October 2025 | Initial Study

APPENDICES

Multipurpose Athletic Field Upgrades Project

Appendix A – Air Quality

VOCES Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	VOCES
Construction Start Date	4/1/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	20.6
Location	34.23396270275131, -118.39926511756705
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3786
EDFZ	17
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.30

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
High School	82.8	1000sqft	1.90	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-4*	Use Local and Sustainable Building Materials
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-13	Use Low-VOC Paints for Construction

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

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	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.	18.3	18.3	12.2	14.5	0.02	0.54	7.21	7.75	0.50	3.46	3.95	—	2,588	2,588	0.11	0.08	2.57	2,599
Mit.	18.2	18.2	8.57	15.0	0.02	0.37	2.89	3.26	0.34	1.37	1.71	—	2,588	2,588	0.11	0.08	2.57	2,599
% Reduced	1%	< 0.5%	30%	-4%	—	31%	60%	58%	31%	60%	57%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.65	0.54	4.54	6.69	0.01	0.13	0.58	0.71	0.12	0.14	0.26	—	1,833	1,833	0.06	0.08	0.07	1,860
Mit.	0.34	0.30	2.54	7.64	0.01	0.07	0.58	0.65	0.07	0.14	0.21	—	1,833	1,833	0.06	0.08	0.07	1,860
% Reduced	48%	45%	44%	-14%	—	47%	—	9%	45%	—	21%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.70	0.67	3.95	5.12	0.01	0.15	1.64	1.79	0.14	0.74	0.88	—	1,126	1,126	0.04	0.03	0.40	1,137
Mit.	0.60	0.59	2.30	5.53	0.01	0.09	0.77	0.86	0.08	0.32	0.40	—	1,126	1,126	0.04	0.03	0.40	1,137
% Reduced	15%	12%	42%	-8%	—	43%	53%	52%	43%	57%	54%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.12	0.72	0.93	< 0.005	0.03	0.30	0.33	0.03	0.13	0.16	—	186	186	0.01	0.01	0.07	188
Mit.	0.11	0.11	0.42	1.01	< 0.005	0.02	0.14	0.16	0.01	0.06	0.07	—	186	186	0.01	0.01	0.07	188
% Reduced	15%	12%	42%	-8%	—	43%	53%	52%	43%	57%	54%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	3,000
Unmit.	No	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	No
Mit.	No	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	No
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	3,000
Unmit.	No	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	No
Mit.	No	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	No

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.68	1.41	12.2	14.5	0.02	0.54	7.21	7.75	0.50	3.46	3.95	—	2,588	2,588	0.11	0.08	2.57	2,599

2028	18.3	18.3	4.28	7.19	0.01	0.15	0.58	0.70	0.13	0.14	0.25	—	1,839	1,839	0.06	0.08	2.36	1,868
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.65	0.54	4.54	6.69	0.01	0.13	0.58	0.71	0.12	0.14	0.26	—	1,833	1,833	0.06	0.08	0.07	1,860
2028	0.63	0.52	4.32	6.58	0.01	0.12	0.58	0.70	0.11	0.14	0.25	—	1,816	1,816	0.06	0.08	0.06	1,842
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.55	0.46	3.95	5.12	0.01	0.15	1.64	1.79	0.14	0.74	0.88	—	1,126	1,126	0.04	0.03	0.40	1,137
2028	0.70	0.67	1.42	2.22	< 0.005	0.04	0.16	0.20	0.04	0.04	0.08	—	560	560	0.02	0.02	0.29	568
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.10	0.08	0.72	0.93	< 0.005	0.03	0.30	0.33	0.03	0.13	0.16	—	186	186	0.01	0.01	0.07	188
2028	0.13	0.12	0.26	0.40	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	—	92.8	92.8	< 0.005	< 0.005	0.05	94.1

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.20	1.02	8.57	15.0	0.02	0.37	2.89	3.26	0.34	1.37	1.71	—	2,588	2,588	0.11	0.08	2.57	2,599
2028	18.2	18.2	2.47	7.82	0.01	0.07	0.58	0.65	0.07	0.14	0.21	—	1,839	1,839	0.06	0.08	2.36	1,868
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.34	0.30	2.54	7.64	0.01	0.07	0.58	0.65	0.07	0.14	0.21	—	1,833	1,833	0.06	0.08	0.07	1,860
2028	0.34	0.29	2.51	7.53	0.01	0.07	0.58	0.65	0.07	0.14	0.21	—	1,816	1,816	0.06	0.08	0.06	1,842
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.32	0.28	2.30	5.53	0.01	0.09	0.77	0.86	0.08	0.32	0.40	—	1,126	1,126	0.04	0.03	0.40	1,137
2028	0.60	0.59	0.77	2.49	< 0.005	0.02	0.16	0.18	0.02	0.04	0.06	—	560	560	0.02	0.02	0.29	568

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.06	0.05	0.42	1.01	< 0.005	0.02	0.14	0.16	0.01	0.06	0.07	—	186	186	0.01	0.01	0.07	188
2028	0.11	0.11	0.14	0.45	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	92.8	92.8	< 0.005	< 0.005	0.05	94.1

3. Construction Emissions Details

3.1. Site Preparation (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.19	10.4	11.6	0.02	0.47	—	0.47	0.43	—	0.43	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	6.26	6.26	—	3.00	3.00	—	—	—	—	—	—	—
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	0.43	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	84.9	84.9	< 0.005	< 0.005	—	85.2

Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.1	14.1	< 0.005	< 0.005	—	14.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.7	99.7	< 0.005	< 0.005	0.31	101
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.94	3.94	< 0.005	< 0.005	0.01	3.99
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	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.66

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

3.2. Site Preparation (2027) - Mitigated

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	0.19	0.19	1.01	11.9	0.02	0.04	—	0.04	0.04	—	0.04	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	2.44	2.44	—	1.17	1.17	—	—	—	—	—	—	—
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	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	84.9	84.9	< 0.005	< 0.005	—	85.2
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.1	14.1	< 0.005	< 0.005	—	14.1
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	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	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.7	99.7	< 0.005	< 0.005	0.31	101
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.94	3.94	< 0.005	< 0.005	0.01	3.99
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	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.66
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 (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.2	13.9	0.02	0.54	—	0.54	0.50	—	0.50	—	2,455	2,455	0.10	0.02	—	2,464
Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
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	0.27	0.23	2.00	2.28	< 0.005	0.09	—	0.09	0.08	—	0.08	—	404	404	0.02	< 0.005	—	405
Dust From Material Movement	—	—	—	—	—	—	1.16	1.16	—	0.56	0.56	—	—	—	—	—	—	—
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	0.05	0.04	0.37	0.42	< 0.005	0.02	—	0.02	0.01	—	0.01	—	66.8	66.8	< 0.005	< 0.005	—	67.1

Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.60	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	133	133	0.01	< 0.005	0.41	135
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	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.0	21.0	< 0.005	< 0.005	0.03	21.3
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.48	3.48	< 0.005	< 0.005	< 0.005	3.52
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

3.4. Grading (2027) - Mitigated

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	1.16	0.99	8.53	14.4	0.02	0.37	—	0.37	0.34	—	0.34	—	2,455	2,455	0.10	0.02	—	2,464
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
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	0.19	0.16	1.40	2.36	< 0.005	0.06	—	0.06	0.06	—	0.06	—	404	404	0.02	< 0.005	—	405
Dust From Material Movement	—	—	—	—	—	—	0.45	0.45	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.26	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.8	66.8	< 0.005	< 0.005	—	67.1
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.60	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	133	133	0.01	< 0.005	0.41	135
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	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.0	21.0	< 0.005	< 0.005	0.03	21.3
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.48	3.48	< 0.005	< 0.005	< 0.005	3.52
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. Building Construction (2027) - Unmitigated

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

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

Off-Road Equipment	0.49	0.41	3.91	4.69	0.01	0.13	—	0.13	0.12	—	0.12	—	964	964	0.04	0.01	—	967
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	0.49	0.41	3.91	4.69	0.01	0.13	—	0.13	0.12	—	0.12	—	964	964	0.04	0.01	—	967
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.30	1.56	< 0.005	0.04	—	0.04	0.04	—	0.04	—	321	321	0.01	< 0.005	—	322
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.24	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.1	53.1	< 0.005	< 0.005	—	53.3
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.12	2.10	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	465	465	0.02	0.02	1.45	472
Vendor	0.03	0.01	0.46	0.22	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	428	428	0.02	0.06	1.12	447

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.15	1.78	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	441	441	0.01	0.02	0.04	446
Vendor	0.03	0.01	0.48	0.22	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	428	428	0.02	0.06	0.03	446
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	0.05	0.04	0.05	0.62	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	149	149	< 0.005	0.01	0.21	151
Vendor	0.01	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	142	142	0.01	0.02	0.16	149
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.03	25.0
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	0.03	24.6
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

3.6. Building Construction (2027) - Mitigated

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	0.17	0.16	1.91	5.64	0.01	0.07	—	0.07	0.06	—	0.06	—	964	964	0.04	0.01	—	967
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	0.17	0.16	1.91	5.64	0.01	0.07	—	0.07	0.06	—	0.06	—	964	964	0.04	0.01	—	967
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	0.06	0.05	0.64	1.88	< 0.005	0.02	—	0.02	0.02	—	0.02	—	321	321	0.01	< 0.005	—	322
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	0.12	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.1	53.1	< 0.005	< 0.005	—	53.3
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.12	2.10	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	465	465	0.02	0.02	1.45	472
Vendor	0.03	0.01	0.46	0.22	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	428	428	0.02	0.06	1.12	447
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.15	1.78	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	441	441	0.01	0.02	0.04	446

Vendor	0.03	0.01	0.48	0.22	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	428	428	0.02	0.06	0.03	446
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	0.05	0.04	0.05	0.62	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	149	149	< 0.005	0.01	0.21	151
Vendor	0.01	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	142	142	0.01	0.02	0.16	149
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.03	25.0
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	0.03	24.6
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. Building Construction (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	0.47	0.39	3.72	4.68	0.01	0.12	—	0.12	0.11	—	0.11	—	964	964	0.04	0.01	—	968
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	0.47	0.39	3.72	4.68	0.01	0.12	—	0.12	0.11	—	0.11	—	964	964	0.04	0.01	—	968

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.27	< 0.005	0.03	—	0.03	0.03	—	0.03	—	260	260	0.01	< 0.005	—	261
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	0.18	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	43.1	43.1	< 0.005	< 0.005	—	43.3
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.12	1.97	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	457	457	< 0.005	0.02	1.30	463
Vendor	0.03	0.01	0.44	0.21	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	418	418	0.02	0.06	1.06	437
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.14	1.68	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	433	433	0.01	0.02	0.03	438
Vendor	0.03	0.01	0.46	0.21	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	418	418	0.02	0.06	0.03	436
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	0.04	0.03	0.04	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	119	119	< 0.005	< 0.005	0.15	120
Vendor	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.12	118

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	19.7	19.7	< 0.005	< 0.005	0.03	19.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.02	19.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2028) - Mitigated

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	0.17	0.16	1.91	5.64	0.01	0.07	—	0.07	0.06	—	0.06	—	964	964	0.04	0.01	—	968
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	0.17	0.16	1.91	5.64	0.01	0.07	—	0.07	0.06	—	0.06	—	964	964	0.04	0.01	—	968
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	0.05	0.04	0.52	1.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	260	260	0.01	< 0.005	—	261

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	0.09	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.1	43.1	< 0.005	< 0.005	—	43.3
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.12	1.97	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	457	457	< 0.005	0.02	1.30	463
Vendor	0.03	0.01	0.44	0.21	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	418	418	0.02	0.06	1.06	437
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.14	1.68	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	433	433	0.01	0.02	0.03	438
Vendor	0.03	0.01	0.46	0.21	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.04	—	418	418	0.02	0.06	0.03	436
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	0.04	0.03	0.04	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	119	119	< 0.005	< 0.005	0.15	120
Vendor	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.12	118
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	19.7	19.7	< 0.005	< 0.005	0.03	19.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.02	19.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. 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	0.51	0.43	4.13	6.47	0.01	0.15	—	0.15	0.13	—	0.13	—	991	991	0.04	0.01	—	995
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.3	54.3	< 0.005	< 0.005	—	54.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.99	8.99	< 0.005	< 0.005	—	9.03
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	0.05	0.04	0.04	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	163	163	< 0.005	0.01	0.47	165
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.08	31.2
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.60	8.60	< 0.005	< 0.005	0.01	8.71
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
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

3.10. Paving (2028) - Mitigated

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	0.15	0.14	1.30	6.89	0.01	0.03	—	0.03	0.03	—	0.03	—	991	991	0.04	0.01	—	995
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	54.3	54.3	< 0.005	< 0.005	—	54.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.99	8.99	< 0.005	< 0.005	—	9.03
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	0.05	0.04	0.04	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	163	163	< 0.005	0.01	0.47	165
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.08	31.2
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.60	8.60	< 0.005	< 0.005	0.01	8.71

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
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

3.11. Architectural Coating (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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	18.2	18.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67

Architectural	0.50	0.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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

3.12. Architectural Coating (2028) - Mitigated

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	0.02	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	18.2	18.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	0.50	0.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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

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	4/1/2027	4/21/2027	5.00	15.0	Site Preparation
Grading	Grading	4/22/2027	7/14/2027	5.00	60.0	Grading
Building Construction	Building Construction	7/15/2027	5/17/2028	5.00	220	Building Remodel & Field Construction
Paving	Paving	5/18/2028	6/14/2028	5.00	20.0	Paving
Architectural Coating	Architectural Coating	6/15/2028	6/28/2028	5.00	10.0	Architectural coating

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	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	4.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	4.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	84.0	0.37
Building Construction	Aerial Lifts	Diesel	Tier 4 Final	1.00	4.00	46.0	0.31
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	4.00	33.0	0.73

Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	1.00	4.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	4.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	4.00	84.0	0.37
Building Construction	Aerial Lifts	Diesel	Tier 3	1.00	4.00	46.0	0.31
Building Construction	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	4.00	33.0	0.73
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36

Paving	Rollers	Diesel	Tier 4 Final	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	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	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	35.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	14.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	1.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.00	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	35.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	14.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	1.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.00	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	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	500	0.00	0.00	39,000

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	14.1	0.00	—
Grading	0.00	0.00	60.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.90

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
High School	0.90	20%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	690	0.05	0.01
2028	0.00	690	0.05	0.01

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	13.6	annual days of extreme heat
Extreme Precipitation	6.30	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.

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	93.6
AQ-PM	59.5
AQ-DPM	82.6
Drinking Water	83.1
Lead Risk Housing	78.4
Pesticides	0.00
Toxic Releases	59.8
Traffic	93.2
Effect Indicators	—
CleanUp Sites	96.0
Groundwater	32.5
Haz Waste Facilities/Generators	80.9
Impaired Water Bodies	43.8
Solid Waste	96.7
Sensitive Population	—
Asthma	81.9
Cardio-vascular	67.1
Low Birth Weights	96.6
Socioeconomic Factor Indicators	—

Education	94.6
Housing	96.1
Linguistic	47.1
Poverty	86.4
Unemployment	49.9

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	6.274862056
Employed	51.27678686
Median HI	25.8052098
Education	—
Bachelor's or higher	6.454510458
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	28.53843193
Active commuting	84.58873348
Social	—
2-parent households	33.00397793
Voting	16.98960606
Neighborhood	—
Alcohol availability	17.97767227
Park access	11.06120878
Retail density	68.57436161
Supermarket access	15.11612986

Tree canopy	21.63480046
Housing	—
Homeownership	16.57898114
Housing habitability	3.977928911
Low-inc homeowner severe housing cost burden	2.848710381
Low-inc renter severe housing cost burden	20.44142179
Uncrowded housing	8.571795201
Health Outcomes	—
Insured adults	15.50109072
Arthritis	86.1
Asthma ER Admissions	16.9
High Blood Pressure	83.5
Cancer (excluding skin)	93.3
Asthma	37.3
Coronary Heart Disease	66.7
Chronic Obstructive Pulmonary Disease	53.7
Diagnosed Diabetes	29.7
Life Expectancy at Birth	58.6
Cognitively Disabled	80.8
Physically Disabled	67.1
Heart Attack ER Admissions	43.9
Mental Health Not Good	19.7
Chronic Kidney Disease	45.1
Obesity	19.0
Pedestrian Injuries	93.2
Physical Health Not Good	21.1
Stroke	58.2
Health Risk Behaviors	—

Binge Drinking	47.1
Current Smoker	25.4
No Leisure Time for Physical Activity	22.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	10.6
Elderly	96.5
English Speaking	20.8
Foreign-born	89.7
Outdoor Workers	17.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	32.5
Traffic Density	91.5
Traffic Access	71.4
Other Indices	—
Hardship	87.4
Other Decision Support	—
2016 Voting	13.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	99.0
Healthy Places Index Score for Project Location (b)	12.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
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

Measure Title	Co-Benefits Achieved
CCD-1: Consult Pre-existing Community Knowledge/Priorities	—
CE-2: Ensure Active Modes Access During Construction	—
CE-3: Post a Clear, Visible Enforcement and Complaint Sign	—
PH-2: Increase Urban Tree Canopy and Green Spaces	—
IEP-1: Local Labor and Apprenticeships (Construction)	—
IEP-4: Use of Locally/Regionally Manufactured Products and Materials	—
IC-1: Invests in Local Arts and Culture to Affirm Community Identity	—
IC-3: Promotes Accessibility	—

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

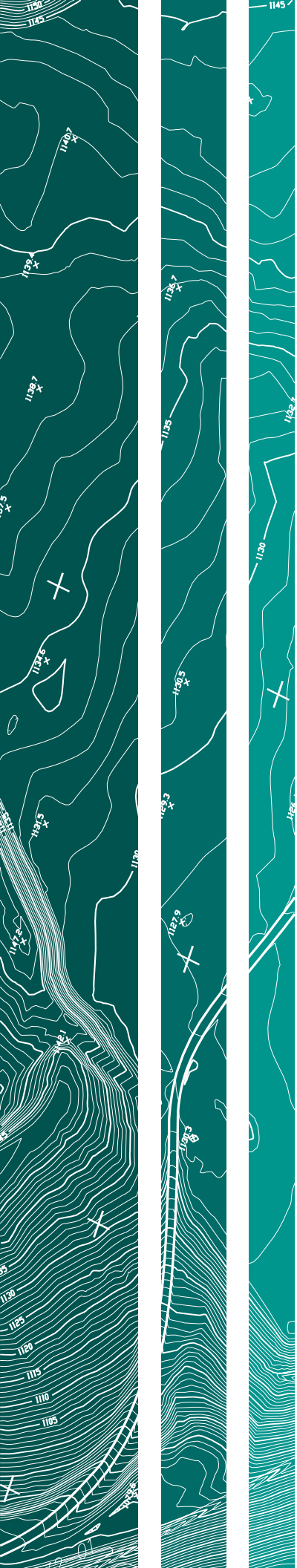
7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	No building construction and no additional landscape anticipated
Construction: Construction Phases	Estimated construction phase length
Construction: Off-Road Equipment	Equipment as estimated
Construction: Trips and VMT	Workers as estimated
Construction: Architectural Coatings	Areas as estimated
Construction: Paving	Parking area as estimated

Appendix B – Limited Geotechnical Report



GEOCON

LIMITED GEOTECHNICAL INVESTIGATION

PROPOSED MULTIPURPOSE ATHLETIC FIELD UPGRADES
VALLEY OAKS CENTER FOR ENRICHED STUDIES (VOCES)
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

MAY 22, 2024
PROJECT NO. A8326-06-111

PREPARED FOR:
Los Angeles Unified School District
Los Angeles, California

GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. A8326-06-111
May 22, 2024

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Subject: PROPOSAL FOR LIMITED GEOTECHNICAL INVESTIGATION
PROPOSED MULTIPURPOSE ATHLETIC FIELD UPGRADES
VALLEY OAKS CENTER FOR ENRICHED STUDIES (VOCES)
9171 TELFAIR AVENUE, SUN VALLEY, CALIFORNIA

Ladies and Gentlemen:

In accordance with your authorization of our proposal dated February 14, 2024, we have performed a geotechnical investigation for proposed multipurpose athletic field upgrades on the southwest area of the campus located at 9171 Telfair Avenue in the city of Sun Valley, California. The accompanying report presents the findings of our study and our conclusions and recommendations pertaining to the geotechnical aspects of proposed design and construction. Based on the results of our investigation, it is our opinion that proposed improvements can be constructed as proposed, provided the recommendations of this report are followed and implemented during design and construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,

GEOCON WEST, INC.

Rex Panoy
Senior Staff Engineer

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a limited geotechnical investigation for the proposed multipurpose athletic field upgrades on the southwest area of the campus located at 9171 Telfair Avenue in the city of Sun Valley, California (see Vicinity Map, Figure1). The purpose of the investigation was to evaluate subsurface soil and geologic conditions underlying the site and, based on conditions encountered, to provide conclusions and recommendations pertaining to the geotechnical aspects of proposed design and construction.

The scope of this investigation included a site reconnaissance, field exploration, laboratory testing, engineering analysis, and the preparation of this report. The site was explored on March 27, 2024, by excavating four 8-inch-diameter borings using a truck-mounted hollow-stem auger drilling machine to depths of 25 feet beneath the ground surface. Additionally, two 6-inch diameter borings were excavated using hand auger equipment to a depth of 5 feet for percolation testing to determine the feasibility of stormwater infiltration. The approximate locations of the exploratory borings are depicted on the Site Plan (see Figure 2). A detailed discussion of the field investigation, including boring logs, is presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to determine pertinent physical and chemical soil properties. Appendix B presents a summary of the laboratory test results.

The recommendations presented herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE AND PROJECT DESCRIPTION

The proposed improvements are located in the southwest portion of the campus located at 9171 Telfair Avenue in the city of Sun Valley, California. The area of proposed improvement is currently occupied by a grass sports field, an asphalt paved playground with basketball and volleyball courts, and hand ball courts. The area is bounded by classrooms and a gymnasium to the northeast, by Allegheny Street to the southeast, by Haddon Avenue to the southwest, and by Sheldon Street to the northwest. The site is relatively level and surface water drainage at the site appears to flow to the city streets.

Based on the information provided by the Client, it is our understanding that the proposed multipurpose athletic field improvements will consist of demolishing the existing field lighting and constructing new football field lighting, goal posts, and scoreboards. In addition to the proposed improvements, the removal and relocation of the handball courts and 5-tier portable bleachers are also planned. Due to the preliminary nature of the project, plans depicting the proposed improvements are not available. The existing site conditions are provided on the Site Plan (see Figure 2).

Based on the preliminary nature of the design at this time, loads were not available. It is anticipated that column loads for the proposed improvements will be up to 50 kips, and wall loads will be up to 1 kip per linear foot.

Once the design phase and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Any changes in the design, location or elevation of any structure, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

3. SOIL AND GEOLOGIC CONDITIONS

Based on our field investigation and published geologic maps of the area, the site is underlain by artificial fill and Holocene age young alluvium that consist of sand and silt, with lesser amounts of clay (California Geological Survey, 2012). Detailed stratigraphic profiles of the materials encountered at the site are provided on the boring logs in Appendix A.

3.1 Artificial Fill

Artificial fill was encountered in our explorations to a maximum depth of 2½ feet below existing ground surface. The artificial fill generally consists of reddish brown to dark brown silty sand that can be characterized as slightly moist to moist and loose to medium dense. The fill is likely the result of past grading or construction activities at the site. Deeper fill may exist between excavations and in other portions of the site that were not directly explored.

3.2 Alluvium

Holocene age young alluvial fan deposits were encountered beneath the fill. The alluvium generally consists of yellowish brown to brown poorly- graded sand with gravel to well-graded sand with various amounts of silt and cobbles (up to 4-inches). The alluvial soils are characterized as dry to slightly moist and medium dense to very dense. Sample blow counts may not be representative and could be locally inflated due to gravel and cobble content.

4. GROUNDWATER

Based on a review of the Seismic Hazard Evaluation Report for the Van Nuys 7.5 Minute Quadrangle, (California Division of Mines & Geology [CDMG], 1997), the historic high groundwater level beneath the site is greater than 180 feet below the existing ground surface. Groundwater information in this publication is based on data collected from the early 1900's to the late 1990's. Based on current groundwater basin management practices, it is unlikely that groundwater levels will ever exceed the historic high levels.

Groundwater was not encountered in our borings, drilled to a maximum depth of approximately 25 feet below the existing ground surface. Based on the lack of groundwater in our borings, the reported historic high groundwater levels in the immediate area (CDMG, 1997), and the depth of proposed construction, static groundwater is neither expected to be encountered during construction, nor have a detrimental effect on the project. However, it is not uncommon for groundwater levels to vary seasonally or for groundwater seepage conditions to develop where none previously existed (especially in impermeable fine-grained soils which are heavily irrigated or after seasonal rainfall), groundwater seepage levels encountered during construction may be actually higher than those encountered during our investigation. In addition, recent requirements for storm water infiltration could result in shallower seepage conditions in the region. Proper surface drainage of irrigation and precipitation will be critical for future performance of the project. Recommendations for drainage are provided in the Surface Drainage section of this report (see Section 6.14).

5. SEISMIC DESIGN CRITERIA

The following table summarizes the site-specific design criteria obtained from the 2022 California Building Code (CBC; Based on the 2021 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. The data was calculated using the online application U.S. Seismic Design Maps, provided by the Structural Engineers Association of California (SEAOC). The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2022 CBC and Table 20.3-1 of ASCE 7-16. The values presented on the following page are for the risk-targeted maximum considered earthquake (MCER).

2022 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2022 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	2.12g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.727g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.0	Table 1613.2.3(1)
Site Coefficient, F_V	1.7	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	2.12g	Section 1613.2.3 (Eqn 16-20)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	1.236g*	Section 1613.2.3 (Eqn 16-21)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	1.414g	Section 1613.2.4 (Eqn 16-22)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.824*	Section 1613.2.4 (Eqn 16-23)

*Per Supplement 3 of ASCE 7-16, a ground motion hazard analysis (GMHA) shall be performed for projects on Site Class "D" sites with 1-second spectral acceleration (S1) greater than or equal to 0.2g, which is true for this site. However, Supplement 3 of ASCE 7-16 provides an exception stating that that the GMHA may be waived provided that the parameter SM1 is increased by 50% for all applications of SM1. The values for parameters SM1 and SD1 presented above have not been increased in accordance with Supplement 3 of ASCE 7-16.

The table below presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16.

ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCEG Peak Ground Acceleration, PGA	0.871g	Figure 22-9
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCEG Peak Ground Acceleration, PGA_M	0.958g	Section 11.8.3 (Eqn 11.8-1)

Conformance to the criteria in the above tables for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude the construction of the proposed improvements provided the recommendations presented herein are followed and implemented during design and construction.

6.1.2 Up to 2½ feet of existing artificial fill was encountered during the site investigation. The existing fill encountered is believed to be the result of past grading and construction activities at the site. Deeper fill may exist in other areas of the site that were not directly explored. It is our opinion that the existing fill, in its present condition, is not suitable for direct support of proposed foundations. The existing fill and site soils are suitable for re-use as engineered fill, if needed, provided the recommendations in the *Grading* section of this report are followed (see Section 6.4).

6.1.3 Based on these considerations, the proposed improvements may be supported on a conventional foundation system deriving support directly in competent alluvial soils found at or below a depth of 2½ feet below the existing ground surface. Alternatively, the proposed improvements may be supported on a deepened foundation system consisting of drilled cast-in-place concrete friction piles deriving support in competent, undisturbed alluvial soils. Foundations should be deepened as necessary to penetrate through any encountered unsuitable soils and must be observed and approved in writing by a Geocon representative. Recommendations for conventional foundations are provided in sections 6.5 of this report. Recommendations for design and installation of a deepened foundation system are provided in sections 6.6 and 6.7 of this report.

6.1.4 Foundations for small outlying structures, such as handball courts, block walls up to 6 feet high, and planter walls or trash enclosures, which will not be tied to structures, may be supported on conventional foundations bearing on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and proper compaction cannot be performed, foundations may derive support directly in the undisturbed alluvial soils found at and below the depth of 2½ feet and should be deepened as necessary to maintain a minimum of 12-inch embedment into recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved in writing by a Geocon representative. *Miscellaneous Foundation* recommendations are provided in section 6.8 of this report.

6.1.5 Based on our observations onsite and our knowledge of the geologic setting, cobbles should be anticipated during earthwork at the subject site. Boulders are also common in this geologic environment and should be expected in the existing fill or alluvial soils. Due to the granular nature of the soils, moderate to excessive caving is anticipated during excavation activities. The contractor should be aware that powerful drilling equipment and casing may be required during pile installation, and formwork may be required to prevent caving of shallow spread foundation excavations. In addition, the contractor should be prepared to screen cobble and boulders from the soils during earthwork operations.

6.1.6 Please be aware that the hollow-stem auger drilling equipment utilized for this investigation does not allow for the identification of the size of rock or abundance of rock being encountered or the visual observation of caving conditions since the drilling method is a small diameter cased excavation. It is recommended that the contractors bidding on earthwork, excavation and pile installation for this project perform their own excavations and test borings with the intended earthwork and drilling equipment to verify the presence, abundance, and size of buried rock (cobbles and boulders), potential for caving, as well as the suitability of the proposed excavation and drilling equipment for the safe and efficient earthwork operations and installation of the foundation system.

6.1.7 Where new paving is to be placed, it is recommended that all existing fill soils and soft alluvial soils be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing fill in the area of new paving is not required, however, paving constructed over existing uncertified fill or unsuitable soils may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of soil should be scarified and properly compacted. Paving recommendations are provided in the *Pavement Recommendations* section of this report (see Section 6.11).

6.1.8 All trench and foundation excavation bottoms must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding materials, fill, steel, gravel or concrete.

6.1.9 It is anticipated that stable excavations for construction of the proposed improvements can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line, existing slope, and/or structure are required, special excavation measures may be necessary in order to maintain lateral support of offsite improvements. Excavation recommendations are provided in the *Temporary Excavations* section of this report (Section 6.12).

6.1.10 During the field exploration, percolation testing was performed in two borings (B5 and B6) excavated at the site. Based on the results of the percolation testing, a stormwater infiltration system is considered feasible for this project. A detailed discussion of the results and infiltration recommendations are provided in the *Stormwater Infiltration* section of this report (see Section 6.13).

6.1.11 Once the design proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary.

6.1.12 Any changes in the design, location or elevation, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

6.2 Soil and Excavation Characteristics

6.2.1 The in-situ soils can be excavated with moderate effort using conventional excavation equipment. Due to the granular nature of the soils, moderate to excessive caving is anticipated in unshored excavations. The contractor should be aware drilling conditions may be difficult due to the potential for caving, as well as the presence of cobbles, and that powerful drilling equipment is recommended. Casing may be required during pile installation, and formwork may be required to prevent caving of shallow spread foundation excavations. In addition, the contractor should be prepared to screen cobbles and boulders from the soils during earthwork operations.

6.2.2 Please be aware that the hollow-stem auger drilling equipment utilized for this investigation does not allow for the identification of the size of rock or abundance of rock being encountered or the visual observation of caving conditions since the drilling method is a small diameter cased excavation. It is recommended that the contractors bidding on earthwork, excavation and pile installation for this project perform their own excavations and test borings with the intended earthwork and drilling equipment to verify the presence, abundance, and size of buried rock (cobbles and boulders), potential for caving, as well as the suitability of the proposed excavation and drilling equipment for the safe and efficient earthwork operations and installation of the foundation system.

6.2.3 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations to maintain safety and maintain the stability of existing adjacent improvements.

6.2.4 All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures such as sloping or shoring. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 6.12).

6.2.5 Based on the predominantly granular nature of the soils encountered during site exploration, the upper five feet of site soils are considered to be “non-expansive”. The recommendations in this report assume that foundations and slabs will derive support in these materials.

6.3 Summary of Soil Corrosivity Evaluation Report by Project X Corrosion Engineering

6.3.1 Potential of Hydrogen (pH) and resistivity testing, as well as chloride content testing, were performed on representative samples of on-site material to generally evaluate the corrosion potential to surface utilities. The upper site soils are considered "mildly corrosive" with respect to corrosion of buried ferrous metals on site. The results are presented in Appendix C and should be considered for design of underground structures.

6.3.2 Laboratory tests were performed on representative samples of the on-site soil to measure the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate tests are presented in Appendix C and indicate that the on-site soils possess a sulfate exposure class of "S0" to concrete structures as defined by ACI 318-19 Table 19.3.2.1.

6.3.3 Geocon West, Inc. does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, the recommendations in the Soil Corrosivity Evaluation Report prepared for this project by Project X Corrosion Engineering should be implemented. A copy of the report is presented in Appendix C of this report.

6.4 Grading

6.4.1 A preconstruction conference should be held at the site prior to the beginning of excavation operations with the owner, contractor, civil engineer, geotechnical engineer, and building official in attendance. Special soil handling requirements can be discussed at that time.

6.4.2 Earthwork should be observed, and compacted fill tested by representatives of Geocon West, Inc. The existing fill and alluvial soil encountered during exploration are suitable for re-use as an engineered fill, provided any encountered oversize material (greater than 6 inches) and any encountered deleterious debris are removed. **The contractor should be prepared to screen cobble and boulders from the soils during earthwork operations**. Additionally, the site soils have little to no cohesion and are prone to excessive caving. The contractor should be prepared for difficult excavation conditions. The presence of these materials and their impact on construction methods and equipment selection should be considered by both the owner and contractor prior to construction.

6.4.3 Please be aware that the hollow-stem auger drilling equipment utilized for this investigation does not allow for the identification of the size of rocks being encountered or the visual observation of caving conditions since the drilling method is a small diameter cased excavation. It is recommended that the contractor bidding on excavation for this project perform their own test excavations utilizing the intended excavation equipment to verify the presence and size of buried rock (cobble and boulders), potential for caving, as well as the suitability of the proposed equipment to perform for safe and efficient earthwork activities.

6.4.4 Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Once a clean excavation bottom has been established it must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.).

6.4.5 The foundation system for the proposed improvements should derive support on either conventional shallow spread foundations or a deepened foundation system consisting of drilled cast-in-place concrete friction piles, provided foundations derive support directly in competent, undisturbed alluvium. All foundation excavation must be observed and approved in writing by a Geocon representative. Recommendations for the design of a conventional foundation system and a deepened foundations system are provided in Section 6.5 and 6.6, respectively.

6.4.6 All fill and backfill soils should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned to near optimum moisture content, and properly compacted to a minimum of 90 percent of the laboratory maximum dry density in accordance with ASTM D 1557 (latest edition).

6.4.7. Where new paving is to be placed, it is recommended that all existing fill and soft alluvium be excavated and properly compacted for paving support. As a minimum, the upper 12 inches of soil should be scarified, moisture conditioned to near optimum moisture content, and compacted to at least 95 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Paving recommendations are provided in *Pavement Recommendations* section of this report (see Section 6.11).

6.4.8 Although not anticipated for this project, all imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site. Import fill should consist of the characteristics presented in the table on the following page.

SUMMARY OF IMPORT FILL RECOMMENDATIONS

Soil Characteristic	Values
Expansion Potential	"Very Low" (Expansion Index of 20 or less)
Particle Size	Maximum Dimension Less Than 6 Inches
	Free of Debris
Corrosivity	Less Detrimental Than Existing Onsite Soils

6.4.9 Foundations for small outlying structures, such as handball courts, block walls up to 6 feet high, and planter walls or trash enclosures, which will not be tied to structures, may be supported on conventional foundations bearing on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and proper compaction cannot be performed, foundations may derive support directly in the undisturbed alluvial soils found at and below the depth of 2½ feet and should be deepened as necessary to maintain a minimum 12-inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved in writing by a Geocon representative.

6.4.10 Utility trenches should be properly backfilled in accordance with the following requirements. The pipe should be bedded and shaded with clean sands (Sand Equivalent greater than 30) to a depth of at least 1 foot over the pipe, and the bedding material must be inspected and approved in writing by the Geotechnical Engineer (a representative of Geocon). The use of gravel is not acceptable unless used in conjunction with filter fabric to prevent the gravel from having direct contact with soil. The remainder of the trench backfill may be derived from onsite soil or approved import soil, compacted as necessary, until the required compaction is obtained. The use of minimum 2-sack slurry is also acceptable as backfill. Prior to placing any bedding materials or pipes, the excavation bottom must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

6.4.11 All trench and foundation excavation bottoms must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding materials, fill, steel, gravel, or concrete.

6.5 Conventional Foundation Design

6.5.1 A conventional shallow spread foundation system may be utilized for support of the proposed improvements provided foundations derive support in the undisturbed alluvial soils. All foundation excavation bottoms should be compacted in-place in the presence of the Geotechnical Engineer (a representative of Geocon). Foundations may also be deepened as necessary to penetrate through any existing artificial fill and/or unsuitable soils. Due to the presence of abundant gravel and cobbles, foundation excavations may result in irregular surfaces. Where cobbles are removed from the bottom of the foundation excavations, the resulting depression should be backfilled with site soils and compacted as necessary.

6.5.2 Due to the granular nature of soils and potential for caving, the contractor should be prepared to form foundation excavations, if necessary.

6.5.3 Conventional shallow spread foundations for the proposed improvements should consist of continuous strip footings and/or isolated spread footings and should be designed using the parameters in the table on the following page.

SUMMARY OF FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Continuous Foundation Width	12 Inches
Minimum Isolated Foundation Width	24 Inches
Minimum Foundation Depth	18 Inches Below Lowest Adjacent Grade
Minimum Steel Reinforcement	4 No. 4 Bars, 2 Top and 2 Bottom
Allowable Bearing Capacity – Continuous Foundation	2,000 psf
Allowable Bearing Capacity – Isolated Foundation	2,500 psf
Bearing Capacity Increase	250 psf per Foot of Width
	500 psf per Foot of Depth
Maximum Allowable Bearing Capacity	3,000 psf
Estimated Total Settlement	Less than ½ Inch
Estimated Differential Settlement	¼ Inch over 20 Feet

6.5.4 The above foundation dimensions and minimum reinforcement recommendations are based on soil conditions and building code requirements only and are not intended to be used in lieu of those required for structural purposes.

6.5.5 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

6.5.6 No special subgrade presaturation is required prior to placement of concrete. However, the slab and foundation subgrade should be sprinkled as necessary; to maintain a moist condition as would be expected in any concrete placement.

6.5.7 Once the design and foundation loading configurations for the proposed improvements proceeds to a more finalized plan, the estimated settlements presented in this report should be reviewed and revised, if necessary. If the final foundation loading configurations are greater than the assumed loading conditions, the potential for settlement should be reevaluated by this office.

6.6 Deepened Foundation System – Friction Piles

6.6.1 The proposed improvements may be supported on drilled, cast-in-place, concrete friction piles deriving support in the undisturbed, competent alluvial soils found at and below a depth of 2½ feet below the existing ground surface. Piles should be a minimum of 18 inches in diameter and should be embedded a minimum of 10 feet into competent alluvial soils. Piles may be assumed fixed at an embedment depth of 6 feet below the ground surface. Where piles penetrate through unsuitable fill materials at the surface, these materials should not be considered in the contribution of the pile capacity.

6.6.2 The downward capacity may be determined using an allowable frictional resistance of 150 pounds per square foot (psf) in the undisturbed, competent alluvial soils.

6.6.3 Uplift capacity may be assumed to be ½ the allowable downward capacity. The allowable axial compression and uplift capacities may be increased by one-third when considering transient wind or seismic loads.

6.6.4 All drilled pile excavations should be continuously observed by personnel of this firm to verify adequate penetration into the recommended bearing materials. The capacity presented is based on the strength of the soils encountered during this investigation. The compressive and tensile strength of the pile sections should be checked to verify the structural capacity of the piles.

6.6.5 If piles are spaced at least at least 3 diameters on center, no reduction in axial capacity is considered necessary for group effects. If pile spacing is closer than three pile diameters, an evaluation for group effects including appropriate reductions should be incorporated into the pile design based on pile dimension, spacing, and the direction of loading.

6.6.6 Where not protected from erosion or disturbance, the upper 12 inches of soil should be ignored when calculating axial and lateral pile capacity.

6.6.7 Total pile settlement is expected to be less than ½ inch. The majority of settlement is anticipated to occur on initial application of loading during construction.

6.7 Deepened Foundation Installation

6.7.1 Please be aware that the hollow-stem auger drilling equipment utilized for this investigation does not allow for the identification of the size of rock or abundance of rock being encountered or the visual observation of caving conditions since the drilling method is a small diameter cased excavation. It is recommended that the contractors bidding on earthwork, excavation and pile installation for this project perform their own excavations and test borings with the intended earthwork and drilling equipment to verify the presence, abundance, and size of buried rock (cobbles and boulders), potential for caving, as well as the suitability of the proposed excavation and drilling equipment for the safe and efficient earthwork operations and installation of the foundation system.

6.7.2 Powerful drilling equipment may be required to penetrate through cobbles and boulders, and casing may be required if caving is experienced in the drilled excavation. The contractor should have casing available prior to commencement of pile excavation. If casing is used, extreme care should be employed so that the pile is not pulled apart as the casing is withdrawn. At no time should the distance between the surface of the concrete and the bottom of the casing be less than 5 feet. Continuous observation of the drilling and pouring of the piles by the Geotechnical Engineer (a representative of Geocon West, Inc.), is required.

6.7.3 Friction piles do not require the complete removal of all loose earth materials from the bottom of the excavation since the end-bearing capacity is not being considered for design. However, a cleanout of the excavation bottom will be required.

6.7.4 Groundwater was not encountered during site exploration to a maximum depth of 25 feet and is not anticipated to be encountered during construction; however, it is not uncommon for groundwater levels to vary seasonally or for groundwater seepage conditions to develop where none previously existed, especially in impermeable fine-grained soils which are heavily irrigated or after seasonal rainfall. If significant groundwater or seepage is encountered after heavy rains, piles placed below the water level require the use of a tremie to place the concrete into the bottom of the hole. A tremie shall consist of a water-tight tube, with a hopper at the top. The tube shall be equipped with a device that will close the discharge end and prevent water from entering the tube while it is being charged with concrete. The tremie shall be supported so as to permit free movement of the discharge end over the entire top surface of the work and to permit rapid lowering when necessary to retard or stop the flow of concrete. The discharge end shall be closed at the start of the work to prevent water entering the tube and shall be entirely sealed at all times, except when the concrete is being placed. The tremie tube shall be kept full of concrete. The flow shall be continuous until the top of pile elevation is achieved and the resulting concrete seal shall be monolithic and homogeneous. The tip of the tremie tube shall always be kept about 5 feet below the surface of the concrete and definite steps and safeguards should be taken to ensure that the tip of the tremie tube is never raised above the surface of the concrete.

6.7.5 A special concrete mix should be used for concrete to be placed below water. The design shall provide for concrete with a strength of 1,000 psi over the initial job specification. An admixture that reduces the problem of segregation of paste/aggregates and dilution of paste shall be included. The slump shall be commensurate to any research report for the admixture, provided that it shall also be the minimum for a reasonable consistency for placing when water is present. Extreme care should be employed so that the pile is not pulled apart as the casing is withdrawn. At no time should the distance between the surface of the concrete and the bottom of the casing be less than 5 feet. Continuous observation of the drilling and pouring of the piles by a representative of this firm is required.

6.7.6 Closely spaced piles should be drilled and filled alternately, with the concrete permitted to set at least eight hours before drilling an adjacent hole. Excavations should be filled with concrete as soon after drilling and inspection as possible; the holes should not be left open overnight.

6.8 Miscellaneous Foundations

6.8.1 Foundations for small outlying structures, such as handball courts, block walls up to 6 feet high, and planter walls or trash enclosures, which will not be tied to structures, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed, foundations may derive support directly in the undisturbed alluvial soils found at and below the depth of 2½ feet and should be deepened as necessary to maintain a minimum 12-inch embedment into the recommended bearing materials.

6.8.2 If the soils exposed in the excavation bottom are soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative. Miscellaneous foundations may be designed for a bearing value of 1,500 psf, and should be a minimum of 12 inches in width, 18 inches in depth below the lowest adjacent grade and 12 inches into the recommended bearing material. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

6.8.3 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated.

6.9 Lateral Design

6.9.1 Resistance to lateral loading may be provided by friction acting at the base of foundations, slabs and by passive earth pressure. An allowable coefficient of friction of 0.4 may be used with the dead load forces in the undisturbed alluvial soils and properly compacted engineered fill.

8.10.2 Passive earth pressure for the sides of foundations and slabs poured against properly compacted engineered fill and undisturbed alluvial soils may be computed as an equivalent fluid having a density of 280 pcf with a maximum earth pressure of 2,800 pcf. The above pressures may also be used for pile design; however, where not protected from erosion or disturbance, the upper 12 inches of soil should be ignored when calculating lateral pile capacity. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third.

8.10.2 If piles are spaced at least at least 8 diameters on-center when loaded in-line and at least 3 diameters on-center when loaded in parallel, no reduction in lateral capacity is considered necessary for group effects. If so spaced, piles may be considered isolated and the allowable passive pressure may be doubled based on isolated pile conditions. If pile spacing is closer, an evaluation for group effects including appropriate reductions should be incorporated into the pile design based on pile dimension, spacing, and the direction of loading.

6.10 Exterior Slabs-on-Grade

6.10.1 Exterior concrete slabs-on-grade subject to vehicle loading should be designed in accordance with the recommendations in the *Pavement Recommendations* section of this report (Section 6.11).

6.10.2 Exterior concrete slabs-on-grade for walkways or flatwork, not subject to vehicle loading, should be a minimum of 4 inches thick and minimum slab reinforcement should consist of No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Steel reinforcing should be positioned vertically near the slab midpoint. Crack control joints should be spaced at intervals not greater than 10 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. Construction joints should be designed by the project structural engineer.

6.10.3 Slabs-on-grade at the ground surface that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed directly beneath the slab. The vapor retarder and acceptable permeance should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials (ACI 302.2R-06) and should be installed in general conformance with ASTM E 1643 (latest edition) and the manufacturer's recommendations. A minimum thickness of 15 mils extruded polyolefin plastic is recommended; vapor retarders which contain recycled content or woven materials are not recommended. The vapor retarder should have a permeance of less than 0.01 perms demonstrated by testing before and after mandatory conditioning. The vapor retarder should be installed in direct contact with the concrete slab with proper perimeter seal. If the California Green Building Code requirements apply to this project, the vapor retarder should be underlain by 4 inches of clean aggregate. It is important that the vapor retarder be puncture resistant since it will be in direct contact with angular gravel. As an alternative to the clean aggregate suggested in the Green Building Code, it is our opinion that the concrete slab-on-grade may be underlain by a vapor retarder over 4 inches of clean sand (sand equivalent greater than 30), since the sand will serve a capillary break and will minimize the potential for punctures and damage to the vapor barrier.

6.10.4 For seismic design purposes, a coefficient of friction of 0.4 may be utilized between concrete slabs and subgrade soils without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

6.10.5 The moisture content of the slab subgrade should be maintained and sprinkled as necessary to maintain a moist condition as would be expected in any concrete placement.

6.10.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to settlement. However, even with the incorporation of the recommendations presented herein, foundations and slabs-on-grade may exhibit some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

6.11 Pavement Recommendations

6.11.1 Where new paving is to be placed, it is recommended that all existing fill and soft or unsuitable alluvial materials be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing artificial fill and soft alluvium in the area of new paving is not required; however, paving constructed over existing unsuitable material may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to near optimum moisture content, and properly compacted to at least 95 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

6.11.2 The following typical pavement sections are based on an assumed R-value of 35. Pavement thicknesses presented in Table 1 were determined following procedures outlined in the *California Highway Design Manual* (Caltrans) for pavements with a 20-year design life. If pavement sections for Traffic Indices other than those listed below are required, Geocon should be contacted to provide additional recommendations.

NEW FLEXIBLE PAVEMENT SECTION

Locations	Traffic Index (TI)	Minimum Asphalt Concrete Thickness (inches)	Minimum Aggregate Subbase Thickness (inches)	Full Asphalt Section Thickness – No Aggregate Subbase (inches)
Playground	3.0	3	4	**3**
Automobile Parking and Drive Aisles	4.0	3	4	**4**
Trash Truck & Fire Lanes	7.0	4	9	**9**

6.11.3 Asphalt concrete should conform to Section 203-6 of the Greenbook. Aggregate base materials should be approved by LAUSD and conform to LAUSD standard specifications. The use of Crushed Miscellaneous Base (CMB) is not acceptable.

6.11.4 Unless specifically designed and evaluated by the project structural engineer, where exterior concrete paving will be utilized for support of vehicles, it is recommended that the concrete be a minimum of 6 inches of concrete reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Concrete paving supporting vehicular traffic should be underlain by a minimum of 4 inches of aggregate base and a properly compacted subgrade. The subgrade and base material should be compacted to 95 percent relative compaction, respectively, as determined by ASTM Test Method D 1557 (latest edition).

6.11.5 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence, and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

6.12 Temporary Excavations

6.12.1 Excavations of up to 5 feet in height may be required during grading and construction of proposed foundations. The excavations are expected to expose artificial fill and alluvial soils, which are subject to excessive caving where granular soils are encountered. Excavations up to 5 vertical feet may be attempted where loose fill or sands are not present and where not surcharged by equipment, traffic, or foundations. Due to the granular nature of soils and potential for caving, the contractor should also be prepared to form shallow foundation excavations at the excavation bottom.

6.12.2 Vertical excavations greater than 5 feet or where surcharged by existing structures will require sloping or shoring measures in order to provide a stable excavation. Where sufficient space is available, temporary unsurcharged embankments could be sloped back at a uniform 1:1 (H:V) slope gradient or flatter up to maximum height of 6 feet. A uniform slope does not have a vertical portion.

6.12.3 Continuous vertical excavation adjacent to and which extend below the surcharge area of an existing foundation could remove vertical and lateral support from the existing footings and are not permitted. Temporary shoring will be required where proposed excavations will be deeper than an existing adjacent foundation. Recommendations for temporary shoring can be provided under a separate cover, as the project progresses.

6.12.4 Where temporary construction slopes are utilized, the top of the slope should be barricaded to prevent vehicles and storage loads at the top of the slope within a horizontal distance equal to the height of the slope. If the temporary construction slopes are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. The soils exposed in the cut slopes should be inspected during excavation by our personnel and the contractor's competent person so that modifications of the slopes can be made if variations in the soil conditions occur. All excavations should be stabilized within 30 days of initial excavation.

6.13 Stormwater Infiltration

6.13.1 During the site explorations on March 27, 2024, borings B5 and B6 were utilized to determine the feasibility of stormwater infiltration at the site. The borings were excavated and backfilled to the depths listed in the table below. Percolation testing was conducted at the depths listed in the table below. Slotted casing was placed in the borings, and the annular space between the casing and excavation were filled with filter pack. The borings were then filled with water to pre-saturate the soils. The casings were refilled with water and percolation test readings were performed after repeated flooding of the cased excavation.

6.13.2 Based on the test results, the field-measured percolation rate and the design infiltration rate are provided in the following table. The Reduction Factor (Rf), to convert the field-measured percolation rate to an infiltration rate, is also shown in the table below. This value has been calculated in accordance with the Small Diameter Boring Infiltration Test Procedure in the County of Los Angeles Department of Public Works GMED *Guidelines for Design, Investigation, and Reporting Low Impact Development Stormwater Infiltration* (June 2021). Calculations of the percolation rate, reduction factor, and infiltration rate are provided on Figures 3 and 4.

Boring	Infiltration Depth (ft)	Field Measured Infiltration Rate (in/hour)	Reduction Factor (Rf)	Design Infiltration Rate (in / hour)
B5	2 – 5	7.59	3	2.53
B6	2 – 5	7.35	3	2.45

6.13.3 Based on the test method utilized (Small Diameter Boring), the reduction factor RF_t may be taken as 1.0 in the infiltration system design. Based on the number of tests performed and consistency of the soils throughout the site, it is suggested that the reduction factor RF_v be taken as 1.0. In addition, provided proper maintenance is performed to minimize long-term siltation and plugging, the reduction factor RF_s may be taken as 1.0. Additional correction factors may be required and should be applied by the engineer in responsible charge of the design of the stormwater infiltration system and based on applicable guidelines.

6.13.4 The results of the percolation testing indicate that the infiltration rate of the alluvial soils at the depths and locations for borings B5 and B6 are conducive to infiltration, and it is our opinion that these soils are suitable for infiltration of stormwater.

6.13.5 It is our further opinion that infiltration of stormwater and will not induce excessive hydro-consolidation (see Figures B7 through B9), will not create a perched groundwater condition, will not affect soil structure interaction of existing or proposed foundations due to expansive soils, will not saturate soils supported by existing or proposed retaining walls, and will not increase the potential for liquefaction. Resulting settlements are anticipated to be less than ¼ inch, if any.

6.13.6 The infiltration system must be located such that the closest distance between an adjacent foundation is at least 15 feet in all directions from the zone of saturation. The zone of saturation may be assumed to project downward from the discharge of the infiltration facility at a gradient of 1:1. Additional property line or foundation setbacks may be required by the governing jurisdiction and should be incorporated into the stormwater infiltration system design as necessary.

6.13.7 Where the 15-foot horizontal setback cannot be maintained between the infiltration system and an adjacent footing, and the infiltration system penetrates below the foundation influence line, the proposed stormwater infiltration system must be designed to resist the surcharge from the adjacent foundation. The foundation surcharge line may be assumed to project down away from the bottom of the foundation at a 1:1 gradient. The stormwater infiltration system must still be sufficiently deep to maintain the 15-foot vertical offset between the bottom of the footing and the zone of saturation.

6.13.8 Subsequent to the placement of the infiltration system, it is acceptable to backfill the resulting void space between the excavation sidewalls and the infiltration system with minimum two-sack slurry provided the slurry is not placed in the infiltration zone. It is recommended that pea gravel be utilized adjacent to the infiltration zone so communication of water to the soil is not hindered.

6.13.9 Due to the preliminary nature of the project at this time, the type of stormwater infiltration system and location of the stormwater infiltration systems has not yet been determined. Once the type of infiltration system has been determined with the exact location and infiltration depths, the design drawings should be reviewed and approved by the Geotechnical Engineer. The installation of the stormwater infiltration system should be observed and approved by the Geotechnical Engineer (a representative of Geocon).

6.14 Surface Drainage

6.14.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the original designed engineering properties. Proper drainage should be maintained at all times.

6.14.2 All site drainage should be collected and controlled in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2022 CBC 1804.4 or other applicable standards. In addition, drainage should not be allowed to flow uncontrolled over any descending slope. Discharge from downspouts, roof drains and scuppers are not recommended onto unprotected soils within 5 feet of the building perimeter. Planters which are located adjacent to foundations should be sealed to prevent moisture intrusion into the soils providing foundation support. Landscape irrigation is not recommended within 5 feet of the building perimeter footings except when enclosed in protected planters.

6.14.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures.

6.14.4 Landscaping planters immediately adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Either a subdrain, which collects excess irrigation water and transmits it to drainage structures, or impervious above-grade planter boxes should be used. In addition, where landscaping is planned adjacent to the pavement, it is recommended that consideration be given to providing a cutoff wall along the edge of the pavement that extends at least 12 inches below the base material.

6.15 Plan Review

6.15.1 Grading, foundation, and shoring plans (if required) should be reviewed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to finalization to verify that the plans have been prepared in substantial conformance with the recommendations of this report and to provide additional analyses or recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

2. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

3. This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

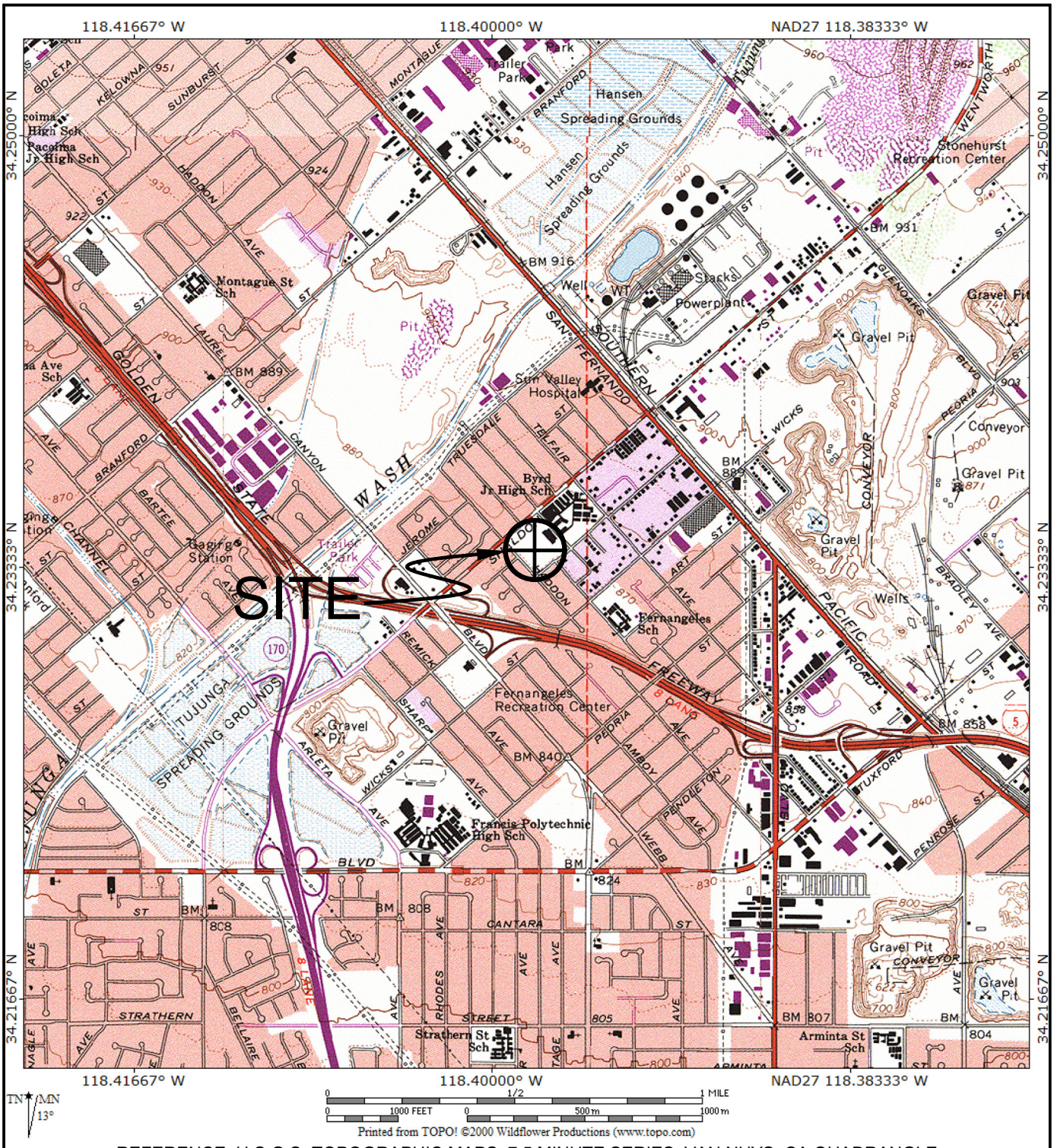
4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

LIST OF REFERENCES

1. California Division of Mines and Geology, 1998, *State of California Seismic Hazard Zones, Van Nuys Quadrangle*, Official Map, Released: February 1, 1998.

2. California Division of Mines and Geology, 1997, *Seismic Hazard Evaluation of the Van Nuys 7.5-Minute Quadrangle*, Los Angeles County, California, Seismic Hazard Zone Report 008, Released 1997, Revised 2001.

3. California Geological Survey, 2012, *Geologic Compilation of Quaternary Surficial Deposits in Southern California, Los Angeles 30' X 60' Quadrangle*, A Project for the Department of Water Resources by the California Geological Survey, Compiled from existing sources by Trinda L. Bedrossian, CEG and Peter D. Roffers, CGS Special Report 217, Plate 9, Scale 1:100,000.



REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, VAN NUYS, CA QUADRANGLE

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VICINITY MAP

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

APRIL 2024 | PROJECT NO. A8326-06-111 | FIG. 1

NOTE: IMAGE FROM GOOGLE EARTH

NOTE: IMAGE FROM GOOGLE EARTH. NO SCALE

LEGEND

NORTH

0 125' 250'

B6 Location and Number of Boring

Approximate Property Boundary

Approximate Limits of Proposed Improvements

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SITE PLAN

VALLEY OAKS CENTER FOR ENRICHED STRUDIES
3351 FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

MAY 2024 | PROJECT NO.A8326-06-111 | FIG. 2

BORING PERCOLATION TEST FIELD LOG

Date:	Thursday, March 28, 2024	**Boring/Test Number:**	B5
Project Number:	A8326-06-111	**Diameter of Boring:**	6 inches
Project Location:	VOCES	**Diameter of Casing:**	2 inches
Earth Description:	SP-SM and SP	**Depth of Boring:**	5 feet
Tested By:	RP	**Depth to Invert of BMP:**	2 feet
Liquid Description:	Clear Clean Tap Water	**Depth to Water Table:**	n/a feet
Measurement Method:	Sounder	**Depth to Initial Water Depth (d_1):**	24 inches
Start Time for Pre-Soak:	8:00 AM	**Water Remaining in Boring (Y/N):**	No
Start Time for Standard:	9:00 AM	**Standard Time Interval Between Readings:**	10 Min

Reading Number	Time Start (hh:mm)	Time End (hh:mm)	Elapsed Time Δtime (min)	Water Drop During Standard Time Interval, Δd (in)	Soil Description Notes Comments
1	9:10 AM	9:20 AM	10	32.8	
2	9:22 AM	9:32 AM	10	32.8	
3	9:35 AM	9:45 AM	10	32.6	
4	9:47 AM	9:57 AM	10	32.4	
5	10:00 AM	10:10 AM	10	32.0	
6	10:13 AM	10:23 AM	10	32.2	
7	10:25 AM	10:35 AM	10	31.9	
8	10:39 AM	10:49 AM	10	31.9	
9	10:50 AM	11:00 AM	10	31.8	
10	11:02 AM	11:12 AM	10	31.7	
11	11:15 AM	11:25 AM	10	31.8	
12	11:26 AM	11:36 AM	10	31.4	

MEASURED PERCOLATION RATE & DESIGN INFILTRATION RATE CALCULATIONS*

* Calculations Below Based on Stabilized Readings Only

Boring Radius, r: 3 inches

Test Section Height, h: 36.0 inches

$$Test\ Section\ Surface\ Area, A = 2\pi rh + \pi r^2$$

A = **707** in^2

$$Discharged\ Water\ Volume, V = \pi r^2 \Delta d$$

$$Percolation\ Rate = \left(\frac{V/A}{\Delta T}\right)$$

Reading 6	V =	**896**	in^3	Percolation Rate =	**7.60**	inches/hour
Reading 7	V =	**899**	in^3	Percolation Rate =	**7.63**	inches/hour
Reading 8	V =	**889**	in^3	Percolation Rate =	**7.55**	inches/hour

Measured Percolation Rate = **7.59** inches/hour

Reduction Factors

Boring Percolation Test, RF_t = 1

Site Variability, RF_v = 1

Long Term Siltation, RF_s = 1

$$Total\ Reduction\ Factor, RF = RF_t + RF_v + RF_s$$

Total Reduction Factor = 3

Design Infiltration Rate

$$Design\ Infiltration\ Rate = Measured\ Percolation\ Rate\ /RF$$

Design Infiltration Rate = **2.53** inches/hour

FIGURE 3

BORING PERCOLATION TEST FIELD LOG

Date:	Thursday, March 28, 2024	**Boring/Test Number:**	B6
Project Number:	A8326-06-111	**Diameter of Boring:**	6 inches
Project Location:	VOCES	**Diameter of Casing:**	2 inches
Earth Description:	SP-SM and SP	**Depth of Boring:**	5 feet
Tested By:	RP	**Depth to Invert of BMP:**	2 feet
Liquid Description:	Clear Clean Tap Water	**Depth to Water Table:**	n/a feet
Measurement Method:	Sounder	**Depth to Initial Water Depth (d_1):**	24 inches
Start Time for Pre-Soak:	8:30 AM	**Water Remaining in Boring (Y/N):**	No
Start Time for Standard:	9:30 AM	**Standard Time Interval Between Readings:**	10 Min

Reading Number	Time Start (hh:mm)	Time End (hh:mm)	Elapsed Time Δtime (min)	Water Drop During Standard Time Interval, Δd (in)	Soil Description Notes Comments
1	11:45 AM	11:55 AM	10	32.4	
2	11:57 AM	12:07 PM	10	32.3	
3	12:09 PM	12:19 PM	10	32.2	
4	12:21 PM	12:31 PM	10	32.3	
5	12:32 PM	12:42 PM	10	31.7	
6	12:45 PM	12:55 PM	10	31.3	
7	12:57 PM	1:07 PM	10	31.1	
8	1:09 PM	1:19 PM	10	30.8	
9	1:20 PM	1:30 PM	10	30.7	
10	1:32 PM	1:42 PM	10	30.8	
11	1:45 PM	1:55 PM	10	30.6	
12	1:57 PM	2:07 PM	10	30.5	

MEASURED PERCOLATION RATE & DESIGN INFILTRATION RATE CALCULATIONS*

* Calculations Below Based on Stabilized Readings Only

Boring Radius, r: 3 inches

Test Section Height, h: 36.0 inches

$$Test\ Section\ Surface\ Area, A = 2\pi rh + \pi r^2$$

A = **707** in^2

$$Discharged\ Water\ Volume, V = \pi r^2 \Delta d$$

$$Percolation\ Rate = \left(\frac{V/A}{\Delta T}\right)$$

Reading 6	V =	**872**	in^3	Percolation Rate =	**7.40**	inches/hour
Reading 7	V =	**865**	in^3	Percolation Rate =	**7.34**	inches/hour
Reading 8	V =	**862**	in^3	Percolation Rate =	**7.32**	inches/hour

Measured Percolation Rate = **7.35** inches/hour

Reduction Factors

Boring Percolation Test, RF_t = 1

Site Variability, RF_v = 1

Long Term Siltation, RF_s = 1

$$Total\ Reduction\ Factor, RF = RF_t + RF_v + RF_s$$

Total Reduction Factor = 3

Design Infiltration Rate

$$Design\ Infiltration\ Rate = Measured\ Percolation\ Rate\ /RF$$

Design Infiltration Rate = **2.45** inches/hour

FIGURE 4

APPENDIX A

APPENDIX A
FIELD INVESTIGATION

The site was explored on March 27, 2024, by excavating four 8-inch-diameter borings using a truck-mounted hollow-stem auger drilling machine to depths of 25 feet beneath the ground surface. Additionally, two 6-inch diameter borings were excavated using hand auger equipment to depths of 5 feet for percolation testing. Representative and relatively undisturbed samples were obtained by driving a 3-inch, O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a 140-pound auto-hammer falling 30 inches. The California Modified Sampler was equipped with 1-inch by $2\frac{3}{8}$-inch diameter brass sampler rings to facilitate soil removal and testing. Bulk samples were also obtained.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). The logs of the borings are presented on Figures A1 through A6. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the logs were revised based on subsequent laboratory testing. The approximate locations of the borings are shown on Figure 2.

PROJECT NO. A8326-06-111

BORING 1

ELEV. (MSL.) -- DATE COMPLETED **03/27/2024**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RA**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**AC: 2" BASE: 4"** **ARTIFICIAL FILL** Silty Sand, slightly moist, brown, fine-grained.			
2	B1@2'			SM	**ALLUVIUM** Silty Sand, medium dense, slightly moist, brown, fine-grained, micaceous.	24		
4	B1@3'							
	B1@4'							
6	B1@6'			SP	Sand, poorly graded, medium dense, dry, light brown, fine-grained, trace medium-grained.	23		
8	B1@8.5'				- fine- to coarse-grained, trace fine gravel	50 (3")		
10					- dense, brown, fine- to medium-grained, trace coarse-grained, fine gravel, and silt			
12	B1@12'			SW	Sand, well-graded, very dense, dry, light brown, fine- to coarse-grained, trace fine to coarse gravel.	50 (2")		
14								
16	B1@15'			SP	Sand, poorly graded, very dense, dry, yellowish brown, fine-grained, trace medium-grained and fine gravel.	50 (5")		
18								
20	B1@19.5'				- trace medium- to coarse-grained and fine to coarse gravel	50 (4")		
22								
24	B1@24'				- gravel fragment (to 2")	50 (4")		
					Total depth of boring: 24.5 feet Fill to 2 feet. No groundwater encountered. Backfilled with soil cuttings and tamped. AC patched. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

A8326-06-111 BORING LOGS.GPJ

Figure A1,
Log of Boring 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8326-06-111

BORING 2

ELEV. (MSL.) -- DATE COMPLETED **03/27/2024**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RA**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, moist, dark brown, fine-grained.			
2	B2@2'				**ALLUVIUM** Sand, poorly graded, medium dense, dry to slightly moist, light brown, fine-grained.			
	B2@3'					19		
4	B2@4'							
6	B2@6'				- fine- to coarse-grained, trace fine gravel	44		
8	B2@8'				- fine-grained, trace medium- to coarse-grained and fine to coarse gravel	50 (6")		
10								
	B2@11'				- fine- to coarse-grained, trace fine to coarse gravel	50 (5")		
12				SP				
14								
	B2@14.5'				- dense, brown, fine-grained, trace medium- to coarse-grained, fine gravel and silt, micaceous	50 (6")		
16								
18								
20	B2@19.5'				- light brown, fine to coarse gravel, decrease in silt	50 (4")		
22								
24								
	B2@24.5'				- light yellowish brown, fine- to medium-grained, trace coarse-grained, decrease in gravel	50 (2")		

Total depth of boring: 25 feet
Fill to 2 feet.
No groundwater encountered.
Backfilled with soil cuttings and tamped.

NOTE: The stratification lines presented herein represent the approximate

A8326-06-111 BORING LOGS.GPJ

Figure A2,
Log of Boring 2, Page 1 of 2

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8326-06-111

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 2** ELEV. (MSL.) -- DATE COMPLETED **03/27/2024** EQUIPMENT **HOLLOW STEM AUGER** BY: **RA**	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
					boundary between earth types; the transitions may be gradual.			

A8326-06-111 BORING LOGS.GPJ

Figure A2,
Log of Boring 2, Page 2 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. A8326-06-111

BORING 3

ELEV. (MSL.) -- DATE COMPLETED **03/27/2024**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RA**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, moist, dark brown, fine-grained.			
2	B3@2'							
				SP-SM	**ALLUVIUM** Sand with Silt, moist, brown, fine-grained.			
	B3@3'					36		
4					Sand with Gravel, poorly graded, medium dense, slightly moist, dark yellowish brown, fine-grained, trace medium-grained and silt.			
6	B3@6'				- dense, trace coarse-grained and fine to coarse gravel	72		
8	B3@8'				- lens of coarse gravel and cobbles	50 (5")		
10				SP				
12	B3@12'					52		
14	B3@14'				- no recovery, cobble in shoe	50 (5")		
16								
18								
					- Sand with Silt lense			
20	B3@19.5'				Sand, poorly graded, dense, dry to slightly moist, light brown, fine- to coarse-grained, trace fine to coarse gravel.	50 (5")		
22				SP				
24	B3@25'				- light grayish brown	50 (6")		
					Total depth of boring: 24.5 feet Fill to 2.5 feet. No groundwater encountered. Backfilled with soil cuttings and tamped. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

A8326-06-111 BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 1 of 1

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. A8326-06-111

BORING 4

ELEV. (MSL.) -- DATE COMPLETED **03/27/2024**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RA**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Sand with Silt, slightly moist, reddish brown, fine-grained.			
2					Silty Sand, slightly moist, brown, fine-grained, micaceous.			
	B4@2'				**ALLUVIUM** Sand with Gravel, poorly graded, medium dense, dry, yellowish brown, fine-grained, trace coarse-grained and fine gravel.			
	B4@3'					49		
4	B4@4'							
6	B4@6'				- fine- to coarse-grained	54		
					- fine-grained, trace medium-grained and fine gravel			
8	B4@8.5'			SP	- cobble fragment, trace fine to coarse gravel	50 (5")		
10								
12	B4@11.5'				- fine-grained, trace medium- to coarse-grained, trace fine to coarse gravel and silt	50 (4")		
14	B4@14.5'				- fine-grained, trace coarse-grained and fine gravel	50 (6")		
16								
18								
					- Sand with Silt lense			
20	B4@19.5'				Sand with Gravel, well-graded, medium dense, slightly moist, light grayish brown, fine- to coarse-grained, fine to coarse gravel.	50 (4")		
22				SW				
24	B4@24'			SP-SM	Sand with Silt, poorly graded, medium dense to dense, slightly moist, brown, fine-grained, trace fine gravel, cobble/gravel fragment.	50 (5")		

Total depth of boring: 24.5 feet
Fill to 2 feet.
No groundwater encountered.
Backfilled with soil cuttings and tamped.

NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

A8326-06-111 BORING LOGS.GPJ

Figure A4,
Log of Boring 4, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. A8326-06-111

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 5** ELEV. (MSL.) -- DATE COMPLETED **03/27/2024** EQUIPMENT **HAND AUGER** BY: **RA**	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, moist, dark brown to brown, fine-grained.			
2				SP-SM	**ALLUVIUM** Sand with Silt, moist, brown, fine-grained, micaceous.			
4				SP	Sand, poorly graded, light grayish brown, fine-grained, trace medium- to coarse-grained and fine gravel.			
					Total depth of boring: 5 feet Fill to 2 feet. No groundwater encountered. Percolation testing performed. Backfilled with soil cuttings and tamped. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

A8326-06-111 BORING LOGS.GPJ

Figure A5,
Log of Boring 5, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. A8326-06-111

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 6** ELEV. (MSL.) -- DATE COMPLETED **03/27/2024** EQUIPMENT **HAND AUGER** BY: **RA**	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, moist, brown, fine-grained, micaceous.			
2				SP-SM	**ALLUVIUM** Sand with Silt, moist, olive brown to brown, fine-grained, micaceous.			
4				SP	Sand, poorly graded, dry to slightly moist, light grayish brown, fine-grained, trace coarse-grained and fine gravel.			
					Total depth of boring: 5 feet Fill to 2 feet. No groundwater encountered. Percolation testing performed. Backfilled with soil cuttings and tamped. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

A8326-06-111 BORING LOGS.GPJ

Figure A6,
Log of Boring 6, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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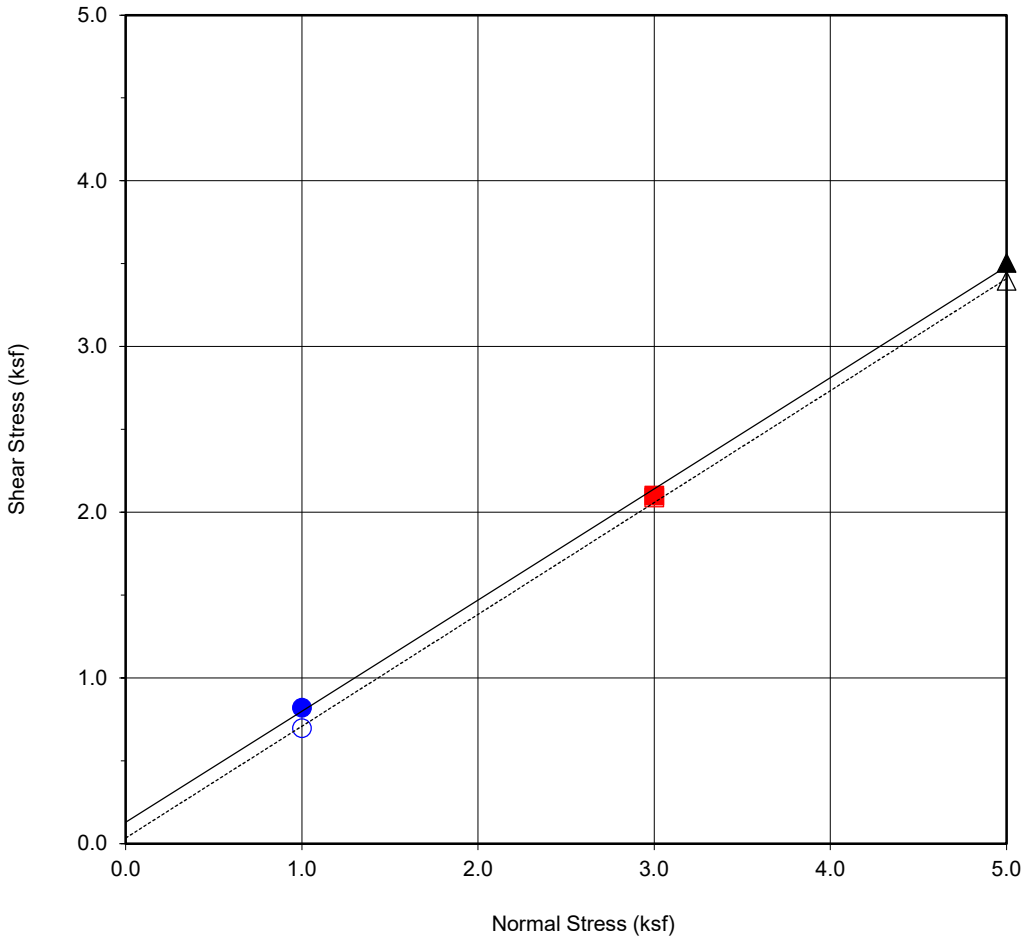
APPENDIX B

APPENDIX B
LABORATORY TESTING

We performed laboratory tests in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We tested selected soil samples for in-place dry density/moisture content, corrosivity, consolidation, and direct shear strength. The in-place dry density and moisture content of the samples tested are presented on the boring logs, Appendix A.



Boring No.	**B1**
Sample No.	**B1@0-5**
Depth (ft)	**0-5**
Sample Type:	Ring

Soil Identification:		
Silty Sand (SM)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	128	34
Ultimate	35	34

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.82	■ 2.10	▲ 3.50
Shear Stress @ End of Test (ksf)	○ 0.70	□ 2.09	△ 3.40
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	9.3	9.3	9.3
Initial Dry Density (pcf)	112.8	112.8	112.8
Initial Degree of Saturation (%)	51.0	50.8	50.6
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	15.5	15.2	15.3

GEOCON

DIRECT SHEAR TEST RESULTS

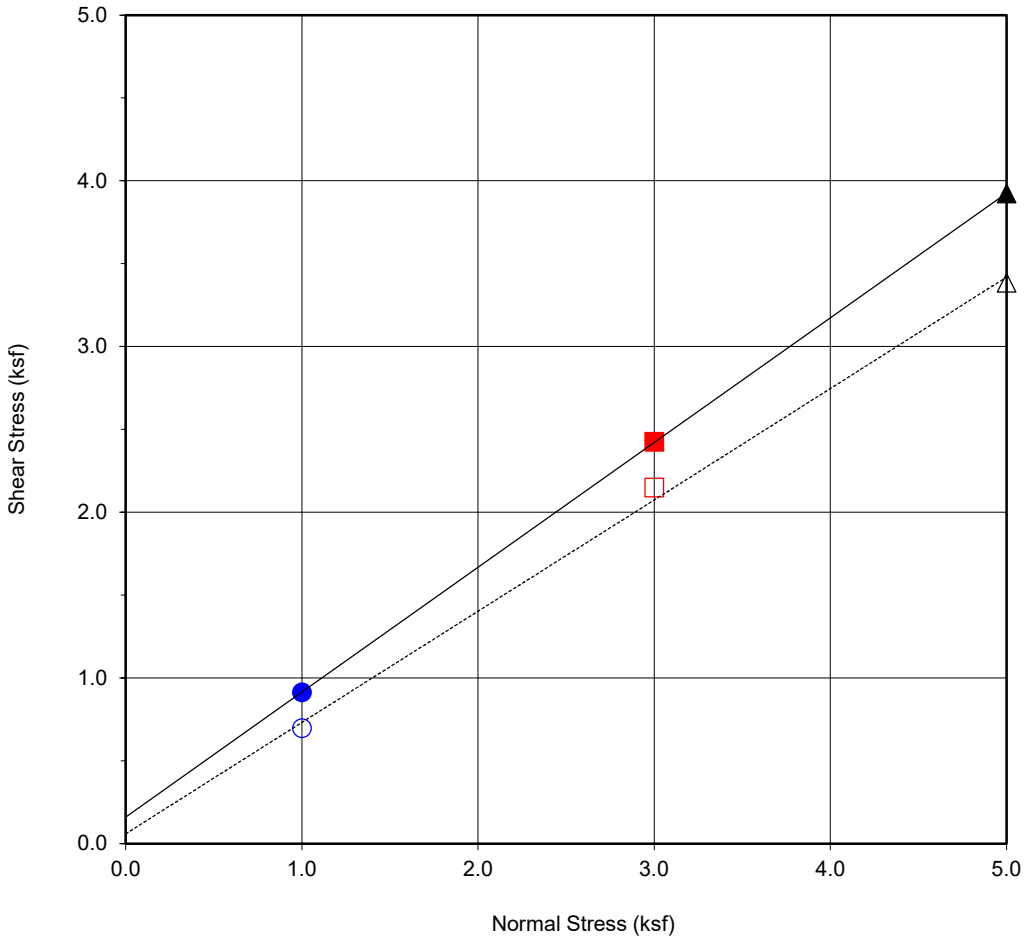
Consolidated Drained ASTM D-3080

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B1



Boring No.	**B1**
Sample No.	**B1@3**
Depth (ft)	**3**
Sample Type:	Ring

Soil Identification:		
Silty Sand (SM)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	161	37
Ultimate	60	34

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.91	■ 2.42	▲ 3.92
Shear Stress @ End of Test (ksf)	○ 0.70	□ 2.15	△ 3.38
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	13.6	12.7	13.1
Initial Dry Density (pcf)	108.1	107.6	111.0
Initial Degree of Saturation (%)	65.5	60.6	68.4
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	17.5	16.8	16.2

GEOCON

DIRECT SHEAR TEST RESULTS

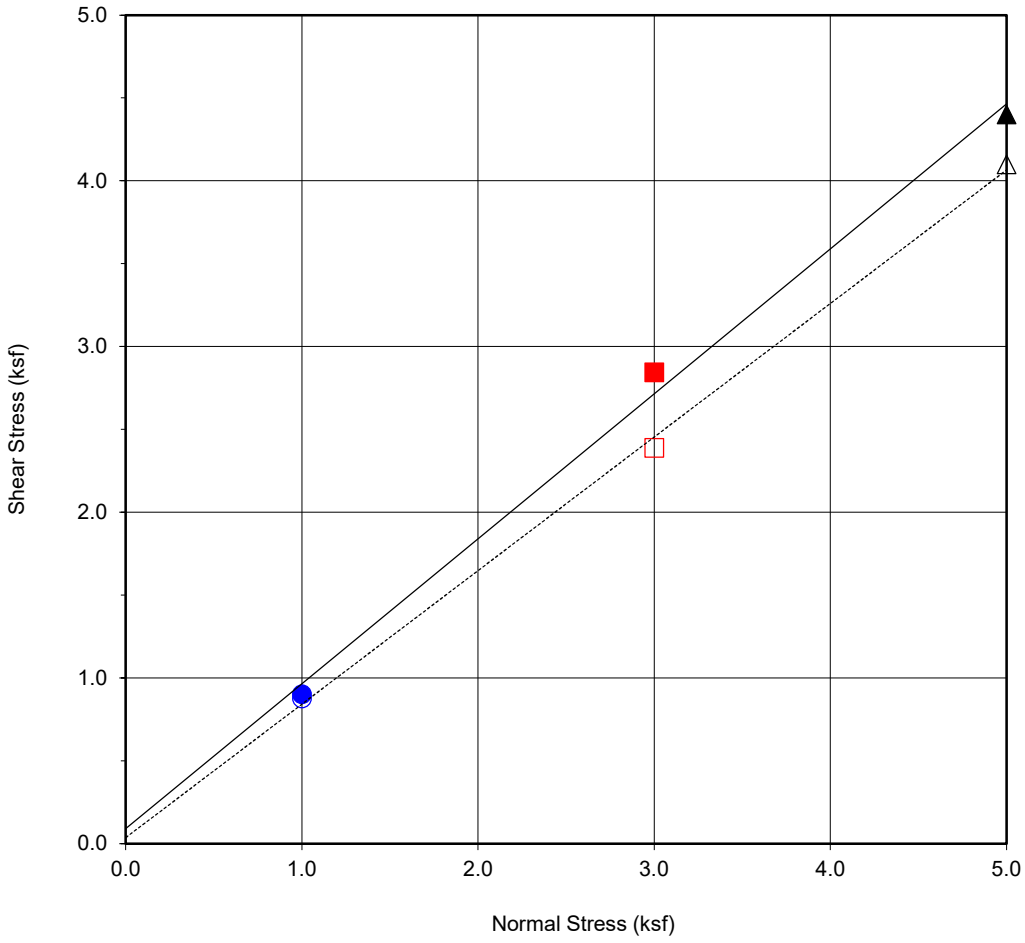
Consolidated Drained ASTM D-3080

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B2



Boring No.	**B2**
Sample No.	**B2@6**
Depth (ft)	**6**
Sample Type:	Ring

Soil Identification:

Poorly Graded Sand (SP)

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	90	41
Ultimate	37	39

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.90	■ 2.84	▲ 4.40
Shear Stress @ End of Test (ksf)	○ 0.88	□ 2.39	△ 4.10
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	5.7	6.9	8.9
Initial Dry Density (pcf)	109.1	105.3	103.5
Initial Degree of Saturation (%)	28.4	31.1	38.2
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	15.9	17.3	17.8

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DIRECT SHEAR TEST RESULTS

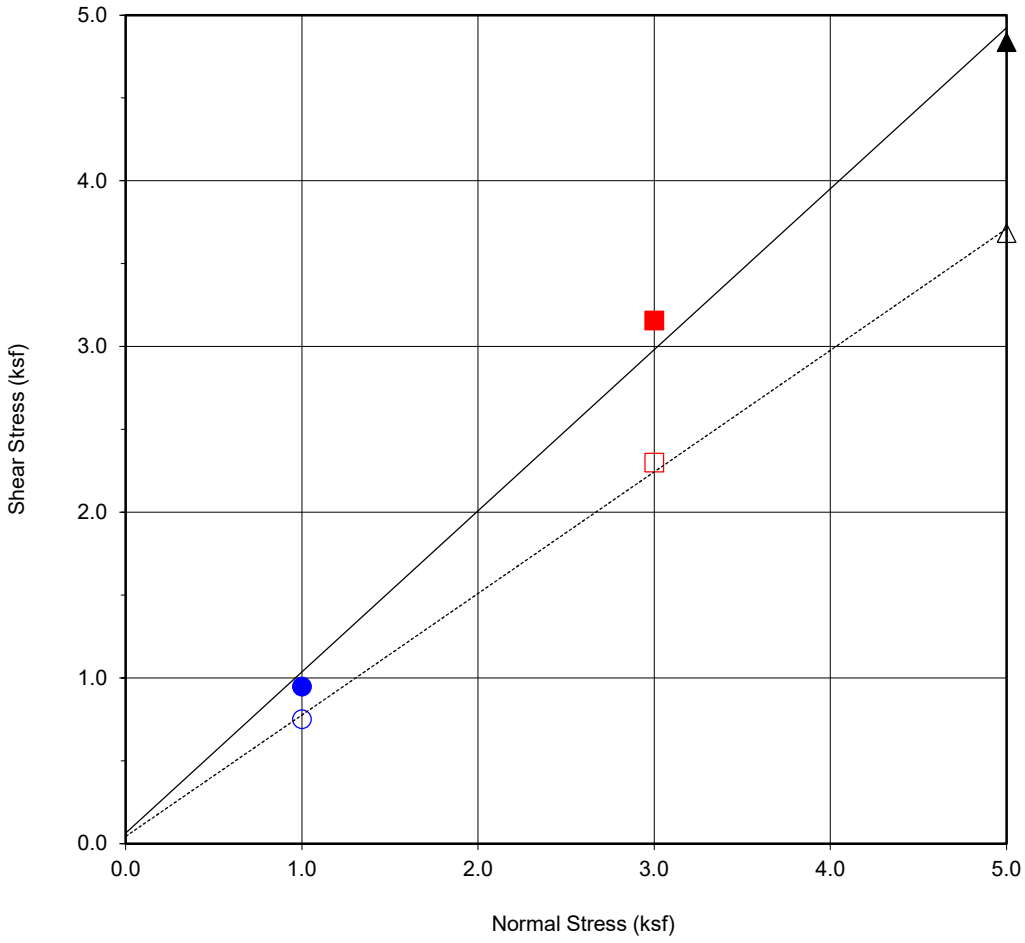
Consolidated Drained ASTM D-3080

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B3



Boring No.	**B4**
Sample No.	**B4@6'**
Depth (ft)	**6**
Sample Type:	Ring

Soil Identification:

Poorly Graded Sand w/ Gravel (SP)

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	64	44
Ultimate	44	36

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.95	■ 3.16	▲ 4.84
Shear Stress @ End of Test (ksf)	○ 0.75	□ 2.30	△ 3.68
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	4.4	6.2	4.6
Initial Dry Density (pcf)	99.8	97.8	94.9
Initial Degree of Saturation (%)	17.1	23.0	15.9
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	17.5	21.3	22.0

GEOCON

DIRECT SHEAR TEST RESULTS

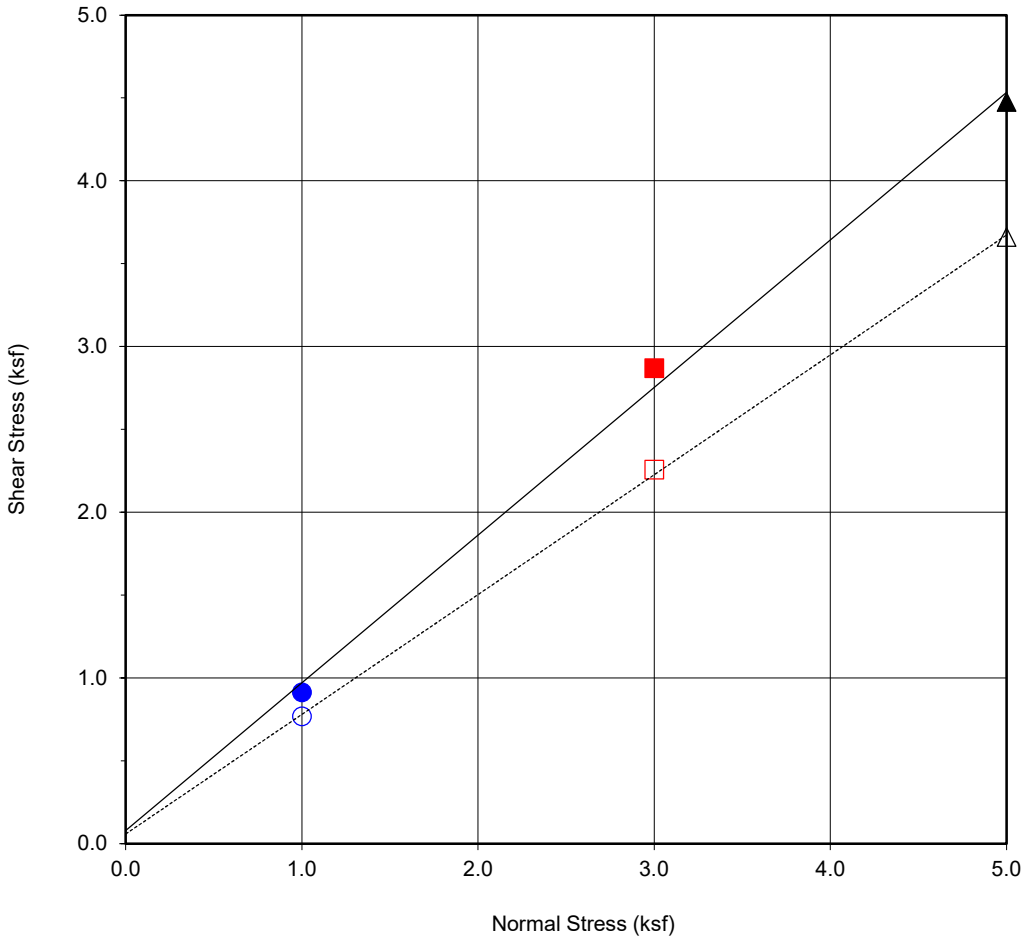
Consolidated Drained ASTM D-3080

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B4



Boring No.	**B2**
Sample No.	**B2@14.5**
Depth (ft)	**14.5**
Sample Type:	Ring

Soil Identification:

Poorly Graded Sand (SP)

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	79	42
Ultimate	59	36

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.91	■ 2.87	▲ 4.48
Shear Stress @ End of Test (ksf)	○ 0.77	□ 2.26	△ 3.66
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	9.1	7.8	8.0
Initial Dry Density (pcf)	107.3	110.9	111.7
Initial Degree of Saturation (%)	43.1	40.4	42.4
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	17.3	15.4	16.0

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DIRECT SHEAR TEST RESULTS

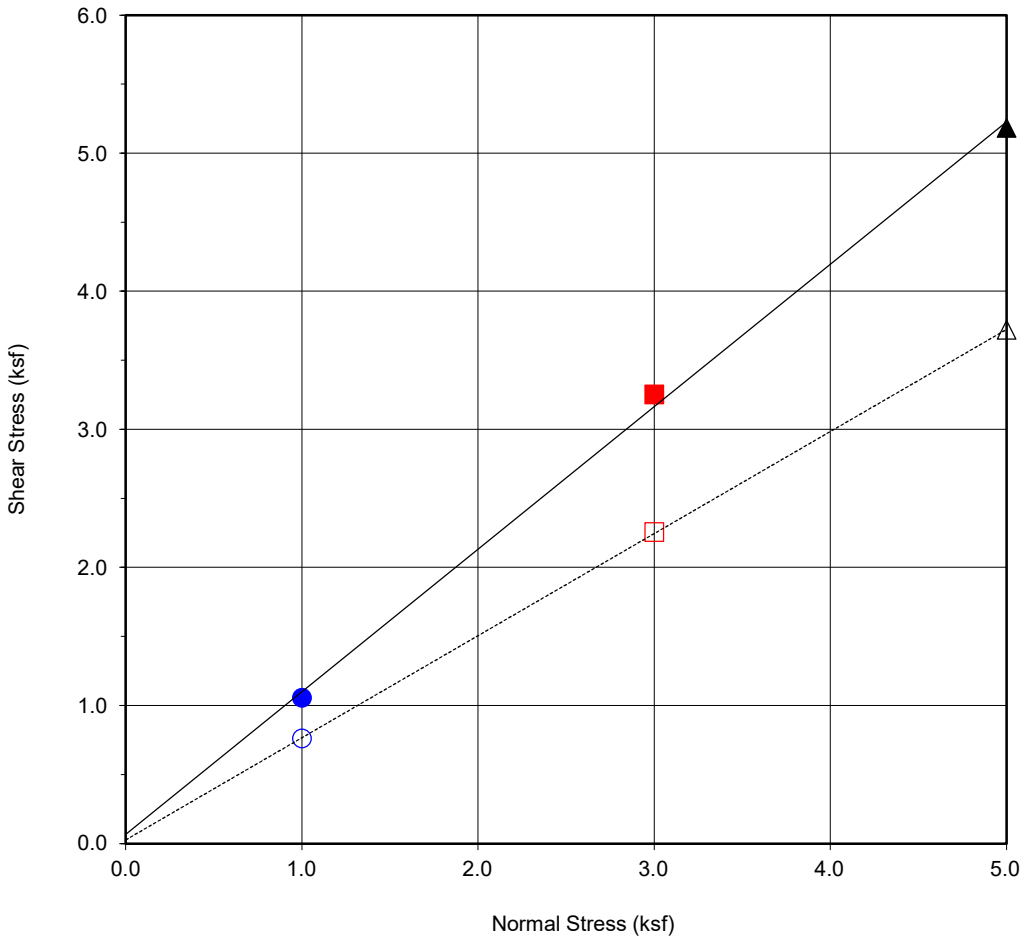
Consolidated Drained ASTM D-3080

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B5



Boring No.	**B2**
Sample No.	**B2@24.5**
Depth (ft)	**24.5**
Sample Type:	Ring

Soil Identification:

Poorly Graded Sand (SP)

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	68	46
Ultimate	27	36

Normal Stress (kip/ft²)	1	3	5
Peak Shear Stress (kip/ft²)	● 1.06	■ 3.25	▲ 5.18
Shear Stress @ End of Test (ksf)	○ 0.76	□ 2.26	△ 3.72
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	5.0	4.6	4.3
Initial Dry Density (pcf)	108.5	106.7	107.9
Initial Degree of Saturation (%)	24.5	21.5	20.5
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	17.2	17.5	17.5

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DIRECT SHEAR TEST RESULTS

Consolidated Drained ASTM D-3080

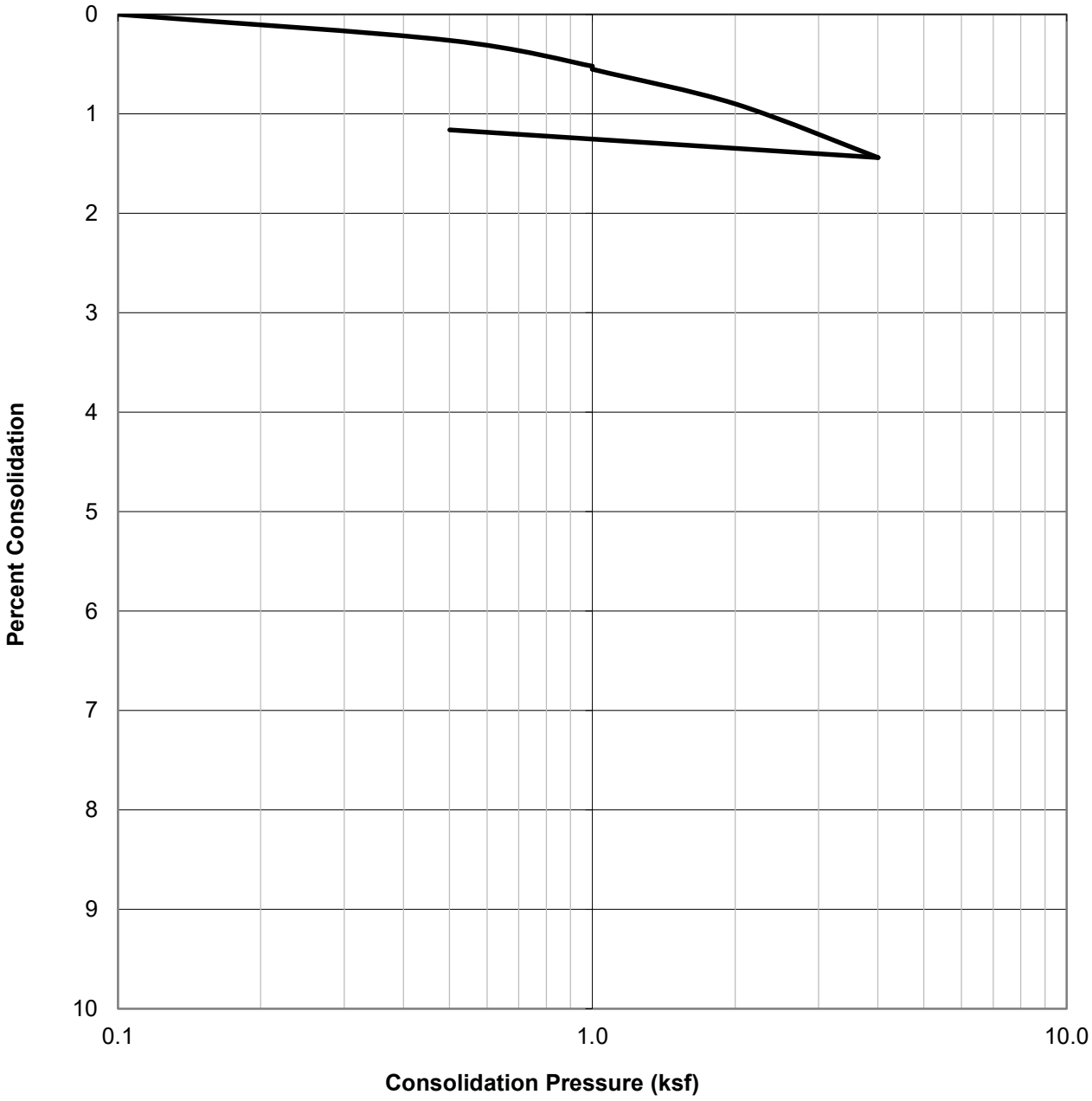
Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B6

WATER ADDED AT 1.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B1@3	Silty Sand (SM)	111.2	14.1	15.4

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CONSOLIDATION TEST RESULTS

ASTM D-2435

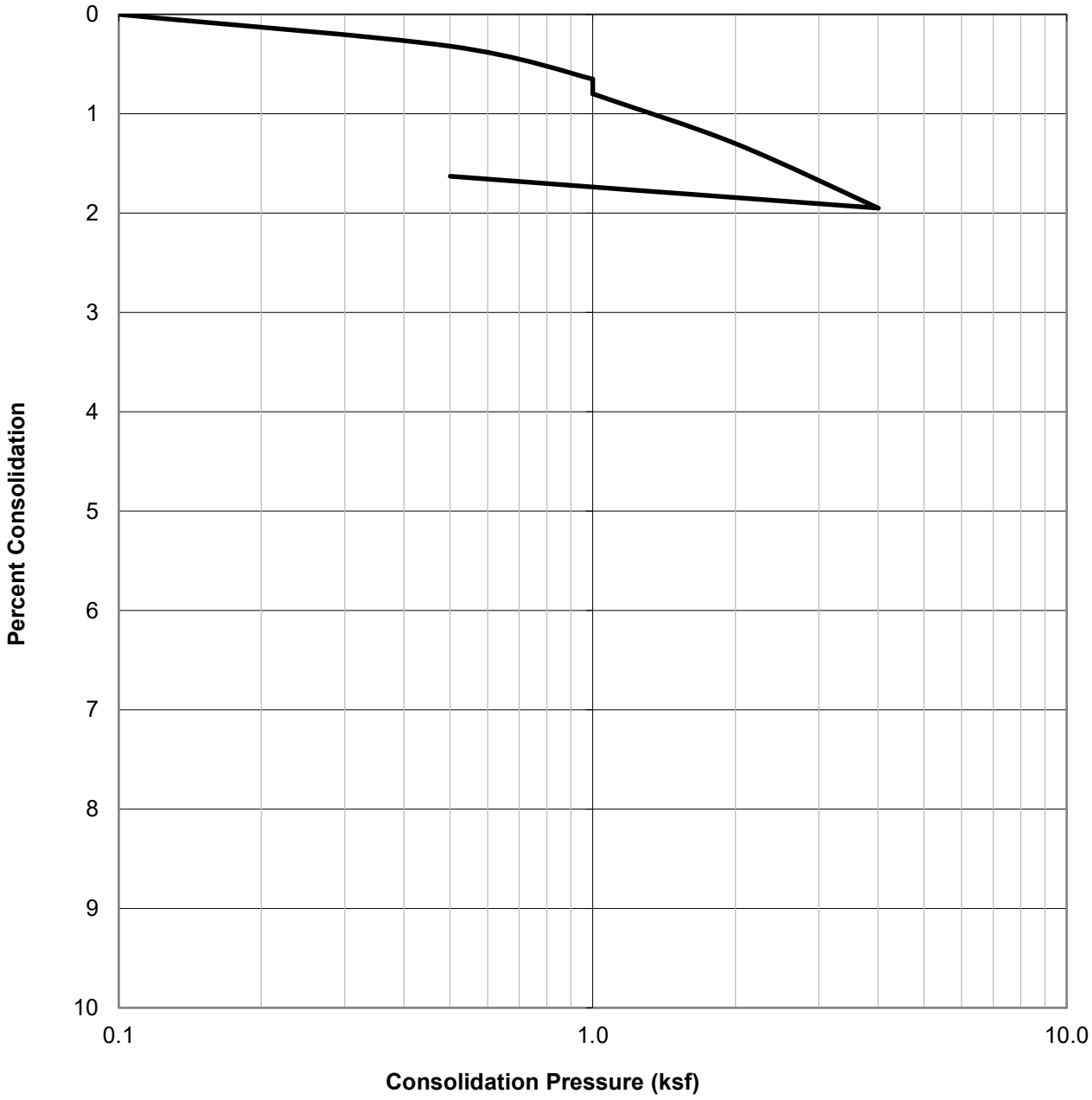
Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B7

WATER ADDED AT 1.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B1@6	Poorly Graded Sand (SP)	104.3	8.1	19.1

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CONSOLIDATION TEST RESULTS

ASTM D-2435

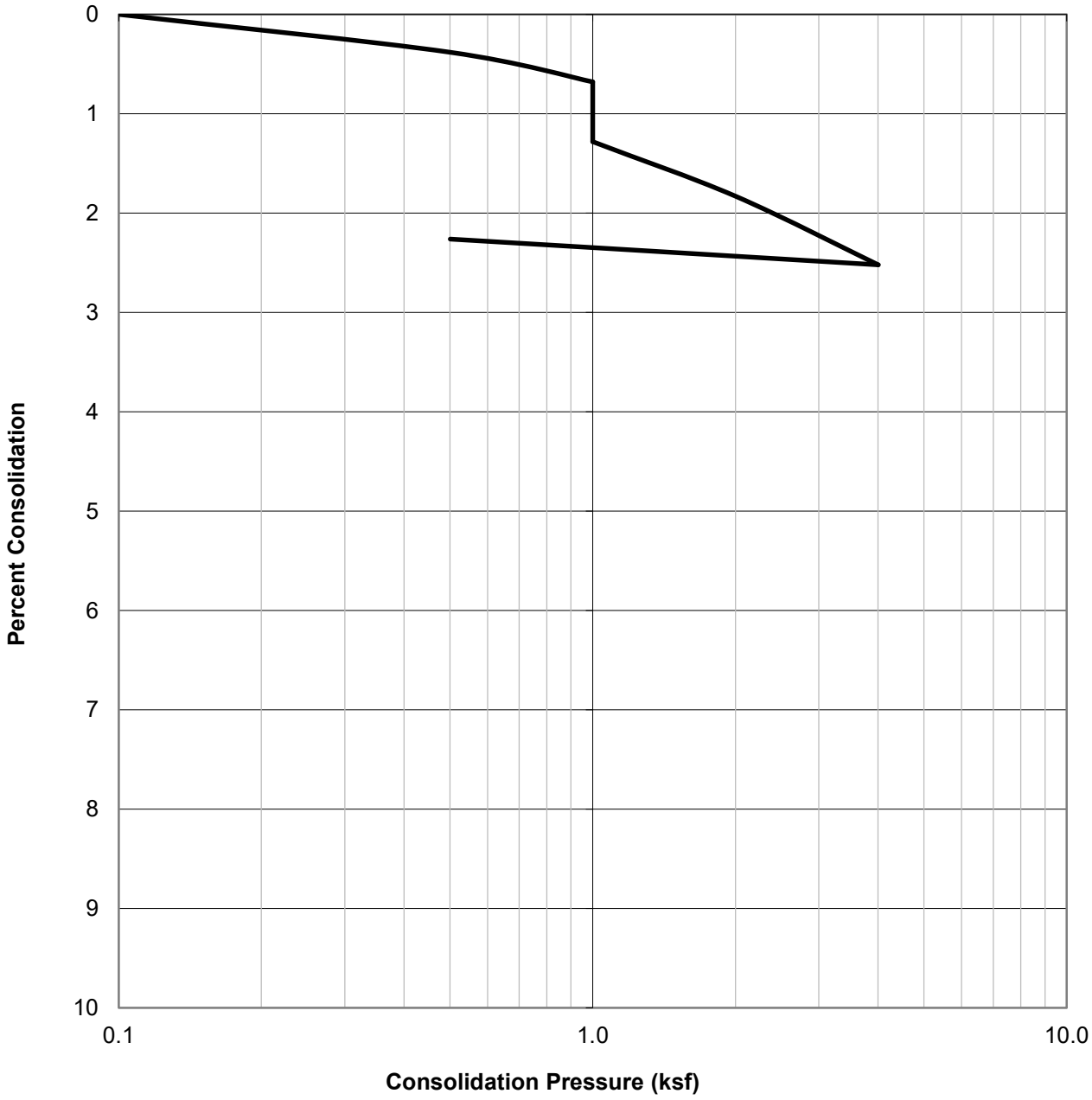
Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B8

WATER ADDED AT 1.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B1@8.5	Poorly Graded Sand (SP)	109.3	3.5	14.1

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CONSOLIDATION TEST RESULTS

ASTM D-2435

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Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

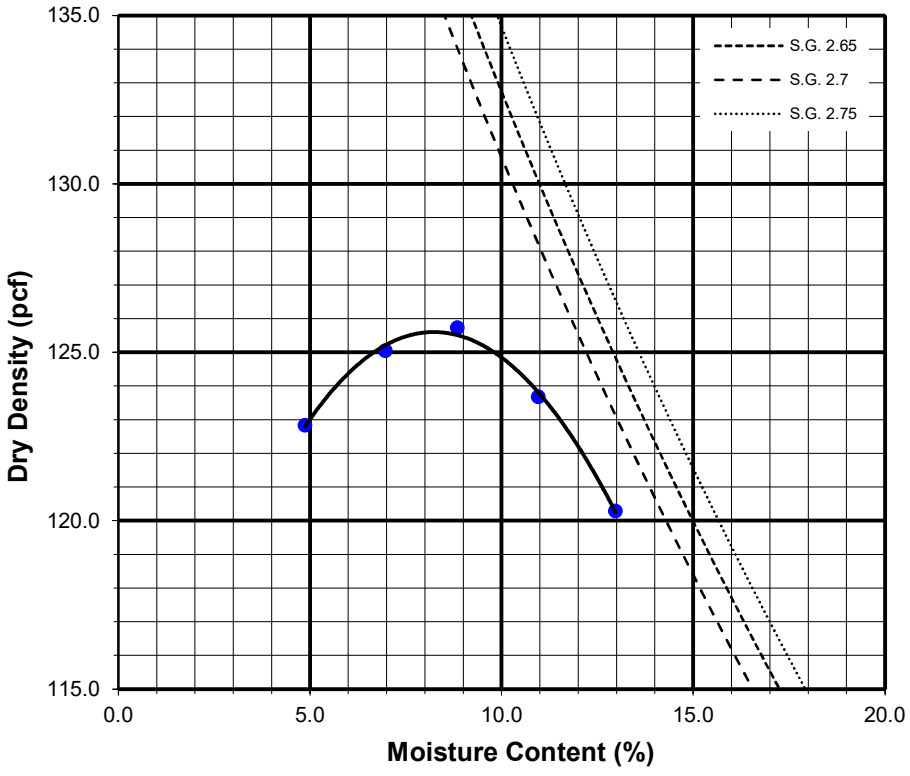
May 2024 Figure B9

Sample No:

B1@0-5	Silty Sand (SM)

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil + Mold	(g)	6023	6098	6145	6150	6130	
Weight of Mold	(g)	4077	4077	4077	4077	4077	
Net Weight of Soil	(g)	1946	2020	2067	2073	2053	
Wet Weight of Soil + Cont.	(g)	659.6	734.5	625.7	649.1	733.9	
Dry Weight of Soil + Cont.	(g)	634.8	696.3	585.7	597.5	665.3	
Weight of Container	(g)	125.9	147.6	133.4	126.4	136.5	
Moisture Content	(%)	4.9	7.0	8.8	11.0	13.0	
Wet Density	(pcf)	128.8	133.8	136.8	137.2	135.9	
Dry Density	(pcf)	122.8	125.1	125.7	123.7	120.3	

Maximum Dry Density (pcf)	**126.0**	**Optimum Moisture Content (%)**	**9.0**



Preparation Method: A

GEOCON

COMPACTION CHARACTERISTICS USING MODIFIED EFFORT TEST RESULTS

ASTM D-1557

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B10

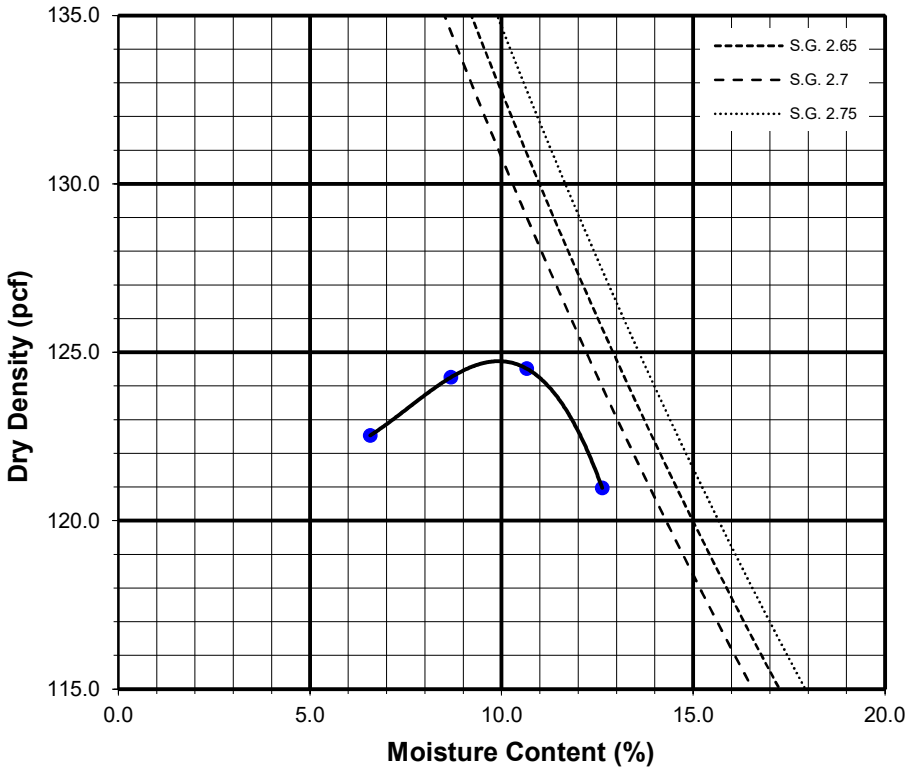
Sample No:

B3@0-5	Silty Sand (SM)

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil + Mold	(g)	6050	6117	6159	6135		
Weight of Mold	(g)	4077	4077	4077	4077	4077	
Net Weight of Soil	(g)	1973	2040	2081	2058	-4077	
Wet Weight of Soil + Cont.	(g)	615.5	800.7	690.2	627.4		
Dry Weight of Soil + Cont.	(g)	585.9	748.5	635.8	571.2		
Weight of Container	(g)	135.6	146.8	125.3	126.0		
Moisture Content	(%)	6.6	8.7	10.7	12.6		
Wet Density	(pcf)	130.6	135.0	137.8	136.2	-269.9	
Dry Density	(pcf)	122.5	124.3	124.5	121.0		

Maximum Dry Density (pcf)	**125.0**

Optimum Moisture Content (%)	**10.0**



Preparation Method: A

GEOCON

COMPACTION CHARACTERISTICS USING MODIFIED EFFORT TEST RESULTS

ASTM D-1557

Checked by: RP

Project No.: A8326-06-111

VALLEY OAKS CENTER FOR ENRICHED STUDIES
9171 TELFAIR AVENUE
SUN VALLEY, CALIFORNIA

May 2024 Figure B11

Appendix C – Asbestos Engineering Assessment

LOS ANGELES UNIFIED SCHOOL DISTRICT

TO: Romano Ibe, Design Manager
Los Angeles Unified School District
Asset Management – Facilities Planning & Development
333 S. Beaudry Avenue
Los Angeles CA, 90017

Greta Galoustian, Facilities Environmental Technical Manager
Los Angeles Unified School District
Facilities Environmental Technical Unit
1240 S. Naomi Avenue, 2nd Floor
Los Angeles, CA 90021

ASBESTOS ENGINEERING ASSESSMENT

Valley Oaks Center for Enriched Studies (7895)
(formerly known as Sun Valley High School)

9171 Telfair Avenue, Sun Valley, CA 91352
VOCES Multipurpose Athletic Field Upgrades Project

Work Order Number: 37467933

Colin Number: 10373693

Prepared Date: January 24th, 2024

Prepared By: Digitally signed by Deeta Hong DN: cn=Deeta Hong, ou=MO - Facilities Environmental Techical Unit (FETU), email=cp-deeta.hong@lausd.net, c=US Date: 2024.01.29 08:30:21 -08'00' Deeta Hong for Jennie Tran

Jennie Tran, CSST# 06-4009
Asbestos Abatement Coordinator
Facilities Environmental Technical Unit

Reviewed By: Damon Carrier Digitally signed by Damon Carrier DN: cn=Damon Carrier, o=LAUSD, ou=FETU, email=damon.carrier@lausd.net, c=US Date: 2024.01.25 16:45:36 -08'00'

Damon Carrier, CAC# 16-5798
Asbestos Abatement Supervisor
Facilities Environmental Technical Unit

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LIST OF ACRONYMS
For Asbestos

ACM	Asbestos-Containing Material
ACBM	Asbestos-Containing Building Material
ACCM	Asbestos-Containing Construction Material (California only)
AHERA	Asbestos Hazard Emergency Response Act
CAC	California Certified Asbestos Consultant
Cal/OSHA	California Division of Occupational Safety and Health
CCR	California Code of Regulations
CSST	California Certified Site Surveillance Technician
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FETU	Facilities Environmental Technical Unit (LAUSD)
HEPA	High Efficiency Particulate Air
HVAC	Heating, Ventilation, and Air Conditioning
LAUSD	Los Angeles Unified School District
NEA	Negative Exposure Assessment
NESHAP	National Emission Standards for Hazardous Air Pollutants
OEHS	Office of Environmental Health & Safety (LAUSD)
PEL	Permissible Exposure Limit
PLM	Polarized Light Microscopy
RACM	Regulated Asbestos-Containing Material
SCAQMD	South Coast Air Quality Management District

LIST OF DEFINITIONS
Asbestos

Abatement: Control/elimination of asbestos through operations and maintenance, repair, enclosure, encapsulation, or removal.

Amended Water: Water to which a surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

Asbestos: Asbestiform varieties of Chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonitegrunerite), anthophyllite tremolite, and actinolite.

Asbestos-Containing Material (ACM): Material or product containing more than one percent (1%) asbestos

Asbestos-Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a school building.

Asbestos-Containing Construction Material (ACCM): For California only. Manufactured construction material that contains more than one-tenth of one percent (0.1%) asbestos by weight.

Building ID Number or Code: Six-digit alphanumeric identification code assigned to each building on a site; sometimes referred to as the insurance code, ID number, or other similar terms.

District: The Los Angeles Unified School District and its representatives.

Friable: Used in reference to a school building material which, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure.

High Efficiency Particulate Air (HEPA): Filter or system capable of removing particulates of 0.3 microns or larger from air at 99.97 percent or greater efficiency.

Nonfriable: Used in reference to a school building material which, when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure.

Plasticize: To cover floors, ceilings, and walls with plastic (polyethylene) sheeting.

Regulated Area: Area established by the employer (abatement contractor) to demarcate where asbestos work is conducted, and by the adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or may exceed (with reasonable possibility) the permissible exposure limit.

I. Executive Summary, Introduction, Purpose, and Scope of Services

For the VOCES Multipurpose Athletic Field Upgrades Project at Valley Oaks Center for Enriched Studies (7895) – formerly known as Sun Valley High School, the Facilities Environmental Technical Unit (FETU) has performed an asbestos engineering assessment of the work areas involved. The asbestos engineering assessment performed was limited to the areas and building materials that will be impacted by the project scope of work, as indicated in the Request For Assistance (RFA) Form from Mr. Romano Ibe, Design Manager received on December 19th, 2023.

II. Scope of Work

The following areas will be impacted by the scope of work:

- **Grounds (G-7895) –** Asphalt at playground areas **–** design and construction of new football field lighting, goal posts and scoreboard, installation of new 5-tier portable bleachers, grading, drainage improvements, amending topsoil and re-seeding the natural turf on the existing multipurpose athletic field, and repairing the existing irrigation system, demolition and removal of existing football goal posts and handball courts, and associated landscape, hardscape, and infrastructure improvement.

- **New Gym Building (B-35123) –** re-build exterior drinking fountain.

III. Visual Survey, Sampling Methodology, Analytical Procedures

Visual Survey

The asbestos engineering assessment report was performed generally in accordance with the AHERA protocol (40 CFR Part 763, Subpart E). Visual identification was performed by assessing visible and accessible structural, architectural, and mechanical components that may be impacted as part of this specific project, for the presence of suspect ACM at the Project Site. Each identified suspect asbestos-containing material (ACM) was sampled in accordance with procedures established by the United States Environmental Protection Agency (USEPA).

Quantities and locations are based upon areas that are included in the project scope of work. Materials similar to those in this report may be present in areas which were not accessed.

Sampling Methodology

In the next phase, a sampling strategy is then developed to provide representative sampling of the suspect materials using the methods identified in AHERA and

Cal/OSHA. Each sample is placed in a container; the container is sealed, labeled and placed in a storage bag. Samples are documented by entering the sample data on a chain-of-custody for bulk analysis form, including a description of the material, sample number, location, condition, accessibility, friability, potential for damage, and quantity. Typically, the sample location is marked on an 8-1/2 x 11 inch not-to-scale floor plan. Throughout the process, special care is taken to prevent cross-contamination of the collected samples. Sampling equipment is cleaned after each sample is obtained. In addition, sample containers are placed directly beneath each sample location, when feasible, to collect any materials which may become dislodged during the sampling process. Any debris generated by the sampling is cleaned by wet-cleaning methods. Sample locations are appropriately repaired.

Analytical Procedures

Suspect ACM samples were delivered, under chain-of-custody, to LAUSD Facilities Services Division (FSD) Laboratory located at 1449 South San Pedro Street, Los Angeles, California, 90015 (213-745-1138). LAUSD FSD Laboratory is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP#101505-0) for asbestos.

All bulk sample analysis is conducted by Polarized Light Microscopy (PLM) with dispersion staining as described in the "Method for the Determination of Asbestos in Bulk Building Materials" (EPA-600/R-93/116, July 1993). A suspect material is immersed in a solution of known refractive index and subjected to illumination of polarized light. The color displayed enables mineral identification. Quality control samples at a rate of 10% or one per project, whichever is greater, are reanalyzed by a second, independent analyst. Samples estimated to contain asbestos in amounts of 1% or less are also reanalyzed. Once analyzed, results are entered on bulk logs for inclusion in the report.

NOTE: The amended National Emission Standard for Hazardous Air Pollutants (NESHAP), November 20, 1990, included a requirement that when the asbestos content of a bulk sample material is determined using procedures outlined and the asbestos content is estimated to be less than 10% by a method other than point counting, the parties legally responsible for a building (owner/operator) may (1) elect to assume the amount to be greater than 1% and treat the material as a regulated asbestos-containing material, or (2) require verification of the amount by the Point Counting method. The purpose of this procedure is to minimize false negative analysis (reporting the samples as containing less than 1% asbestos for asbestos-containing samples actually containing greater than 1%) and false positives (reporting the sample as containing greater than 1% asbestos for samples containing less than 1% asbestos). Point Counting was included in NESHAP in response to an EPA study that found an unacceptable amount of false negative and false positive analyses by methods outlined in EPA-600/R-93/116, July 1993 method. Reminder: in California the abatement of

materials with detectable quantities of asbestos - legally defined as materials containing percentages of asbestos greater than one-tenth of one percent (>0.1%) by area - are regulated by Cal/OSHA and therefore considered positive in this report. Samples with trace amounts of asbestos (less than 1%) will be assumed to be asbestos-containing and subject to all applicable regulations.

IV Discussion of Survey Findings and Recommendations.

The FETU representatives Samuel Marquez, Jennie Tran, and Johnny Santhavisouk visited the job site on January 12th, 2024, to assess the suspect asbestos-containing materials. Fifty-One (51) samples were collected by FETU in conjunction with this assessment.

The tables below include materials that are anticipated to be impacted during the course of this project.

The FETU's findings are as follows:

A. Grounds (G-7895) – Playground area

1. Asbestos-Containing Materials (ACM >1%) or Asbestos-Containing Construction Material (ACCM >0.1%) anticipated to be disturbed during the project:

MATERIAL	LOCATION/IMPACT	LAB SAMPLE NUMBERS
None	None	None

2. Non-Asbestos-Containing Materials (Non-ACM) anticipated to be disturbed during the project:

MATERIAL	LOCATION/IMPACT	LAB SAMPLE NUMBERS
a. Asphalt Paving (cored)	**Locations**: Playground (Area 1) – West of New Gym **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1299 to 2401-1305 (1/12/24)
b. Asphalt Paving (cored)	**Locations**: Playground (Area 2) – South of New Gym **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1306 to 2401-1307 (1/12/24) 2305-1216 to 2305-1220 (5/19/23)
c. Asphalt Paving (cored)	**Locations**: Playground (Area 3) – Handball court **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1308 to 2401-1312 (1/12/24)
d. Asphalt Paving (cored)	**Locations**: Playground (Area 4) – South of New Gym **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1313 to 2401-1319 (1/12/24)
e. Asphalt Paving (cored)	**Locations**: Playground (Area 5) –South of P.E Building **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1320 to 2401-1326 (1/12/24)

f. Asphalt Paving (cored)	**Locations**: Playground (Area 6) – Southeast of P.E Building **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1327 to 2401-1333 (1/12/24)
g. Asphalt Paving (cored)	**Locations**: Playground by new play-yard (Area 7) **Scope of Impact:** No impact, for information only.	2308-1696 to 2308-1700 (8/30/23)
h. Asphalt Paving (cored)	**Locations:** Playground (Trench 1) – South of New Gym **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1334 to 2401-1336 (1/12/24) 2305-1213 to 2305-1215 (5/19/23)
i. Asphalt Paving (cored)	**Locations**: Playground (Trench 2) – East of P.E Building **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1337 to 2401-1341 (1/12/24)
j. Asphalt Paving (cored)	**Locations**: Playground (patch 2) – South of P.E Building at ramp **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1342 to 2401-1344 (1/12/24)
k. Asphalt Paving (cored)	**Locations**: Playground (patch 1) – South of P.E Building **Scope of Impact:** Major disturbance during athletic field upgrades project.	2401-1345 to 2401-1349 (1/12/24)

3. Recommendations for handling ACM *and/or* ACCM:

    a. None.

    b. **During the underground construction activities for grading, drainage improvements, repairing irrigation system, or infrastructure improvements, if any suspect asbestos materials such as Transite pipe, pipe wrap/pipe insulation, and/or waterproofing membranes, etc., are discovered, stop all work activities and contact FETU and District approved project consultant for inspection and further assistant.**

4. General notes:

    a. Painted concrete handball walls at handball court were observed in fair condition at the time of the assessment.

    b. Painted/coated lines were observed at the impacted playground asphalt areas at the time of the assessment.

B. New Gym Building (B-35123)

1. Asbestos-Containing Materials (ACM >1%) or Asbestos-Containing Construction Material (ACCM >0.1%) anticipated to be disturbed during the project:

	MATERIAL	LOCATION/IMPACT	LAB SAMPLE NUMBERS
a.	None	**None**	None

2. Non-Asbestos-Containing Materials (Non-ACM) anticipated to be disturbed during the project:

	MATERIAL	LOCATION/IMPACT	LAB SAMPLE NUMBERS
a.	Brick/cinder block wall	**Locations**: Exterior south wall **Scope of Impact:** remove and re-build exterior drinking fountain.	Non-suspect material.

3. Recommendations for handling ACM *and/or* ACCM:

   a. None.

4. General notes:

   a. The painted/coated exterior walls of were observed in fair condition at the time of the assessment.

V. General Recommendations and Notes

All suspect construction materials not identified above are presumed asbestos-containing. All attics and crawl spaces not specified herein as clear for normal access and ceiling spaces not inspected and identified as absent of contamination are to be considered asbestos-contaminated areas. If materials not identified in this report will be disturbed or if attics, crawl spaces or ceiling spaces not identified in this report as clear of contamination are to be accessed during construction, notify IOR or OAR. They will contact the Facilities Environmental Technical Unit for further direction prior to disturbance of these materials or access of the contaminated spaces.

IV. Lead Related Construction / Impact to Coated Surfaces

1. The areas involved with this project are as follows:

   - **Ground (7895) – Playground Asphalt Areas**
   - **New Gym Building (B-35123)**

2. Renovation, repair, or painting work performed on buildings regardless of the date of construction require special handling and environmental monitoring when coated surfaces including, but not limited to, painted, varnished, and glazed surfaces are impacted. All coated surfaces applied are assumed to be lead-based. All work shall be performed in compliance with Facilities Standard Specification, Section 02 8333, "Lead Abatement and Lead Related Construction Work." XRF testing methodology is not acceptable in determining negative for lead content for Cal/OSHA compliance purposes, except for notification requirements. XRF may be used in determining lead-based paint for compliance with the U.S.E.P.A. Renovator, Repair, and Painting Rule. Disturbance of coated surfaces by contractors will be monitored by qualified District staff or Environmental Consultant sufficient to ensure that proper training and work procedures, cleanup, and waste handling are employed.

3. Loose or flaky paint that will be disturbed during the work of this project or in close proximity of the work area shall be stabilized by removing the loose or flaky paint and leaving only paint in stable condition.

4. It should be noted that any coated surfaces and building materials not listed above are to be considered to be lead-based and asbestos-containing respectively. Should the project require the disturbance of these surfaces and building materials, the FETU shall be notified.

If during the course of the project contractor encounter suspect materials which are not identified in this report, contact the Facilities Environmental Technical Unit (FETU) immediately for further direction prior to disturbance of these materials.

If any changes occur in the scope of work, notify the FETU before such changes are implemented.

This report may not be changed, modified or include additions without the express written permission from the FETU.

If you have any question regarding this report, contact FETU at (213) 745-1450.

APPENDICES

APPENDIX A. Drawing (Site Plan)

APPENDIX B. Analytical Results

APPENDIX C. Asbestos Form A

APPENDIX D. Certifications

APPENDIX E. Scope of Work

Appendix D – Pedestrian Safety Technical Memo

TECHNICAL MEMORANDUM

TO: Seth Hopkins | TETRA TECH, INC.

FROM: Giancarlo Ganddini | GANDDINI GROUP, INC.

DATE: August 28, 2025

SUBJECT: Traffic and Pedestrian Safety Study for the Valley Oaks Center for Enriched Studies Multipurpose Athletic Field Upgrades Project
(GGI Ref# 19845)

Ganddini Group, Inc. is pleased to provide this Traffic and Pedestrian Safety Study for the Valley Oaks Center for Enriched Studies (VOCES) project in the Sun Valley neighborhood of the City of Los Angeles. The purpose of this analysis is to assess the significance of potential pedestrian safety and transportation impacts in the context of the California Environmental Quality Act (CEQA), with the Los Angeles Unified School District (LAUSD) as the Lead Agency. The Project is not anticipated to increase student capacity, and the environmental review will utilize the School Update Program (SUP) and related Subsequent Program Environmental Impact Report (SPEIR) certified by LAUSD on December 15, 2023.

As documented herein, the proposed Project would have no impact or less than significant impact on Pedestrian Safety and Transportation and Circulation issues based on the thresholds established in the SUP SPEIR.

If we can be of further assistance, please contact me at (714) 795-3100 ext. 101.

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PROJECT DESCRIPTION

The Project site is located within the existing VOCES Campus located at the southwest corner of Sheldon Street and Telfair Avenue in the Sun Valley neighborhood of the City of Los Angeles, California. Figure 1 shows the regional location map and Figure 2 shows the Project location map.

The proposed Project involves the modernization and enhancement of the existing multipurpose athletic field and the restriping of an adjacent parking lot at VOCES, located within the 20.7-acre Campus at 9171 Telfair Avenue, Sun Valley, California. The Project aims to create a safe, functional, and high-quality athletic facility while improving parking efficiency and accessibility. The Project is categorized as a Type 3 project (Modernization, Repair, Replacement, Upgrade, Remodel, Renovation, and Installation) under the SUP SPEIR and will be implemented with an estimated budget of $7.5 million. The Project scope, as outlined in the RFP and supplemented by the mention of parking lot restriping, includes the following components:

- New Athletic Field Construction: Design and construction of a new multipurpose athletic field with field lighting, goal posts, and a scoreboard to support sports such as football, soccer, baseball, softball, and other activities.
- Bleacher Installation: Installation of new 5-tier portable bleachers to accommodate spectators.
- Field Improvements: Grading, drainage improvements, amending topsoil, re-seeding natural turf on the existing multipurpose athletic field, and repairing the existing irrigation system.
- Demolition and Removal: Demolition and removal of existing football goal posts and handball courts to accommodate the upgraded facilities.
- Ancillary Improvements: Landscape, hardscape, and infrastructure enhancements, including pathways, fencing, and utilities to support the athletic field, as well as restriping of an adjacent parking lot to improve accessibility, safety, and parking efficiency (e.g., Americans with Disabilities Act (ADA)-compliant spaces, optimized layout).

The Project is not designed or expected to increase the current capacity of the Campus.

Figure 3 shows the proposed site plan.

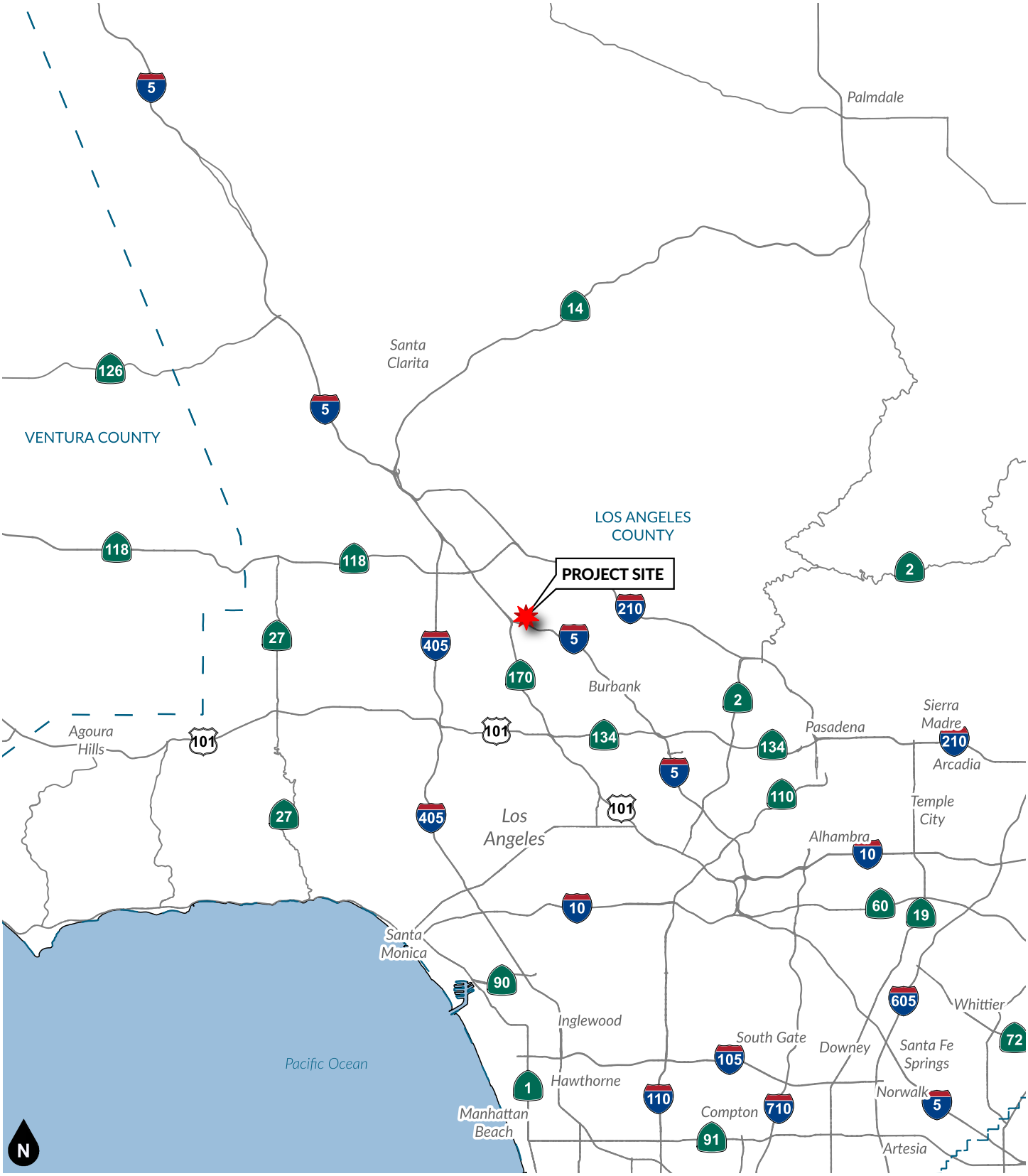


Figure 1
Regional Location Map

Legend

VOCES Campus

Sources: Google (Satellite Imagery)

Figure 2
Project Location Map

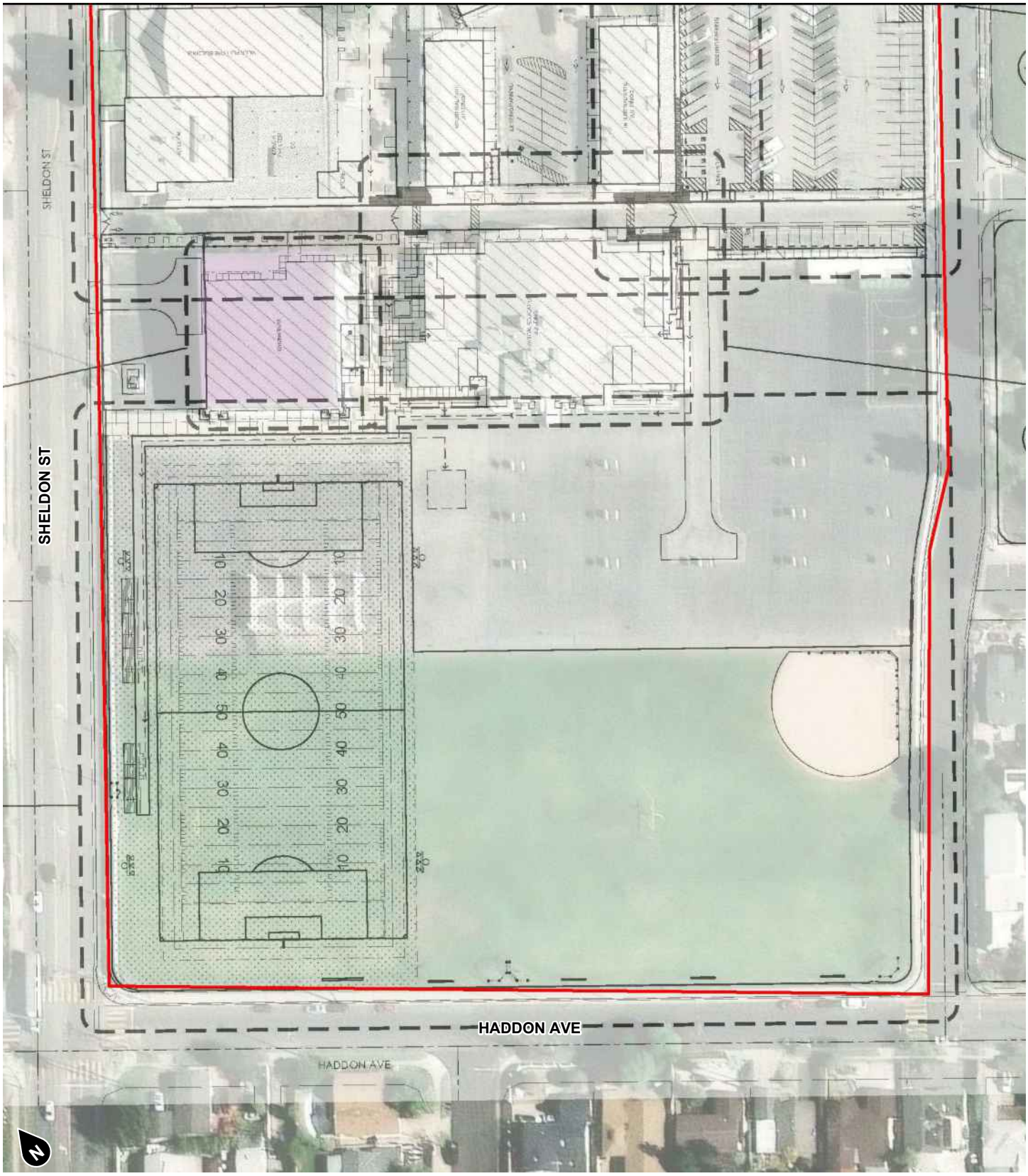


Figure 3
Proposed Site Plan

Source: Tetra Tech, Inc.

Site Access and Circulation

The primary pedestrian and vehicular access to VOCES is via Telfair Avenue, with additional access points along Sheldon Street and Haddon Avenue. Student drop-off and pick-up occur along Telfair Avenue, and faculty parking is provided on-site, including in the parking lot targeted for restriping. The Project will not alter existing access points or circulation patterns but will enhance the adjacent parking lot through restriping to improve accessibility (e.g., ADA-compliant spaces), safety, and parking efficiency. No increase in student enrollment or vehicle trips is anticipated, and the Project will not generate additional vehicle miles traveled (VMT). During construction, temporary staging areas for equipment and materials will be established on-site, likely within or adjacent to the athletic field or parking lot, to avoid impacts to local streets. Construction-related traffic, including haul trucks for demolition debris, will be scheduled to avoid student pick-up and drop-off hours, as coordinated with school administration.

The Project includes accessibility upgrades, such as ADA-compliant pathways from the athletic field to spectator areas and the restriped parking lot, in accordance with the California Building Code (CBC) and LAUSD's ADA Transition Plan. The parking lot restriping will ensure compliance with ADA requirements, potentially including designated accessible parking spaces and improved pedestrian connections to the athletic field.

Construction Phasing and Equipment

The Project will be developed in a single phase, with construction anticipated to begin in the second quarter of 2027 and be completed by the third quarter of 2028. The construction schedule includes:

- Demolition and Site Preparation: Removal of existing football goal posts and handball courts, grading, and drainage improvements for the athletic field, and preparation of the parking lot for restriping.
- Field Upgrades Construction: Installation of new field components (lighting, goal posts, scoreboard), re-seeding of turf, and irrigation system repairs.
- Bleacher and Ancillary Improvements: Installation of portable bleachers, landscaping, hardscape features (e.g., pathways, fencing), and restriping of the adjacent parking lot to improve accessibility and layout.

Construction equipment may include graders, tractors, loaders, backhoes, water trucks, pavement marking equipment for restriping, and haul trucks for debris removal. An estimated 20–50 workers will be on-site during peak periods. Construction worker parking and material staging will be accommodated on-site to avoid impacts to local streets. Haul routes and delivery schedules will be coordinated with the City of Los Angeles Department of Building and Safety and school administration to minimize disruptions. The Project will adhere to SCs for dust control, noise management, and traffic safety, as outlined in the SUP SPEIR.

VEHICULAR ACCESS

Regional access for the project site is primarily provided by Interstate 5 approximately one-quarter mile south of the project site. The key roadways providing local circulation are Telfair Avenue, Sheldon Street, Haddon Street, and Allegheny Street.

The north side of Allegheny Street adjacent to the project site is designated for curb side passenger loading only on school days from 6:30 AM to 9:00 AM and 1:30 PM to 4:00 PM. Vehicles are not permitted to stop on Sheldon Street or Telfair Avenue on school days from 7:00 AM to 5:00 PM (school bus exempt). Faculty parking is provided on-site, including in the parking lot targeted for restriping.
The Project will not alter existing access points or circulation patterns but will enhance the adjacent parking lot through restriping to improve accessibility (e.g., ADA-compliant spaces), safety, and parking efficiency. No increase in student enrollment or vehicle trips is anticipated.

Figure 4 illustrates traffic controls for the following key intersections in the project vicinity:

- Sheldon Street at Haddon Avenue (Traffic signal)
- Sheldon Street at Telfair Avenue (Traffic signal)
- Allegheny Street at Telfair Avenue (All-way stop)
- Allegheny Street at Haddon Avenue (All-way stop)
- Allegheny Street at Kewen Avenue (All-way stop)

Sheldon Street is designated as an Avenue II (86-foot right-of-way) roadway in the City of Los Angeles Mobility Plan 2035. Sheldon Street is not included in the City of Los Angeles neighborhood enhanced network pedestrian network, or bicycle lane network. Sheldon Street is currently a four-lane roadway with intermittent left turn lanes in the project vicinity. The existing pavement width is approximately 64 feet along the Campus frontage. The posted speed limit is 40 miles per hour with posted 25 mile per hour school zone speed limit signs in the project vicinity.

Telfair Avenue is designated as a Collector (66-foot right-of-way) in the City of Los Angeles Mobility Plan 2035. Telfair Avenue is not included in the City of Los Angeles neighborhood enhanced network pedestrian network, or bicycle lane network. Telfair Avenue is currently a two-lane undivided roadway in the project vicinity. The existing pavement width is approximately 36 feet along the Campus frontage. The de facto speed limit is 25 miles per hour with posted 15 mile per hour school zone speed limit signs in the project vicinity.

Haddon Avenue is designated as a Collector Street (66-foot right-of-way) in the City of Los Angeles Mobility Plan 2035. Haddon Avenue is not included in the City of Los Angeles neighborhood enhanced network, pedestrian enhanced network, or bicycle lane network. Haddon Avenue is currently a two-lane undivided roadway in the project vicinity. The existing pavement width is approximately 38 feet along the Campus frontage. The de facto speed limit is 25 miles per hour with posted 15 mile per hour school zone speed limit signs in the project vicinity.

Allegheny Street is designated as a Local Street (60-foot right-of-way) in the City of Los Angeles Mobility Plan 2035. Allegheny Street is not included in the City of Los Angeles neighborhood enhanced network, pedestrian enhanced network, or bicycle lane network. Allegheny Street is currently a two-lane undivided roadway in the project vicinity. The existing pavement width is approximately 36 feet along the Campus frontage except for a short segment near Cayuga Avenue that narrows to 26 feet. The de facto speed limit is 25 miles per hour in the project vicinity.

Pedestrian Facilities

Figure 5 shows existing pedestrian facilities in the project vicinity. As shown on Figure 5, sidewalks are present on each side of all roadways surrounding the Campus, except for the south side of Allegheny Street (opposite the school) adjacent to a few private residential properties. Yellow school crossing crosswalks are present at the key intersections.

The primary pedestrian and vehicular access to VOCES is via Telfair Avenue, with additional access points along Sheldon Street and Haddon Avenue. The Project will not alter existing access points or circulation patterns. No increase in student enrollment or pedestrian trips is anticipated.

Legend
Traffic Signal
AWS All Way Stop

Figure 4
Key Intersections and Traffic Controls

Legend
- Sidewalk
- School Crosswalk

Figure 5
Existing Pedestrian Facilities

Bicycle Facilities

No dedicated bicycle lanes are present in the immediate vicinity, though cyclists may share roadways or sidewalks with pedestrians. Bicycle racks are provided on Campus for student use.

Transit Service

Figure 6 shows existing transit services in the project vicinity. As shown on Figure 6, public transit in the vicinity includes bus stops served by the Los Angeles County Metropolitan Transportation Authority (Metro) along San Fernando Road (Bus Line 224), approximately 0.5 miles east of the Campus, and along Laurel Canyon Boulevard (Bus Line 230), approximately 0.5 miles west.[1] The closest stations to the Project site are the North Hollywood Station approximately 4.75 miles south, which is the northern terminus of Metro Rail B Line, and the Sylmar/San Fernando Station approximately five miles northwest, which is served by Metrolink rail and various Metro Bus lines.

General Plan Context

Figure 7 shows City of Los Angeles General Plan Circulation System[2] in the vicinity of the project site. Figure 8 through Figure 14 illustrate the project site location in relation to network concept maps for the following modal priorities as established by the City of Los Angeles Mobility Plan 2035:

- Transit Enhanced Network shows a network of streets prioritized for transit (Figure 8).
- Neighborhood Enhanced Network shows a network of streets prioritized for walking, biking, and slower moving transportation modes (Figure 9).
- Bicycle Enhanced Network shows a network of streets prioritized for bicycle movement and consists of bicycle paths, Tier 1/protected bicycle lanes, and segments from the Neighborhood Enhanced Network (Figure 10).
- Bicycle Lane Network map shows the bicycle lane network consisting of Tier 2 and Tier 3 bicycle lanes (Figure 11).
- Vehicle Enhanced Network shows a network of streets prioritized for vehicular movement (Figure 12).
- Pedestrian Enhanced Districts shows targeted areas on arterial streets that are prioritized for pedestrian safety enhancements (Figure 13).
- Goods Movement concept map shows existing freight movement facilities, including major intermodal terminals (Figure 14).

Figure 15 shows the City of Los Angeles High Injury Network in the project vicinity. As shown on Figure 15, the Campus frontage along Sheldon Street is on the High Injury Network. It is noted that this segment of Sheldon Street currently has posted school speed zone limits of 25 miles per hour and two signalized crossings with high-visibility school crosswalk markings at the intersections of Sheldon Street/Haddon Avenue and Sheldon Street/Telfair Avenue. The proposed Project itself would not result in exposure of additional students to the High Injury Network.

[1] Los Angeles Metro. Bus and Rail System Map. https://cdn.beta.metro.net/wp-content/uploads/2025/06/06110740/25-1389_blt_system_map_47x47.5_DCR.pdf

[2] Los Angeles Department of City Planning. 2016. Mobility Plan 2035. https://planning.lacity.gov/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf

Source: Metro

Figure 6
Existing Transit Service

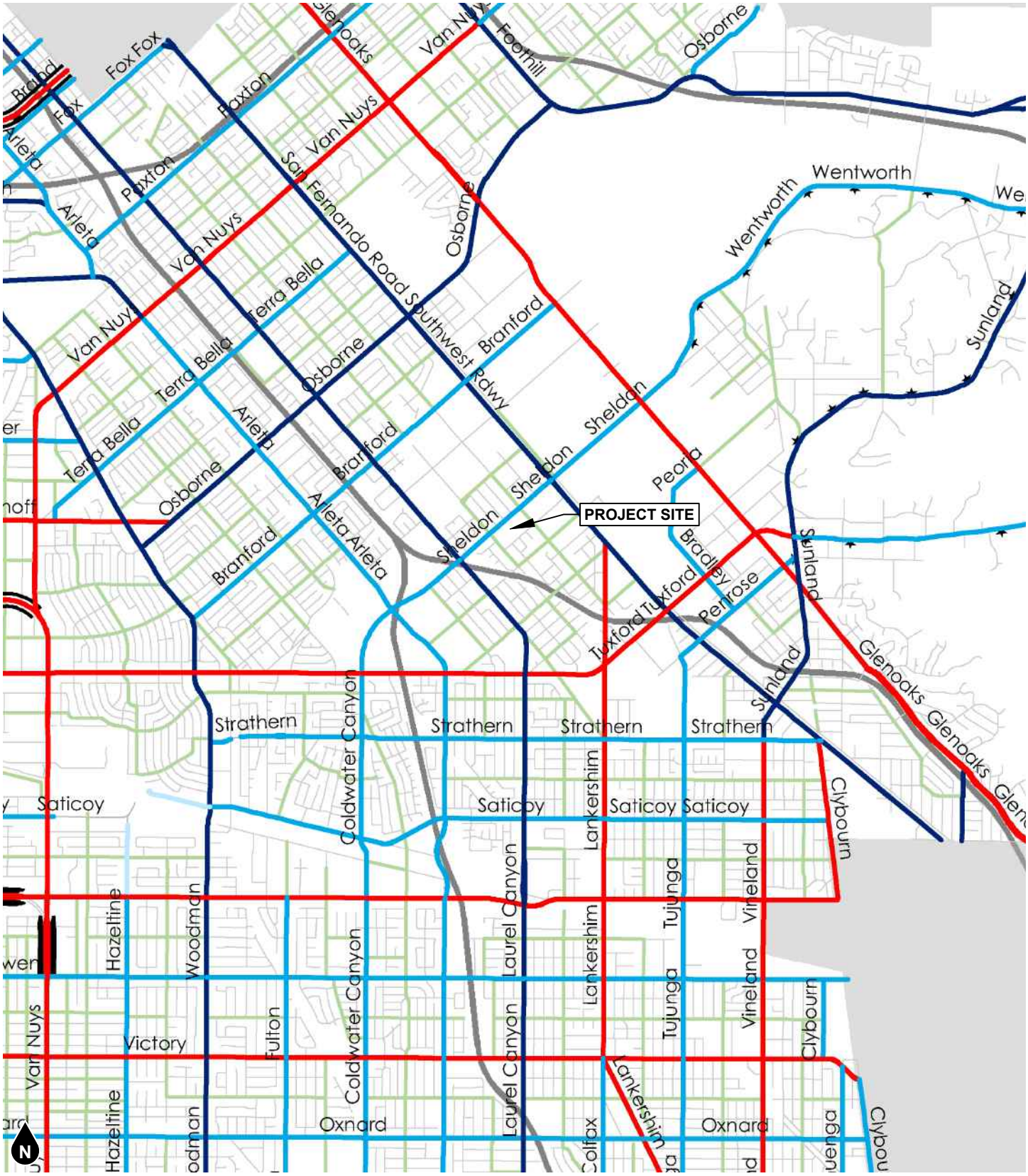


Figure 7
City of Los Angeles Mobility Plan
Circulation System

Source: City of Los Angeles, Mobility Plan 2035

Source: City of Los Angeles, Mobility Plan 2035

Figure 8
City of Los Angeles Mobility Plan
Transit Enhanced Network

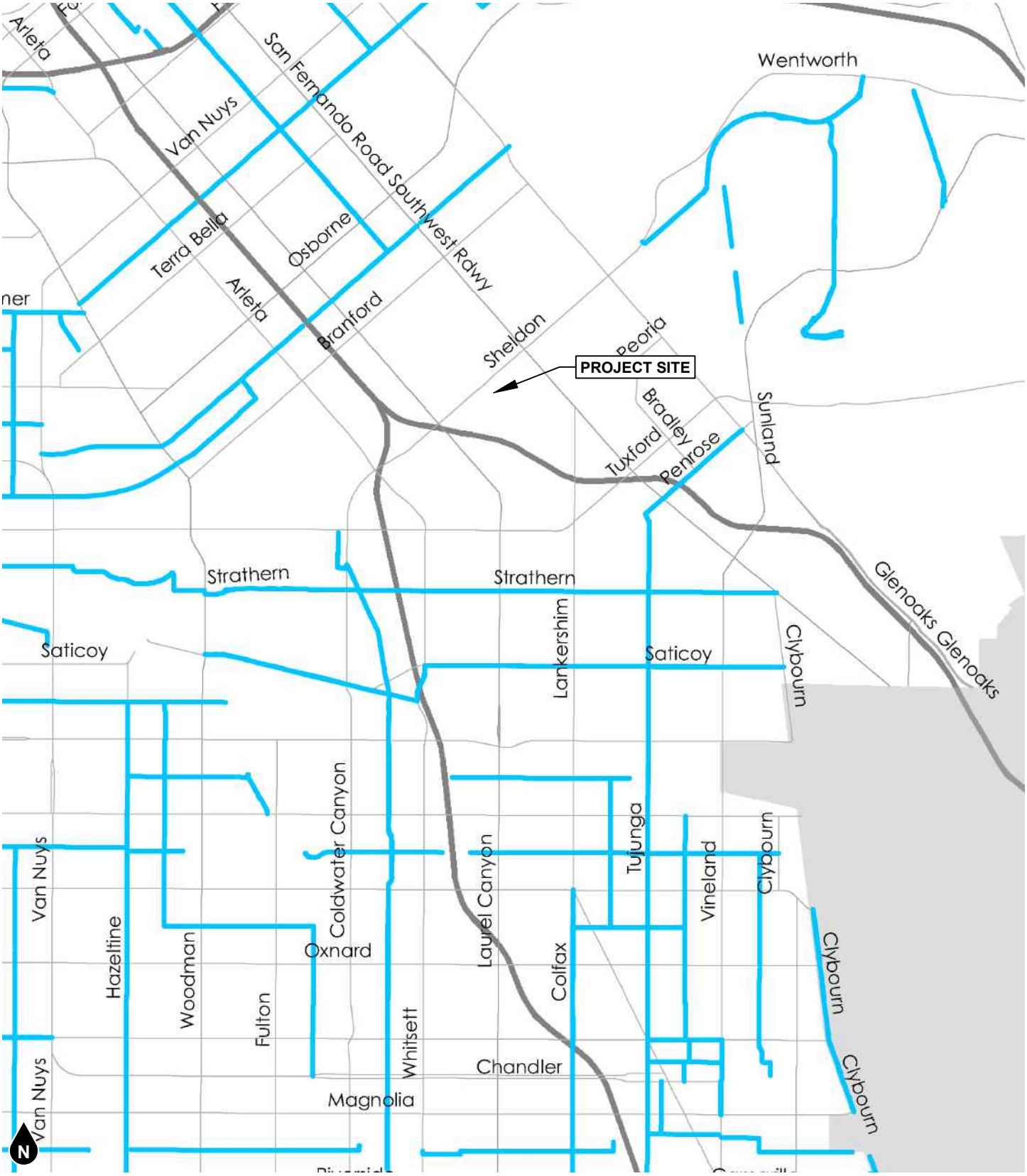


Figure 9
City of Los Angeles Mobility Plan
Neighborhood Enhanced Network

Source: City of Los Angeles, Mobility Plan 2035

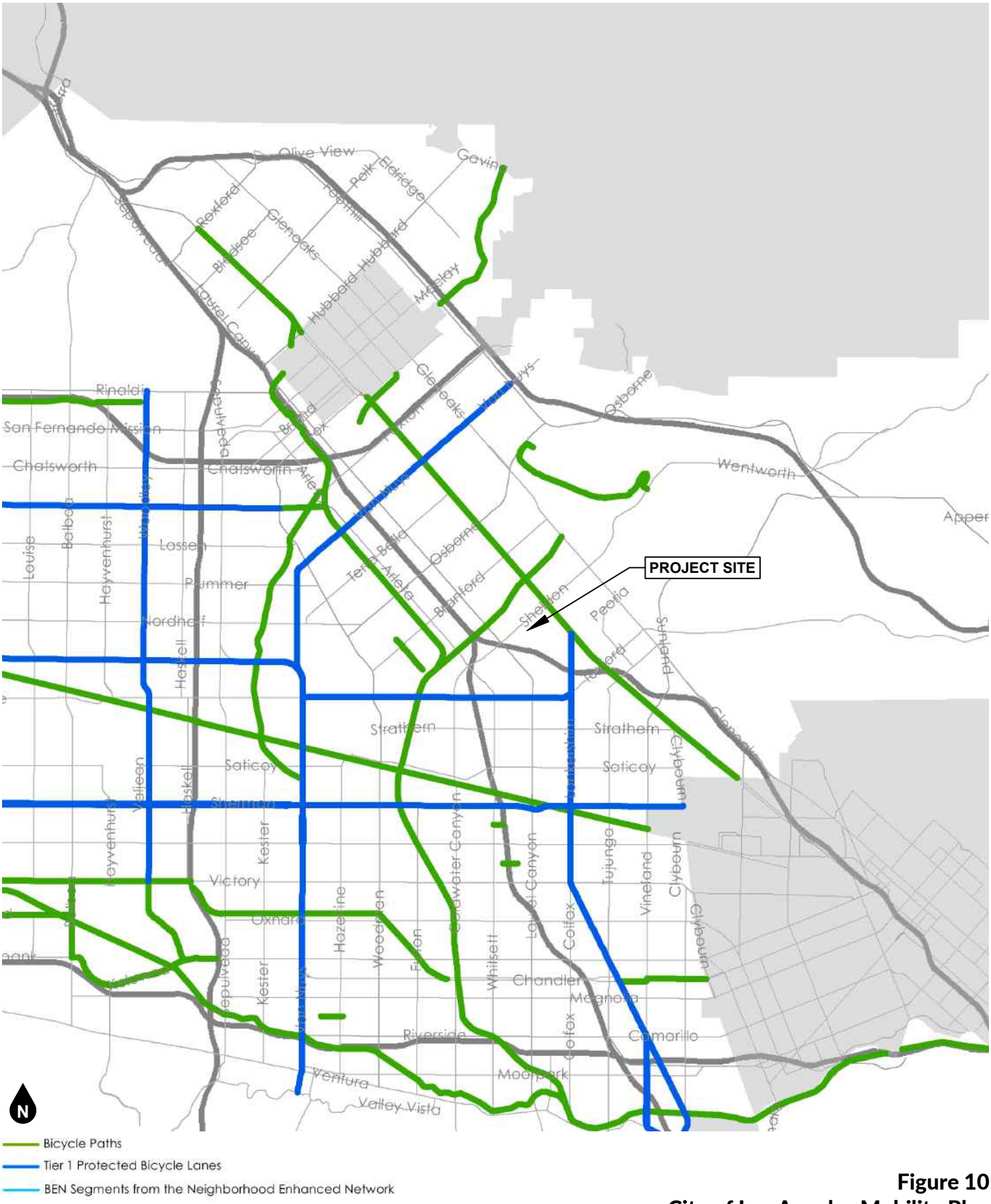


Figure 10
City of Los Angeles Mobility Plan
Bicycle Enhanced Network

Source: City of Los Angeles, Mobility Plan 2035

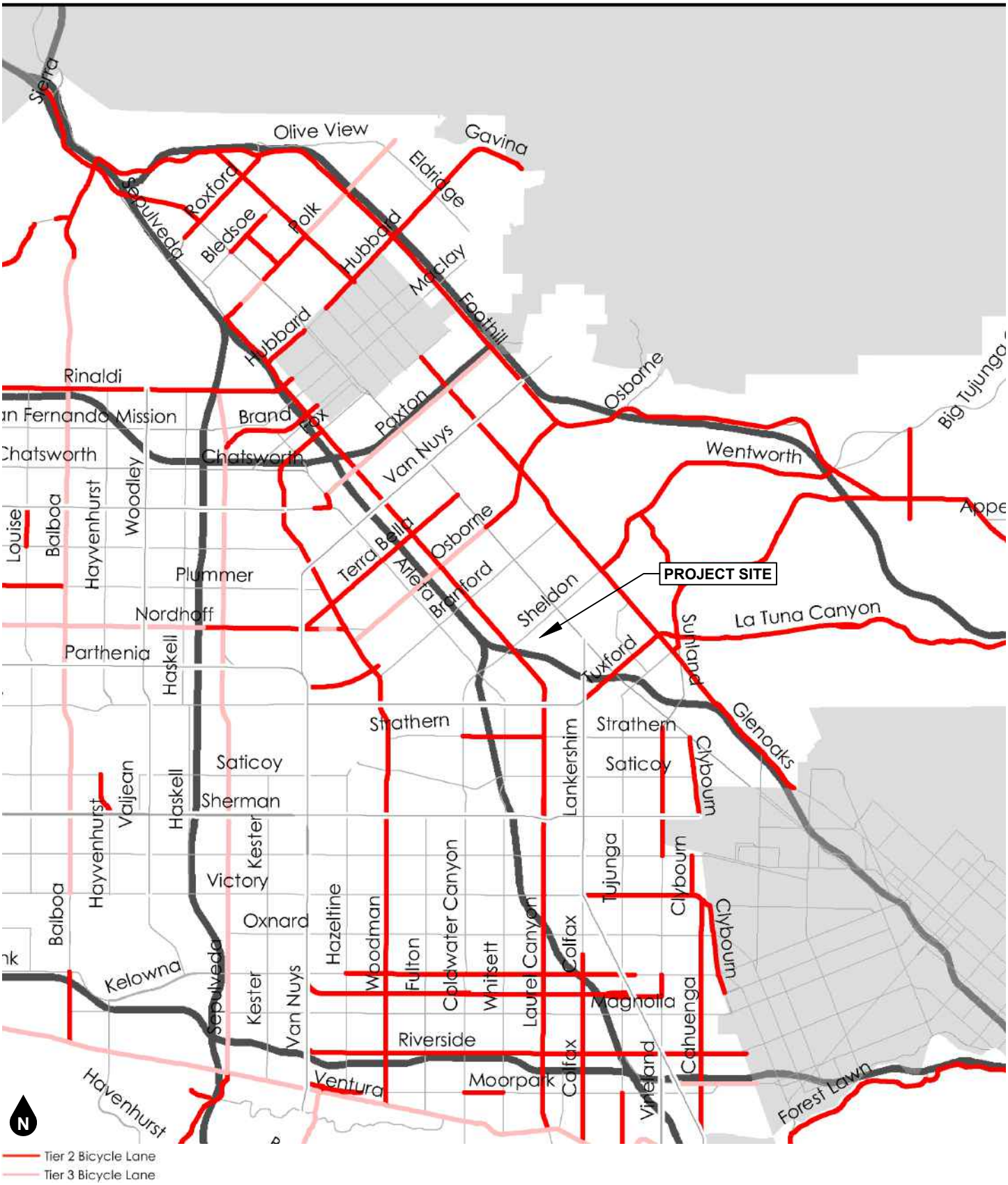


Figure 11
City of Los Angeles Mobility Plan
Bicycle Lane Network

Source: City of Los Angeles, Mobility Plan 2035

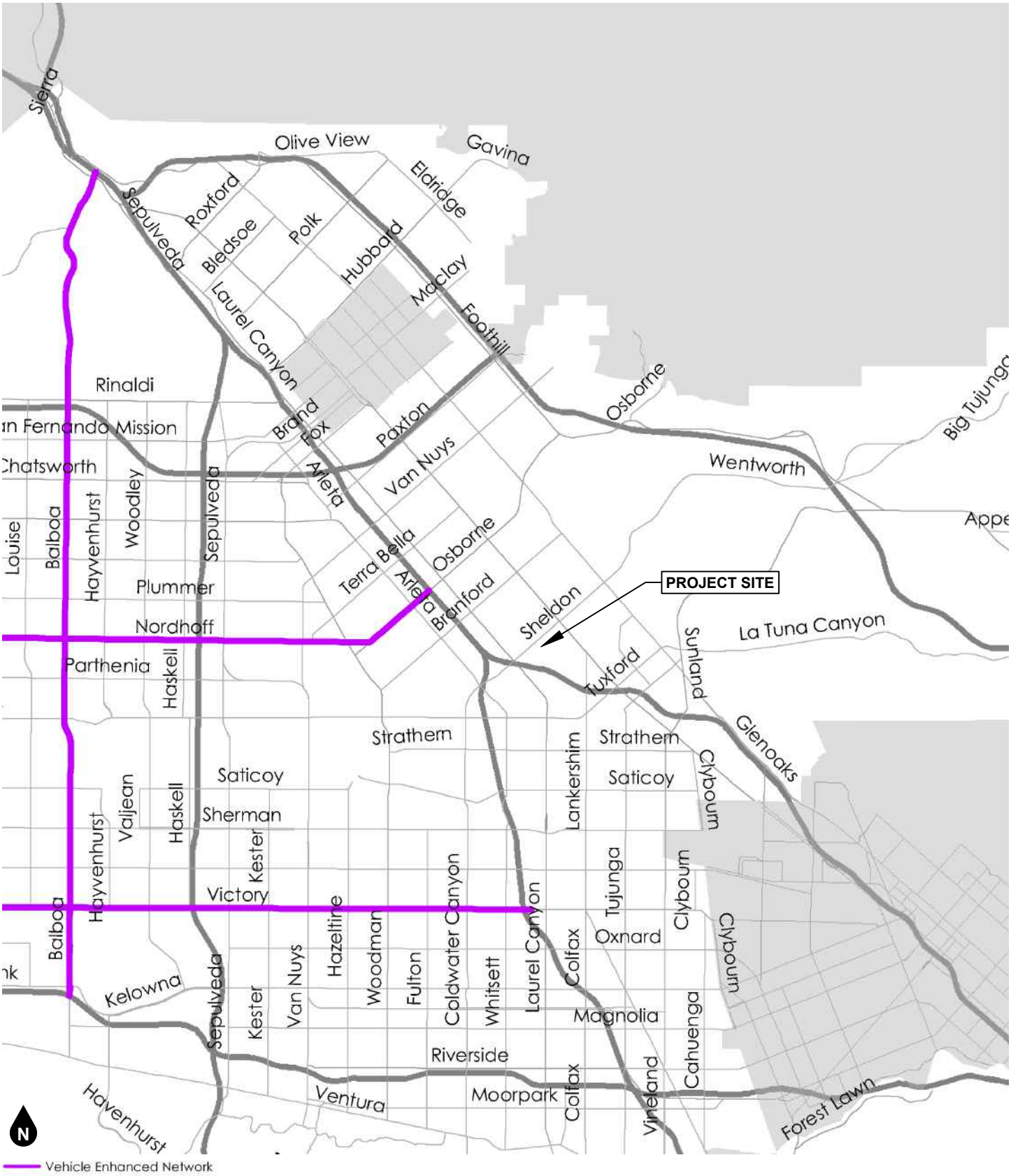


Figure 12
City of Los Angeles Mobility Plan
Vehicle Enhanced Network

Source: City of Los Angeles, Mobility Plan 2035

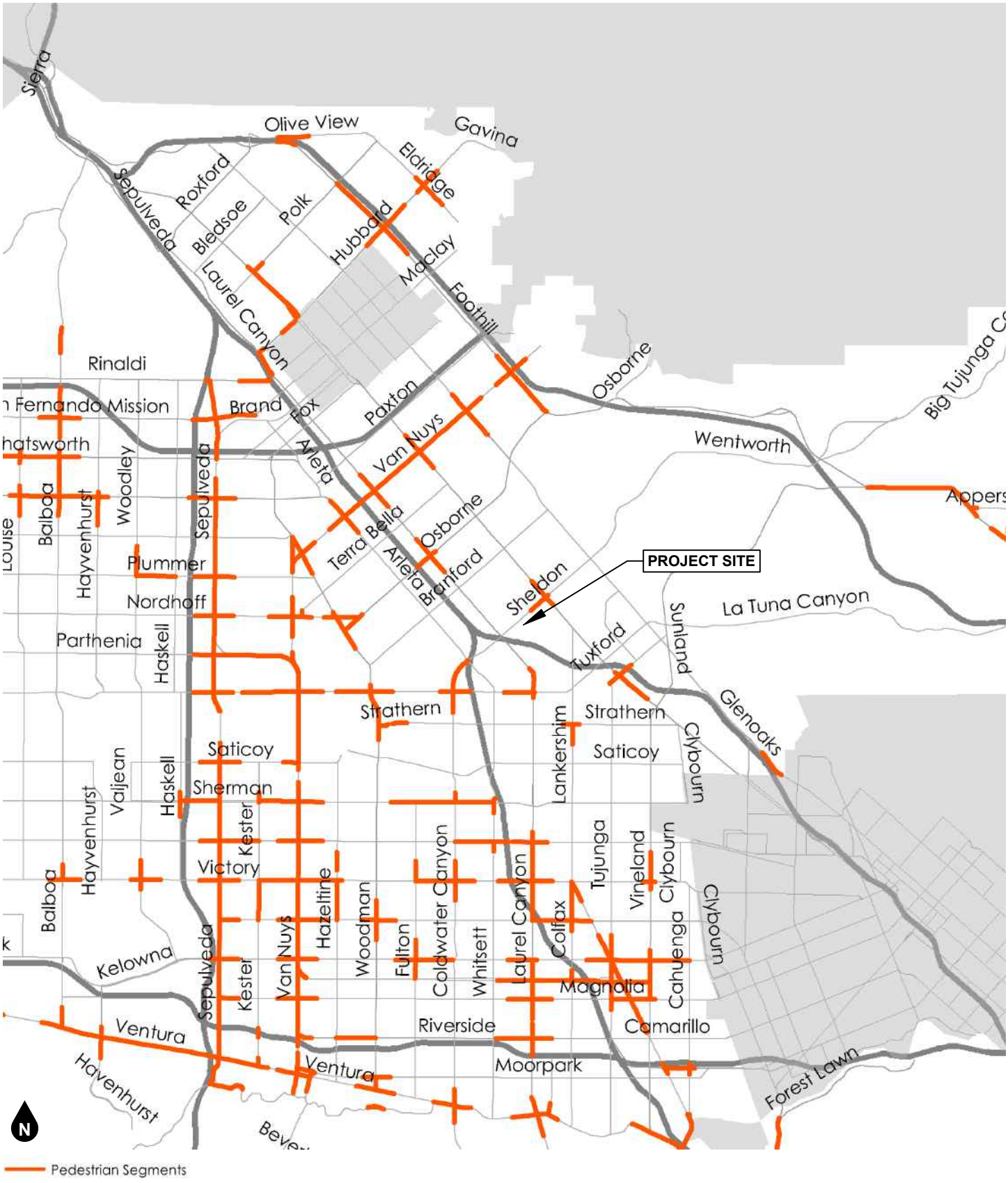
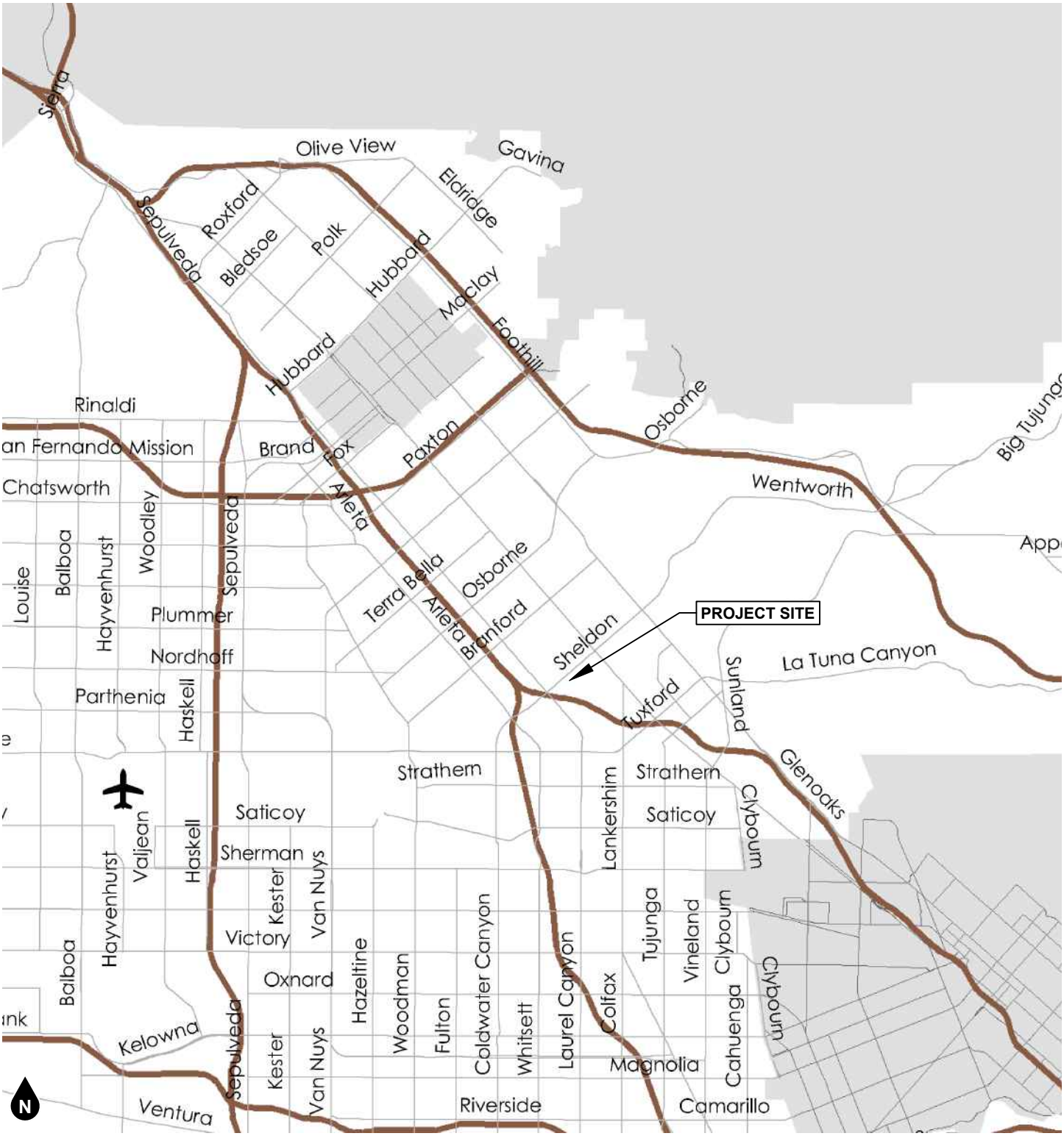


Figure 13
City of Los Angeles Mobility Plan
Pedestrian Enhanced Districts

Source: City of Los Angeles, Mobility Plan 2035



Source: City of Los Angeles, Mobility Plan 2035

Figure 16
City of Los Angeles Mobility Plan
Goods Movement

Figure 15
City of Los Angeles High Injury Network

Source: NavigateLA

PEDESTRIAN SAFETY IMPACT ASSESSMENT

Standard Conditions for Pedestrian Safety

LAUSD applies Standard Conditions (SCs) for minimizing impacts to pedestrian safety as outlined in the SUP SPEIR. The following is a summary of each SC relating to Pedestrian Safety and its applicability to the Project:

Reference #	Topic	Trigger for Compliance	Trigger Met?
SC-PED-1	Pedestrian Safety Analysis	Increase student capacity by more than 25% or 10 classrooms	NO – the Project is not anticipated to increase student capacity by more than 25% or 10 classrooms
SC-PED-2	Pedestrian Safety Analysis	New campus, new pedestrian/vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms	NO – the Project does not involve a new campus or vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms
SC-PED-3	Pedestrian Safety Analysis	New campus, new pedestrian/vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms	NO – the Project does not involve a new campus or vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms
SC-PED-4	Pedestrian Safety Analysis	New campus, new pedestrian/vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms	NO – the Project does not involve a new campus or vehicular right-of-ways, or an increase in student capacity by more than 25% or 10 classrooms
SC-PED-5	Safe Access to School	Construct bus loading area, student drop-off/pick-up area, and/or parking	NO – the Project does not involve construction of a bus loading area, student drop-off/pick-up area, and/or parking
SC-PED-6	Safe Access to School	Construct student drop-off/pick-up area	NO – the Project does not involve construction of student drop-off/pick-up area
SC-T-3	Traffic Analysis	Increase student capacity by more than 25% or 10 classrooms and/or generate additional traffic or shifts traffic patterns	NO – the Project is not anticipated to increase student capacity by more than 25% or 10 classrooms and/or generate additional traffic or shifts traffic patterns
SC-T-4	Construction Traffic	Large construction equipment required to use public roadways	YES – the Project shall implement SC-T-4 (see Transportation and Circulation Impact Assessment)

Impact Assessment

In accordance with the SUP SPEIR, the significance of project impacts to Pedestrian Safety is evaluated based on whether the project would:

a) Substantially increase vehicular and/or pedestrian safety hazards due to a design feature or incompatible uses?

Less Than Significant Impact

Construction

The District would implement SC-T-4 to avoid conflicts between construction activities and students, which would require the Construction Contractor to prepare a Construction Worksite Traffic Control Plan prior to commencement of construction (see Transportation and Circulation Impact Assessment). This plan would establish methods to avoid conflicts between the construction traffic and the existing vehicle, pedestrian, and bicycle traffic on the Campus and in the neighborhood. The District's construction BMPs, identified in the Construction Worksite Traffic Control Plan, would include the notification requirements, approved haul

routes, hours of construction, protective devices (e.g., pedestrian detours, covered walkways, etc.), warning signs, and access to transit stops and other adjacent properties.

The scope of work is entirely on VOCES and does not include sidewalk improvements or changes to pedestrian/vehicular rights-of-way. The Construction Contractor would work closely with the school administration to coordinate activities and ensure students and pedestrians remain safe during all construction activities. With the implementation of SC-T-4 impacts would be less than significant, and no mitigation or further analysis would be required.

Operation

Following the completion of construction activities, pedestrian access to the Campus would not change. Students would continue to use the main entrance on Telfair Avenue, with additional access points along Sheldon Street and Haddon Avenue. However, the proposed Project does include several elements to ensure that the Campus would comply with various federal, State, and local statutory and regulatory requirements. This includes the development of accessible paths of travel and accessible route signage across the Campus that adheres to the ADA and the California Building Code (CBC).

The proposed Project would also involve the restriping of an adjacent parking lot to improve accessibility, safety, and parking efficiency (e.g., ADA-compliant spaces, optimized layout). The restriped parking lot will remain in its existing location separated from drop-off, pick-up, and bus loading areas. Operational impacts associated with the new field and ancillary improvements would be less than significant, and no mitigation or further analysis is required.

b) Create unsafe routes to schools for students walking from local neighborhoods?

Less Than Significant Impact

During construction, the contractors would be required to submit and implement a Construction Worksite Traffic Control Plan to OEHS for review in accordance with SC-T-4. This plan would ensure pedestrian safety measures, access, and warning signs during construction are properly implemented. With the implementation of SC-T-4 and the compliance with existing regulations and programs, the impacts to students walking from local neighborhoods would be reduced to less than significant during construction.

The Project is located within the Campus and it would not result in changes to off-site circulation. The proposed multipurpose athletic field would replace existing recreational areas (existing field, open paving, and handball courts) and would not result in changes to the internal site circulation. Therefore, impacts to existing routes to school would be less than significant and no mitigation or further analysis is required.

c) Be located on a site that is adjacent to or near a major arterial roadway or freeway that may pose a safety hazard?

Less Than Significant Impact

The Project site is approximately one-quarter mile north of the I-5 Freeway and 0.8 miles north of the Hollywood Freeway (SR-170). The nearest four-lane divided arterial roadway to the Project site is Laurel Canyon Boulevard, approximately one-quarter mile south of the Project site, classified as an Avenue I roadway in the City of Los Angeles Mobility Plan.[3] It is noted that Sheldon Street is also a four-lane arterial with intermittent left turn lanes running along the northern Project site boundary, classified as an Avenue II roadway in the in the City of Los Angeles Mobility Plan;[3] however, the Project site's location is a characteristic inherent to the existing VOCES campus. Additionally, this segment of Sheldon Street currently has posted

[3] Los Angeles Department of City Planning. 2016. Mobility Plan 2035. https://planning.lacity.gov/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf

school speed zone limits of 25 miles per hour and two signalized crossings with high-visibility crosswalk markings at the intersections of Sheldon Street/Haddon Avenue and Sheldon Street/Telfair Avenue. The proposed Project itself would not result in a new campus or exposure of additional students near a major arterial roadway or freeway that may pose a safety hazard. No impacts would occur, and no mitigation or further analysis is required.

TRANSPORTATION AND CIRCULATION IMPACT ASSESSMENT

Standard Conditions for Transportation and Circulation

LAUSD applies SCs for minimizing impacts to transportation and circulation as outlined in the SUP SPEIR. The following is a summary of each SC relating to Pedestrian Safety and its applicability to the Project:

Reference #	Topic	Trigger for Compliance	Trigger Met?
SC-T-1	Traffic Analysis	Increase student capacity by more than 25% or 10 classrooms and additional traffic	NO – the Project is not anticipated to increase student capacity by more than 25% or 10 classrooms and additional traffic
SC-T-2	Vehicular Access and Parking	Construction of parking, and/or vehicular or pedestrian access	NO – the Project does not involve construction of parking, and/or vehicular or pedestrian access
SC-T-3	Traffic Analysis	Increase student capacity by more than 25% or 10 classrooms and/or generates additional traffic or shifts traffic patterns	NO – the Project is not anticipated to increase student capacity by more than 25% or 10 classrooms and/or generate additional traffic or shifts traffic patterns
SC-T-4	Construction Traffic	Large construction equipment required to use public roadways	YES - LAUSD shall require its Construction Contractors to submit a Construction Worksite Traffic Control Plan to OEHS for review prior to construction. The plan will show the location of any haul routes, hours of operation, protective devices, warning signs, access to abutting properties and applicable transportation related safety measures as required by local and State agencies. LAUSD shall encourage its Construction Contractor to limit construction-related trucks to off-peak commute periods.
SC-T-5	Vehicle Miles Traveled	Large-scale new construction (10,000 square feet or more) on new property or existing campus	NO – the Project does not involve large-scale new construction (10,000 square feet or more) on new property or existing campus. Additionally, the project is not anticipated to increase student capacity or VMT.

Impact Assessment

In accordance with the SUP SPEIR, the significance of project impacts to Transportation and Circulation is evaluated based on whether the project would:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than Significant Impact

Level of service standards established by jurisdictions/agencies are intended to regulate long-term traffic increases associated with new development and do not apply to short-term, temporary traffic increases that

occur during construction. School capacity and long-term employment would remain the same following the proposed modernization activities, and there would be no permanent increase in traffic generated by the proposed Project. Potential impacts associated with the proposed Project would be limited to construction activities. Specifically, increased vehicle trips and potential congestion generated by construction-related passenger vehicles and heavy haul trucks would cease when construction is complete, and implementation of the proposed Project would not result in any long-term, ongoing effects related to traffic and congestion. The Los Angeles County Congestion Management Program (CMP) requires evaluation of all CMP arterial monitoring intersections where the project adds 50 or more new peak hour trips. Additionally, the City of Los Angeles typically considers a project's non-CEQA impact to level of service standards for projects that are forecast to generate more than 250 daily trips.[4] However, because the proposed modernization activities would not increase student capacity or staff at the school, there would be no permanent increase in traffic generated by the proposed Project.

The Project does not conflict with the City of Los Angeles Mobility Plan 2035. As all project improvements will occur within the VOCES Campus, the Project would not directly conflict with a transportation plan, policy, or program adopted to support multimodal transportation options or public safety nor does the Project propose to make any voluntary modifications to the public right-of-way. No impacts would occur, and no mitigation or further analysis is required.

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), which pertains to vehicle miles travelled?

No Impact

According to the CEQA Guidelines Section 15064.3(b), generally, VMT is the most appropriate measure of transportation impacts. For the purposes of this section, VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. The section establishes that a land use project's effect on automobile delay shall not constitute a significant environmental impact.

Construction activities associated with the proposed Project would involve construction equipment and additional vehicles for construction workers to access the Project site. Construction equipment would primarily remain on site for the duration of the construction except for haul trucks. The District encourages carpooling for the construction workers getting to and from the Project site and would work with the contractor to minimize vehicle trips to the extent feasible. Construction equipment and contractor travels to the Project site would be temporary in nature, ceasing at the completion of the proposed Project.

The proposed Project would not change the land use of the school, increase the capacity of the school, or change the attendance boundaries of the school. Because the proposed Project would not generate an increase in traffic or a change in traffic patterns; thus, the proposed Project would have no impact pertaining to VMT during operation of the proposed Project. No impacts would occur, and no mitigation or further analysis is required.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact

[4] Los Angeles Department of Transportation. August 2022. Transportation Assessment Guidelines. https://ladot.lacity.gov/sites/default/files/documents/2020-transportation-assessment-guidelines_final_2020.07.27_0.pdf

Construction

During construction, equipment, trucks, and workers would drive to and from the staging area on the Project site. Construction trips would be spread out throughout the workday and would not occur during peak traffic periods. Also, construction trips would not overlap with student drop-off and pickup. In accordance with SC-T-4, the District's Construction Contractor would prepare a Construction Worksite Traffic Control Plan prior to commencement of construction. This plan would establish methods to avoid conflicts between construction traffic and the existing vehicle, pedestrian, and bicycle traffic. The District's construction BMPs, identified in the construction worksite traffic control plan, would include the location of any haul routes, hours of operation, protective devices, warning signs, and access to abutting properties. Additionally, construction fencing and/or covered walkways would be installed around the Project site to separate construction zones from students and to ensure safety. The proposed Project construction would not create new hazards or conflicts and impacts related to vehicular, pedestrian, and bicycle safety would be less than significant; no mitigation or further analysis is required.

Operation

The proposed Project would not change the land use of the school, increase the capacity of the school, or change the attendance boundaries of the school and would therefore, not increase operational traffic on or around the Campus. The proposed Project would not alter the use of the Campus or drop off/pick up locations, and no new incompatible uses would be introduced. Therefore, no operational impacts would occur, and no mitigation or further analysis is required.

d) Result in inadequate emergency access?

Less than Significant Impact

The access and circulation features at the Project site would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. All access features are subject to and must satisfy State Fire Marshall design requirements. The proposed Project would not result in inadequate emergency access. Therefore, no impacts would occur, and no mitigation or further analysis is required.