**	**Leq**	**Energy**
Grader	85	1	40	391	1	0	58.2	54.2	264508.561
Excavator	85	1	40	391	1	0	58.2	54.2	264508.561
Front End Loader	80	1	40	391	1	0	53.2	49.2	83644.9512
Backhoe	80	1	40	391	1	0	53.2	49.2	83644.9512
							Leq		**58**

At Closest Structure to the Roundabout Improvements

PPVequip = PPVref x (25/D)^1.5

LvEquip = Lvref - 30*LOG(D/25)

Input the desired calculation distance into "yellow" cells

	"D"	PPVequip	LvEquip
Pile driver (impact)	NA	#VALUE!	#VALUE!
Pile driver (sonic)	NA	#VALUE!	#VALUE!
Clam shovel drop (slurry wall)	NA	#VALUE!	#VALUE!
Hydromill (slurry wall) - in soil	NA	#VALUE!	#VALUE!
Hydromill (slurry wall) - in rock	NA	#VALUE!	#VALUE!
Vibratory roller	30	0.1597524	91.624563
Hoe ram	NA	#VALUE!	#VALUE!
Large bulldozer	NA	#VALUE!	#VALUE!
Caisson drilling	NA	#VALUE!	#VALUE!
Loaded trucks	NA	#VALUE!	#VALUE!
Jackhammer	NA	#VALUE!	#VALUE!
Small bulldozer	NA	#VALUE!	#VALUE!

Reference Typical Vibration Source Levels for Construction Equipn

	PPV at 25 ft	Aproximate Lv at 25 ft
Pile driver (impact)	0.644	104
Pile driver (sonic)	0.17	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall) - in soil	0.008	66
Hydromill (slurry wall) - in rock	0.017	75
Vibratory roller	0.21	94
Hoe ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

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