Appendix A -1

Air Quality: CalEEMod Results

CalEEMod Defaults - Terraphase Equipment Estimates - With Client Feedback

Santa Rosa Project

Phase	Equipment Type	Number/Day	Hours/Day	Horsepower	Load Factor	Notes
Demolition						
	Concrete/Industrial Saws	1	3	3	0.73	Since demolition/Site prep & utilities overlap will assume no duplication of equipment, consolidate use max hours
	Excavators	1	7	158	0.38	
	Rubber Tired Dozers	1	2	367	0.4	
	Tractors/Loaders/Backhoes	1	7	84	0.37	
	Dumpers/Tenders	1	7	180	0.38	
Site Preparation and Utilities						
	Trenchers	1	4	49	0.41	
	Rubber Tired Loaders	1	4	124	0.36	
	Plate Compactors	1	6	8	0.43	
Grading						
	Graders	1	6	148	0.41	
	Rubber Tired Dozers	1	6	367	0.4	
	Tractors/Loaders/Backhoes	1	6	84	0.37	
	Rollers	1	5	80	0.38	
	Rubber Tired Loaders	1	4	124	0.36	
Building Construction						
	Cranes	1	8	367	0.29	6 days of crane, 8 hours per day
	Forklifts	1	2	82	0.2	
	Aerial Lifts	2	6	74	0.29	
	Tractors/Loaders/Backhoes	1	6	84	0.37	
	Air Compressors	1	4	78	0.48	up to 30 days total of air compressors
	Welders	1	8	46	0.45	20 working days of welding 8 hours per day
	Cement and Mortar Mixers	1	8	10	0.56	15 days of concrete pours, 8 hours per day
Paving						
	Pavers	1	8	81	0.42	5 paving days, 8 hours per day.
	Paving Equipment	1	8	130	0.36	
	Rollers	1	8	80	0.38	
	Rubber Tired Loaders	1	4	124	0.36	
	Tractors/Loaders/Backhoes	1	4	84	0.37	
	Plate Compactors	1	2	8	0.43	
	Sweepers/Scrubbers	1	2	85	0.39	
Architectural Coating						
	Air Compressors	1	6	5	0.45	Portable air compressor 5 hp
	Aerial Lifts -	1	8	74	0.29	Only used 14 days total
Landscaping						
	Skid Steer Loaders			65	0.36	1 day of skid steer for 6 hours total for this scope - insignificant - not modeled
	Tractors/Loaders/Backhoes	1	5	97	0.37	
	Trenchers	1	4	49	0.41	
	Dumpers/Tenders	1	6	180	0.38	8 days total for 6 hours per day
	Plate Compactors	1	4	8	0.43	9 days total for 4 hours per day on average

Assuming all equipment is Diesel Powered and that cleanest engines available will be used

Assume Tier 4 for most equipment other than plate compactors, air compressors and cement mortar mixers which CalEEMod didn't have Tier 4 EF's used average value Construction emissions were estimated using CalEEMod. The model defaults were used to represent the regional equipment fleet. For a conservative and forward-looking assessment, off-road equipment may alternatively be assumed to meet Tier 4 Final standards, consistent with current CARB regulations and anticipated fleet turnover for the 2026–2027 construction period.

Santa Rosa

Cal EEMod Phase Schedule

Phase	Equipment Type	Assumed Start	Assumed Stop	Notes
Demolition				
	Concrete/Industrial Saws	6/16/2026	7/8/2026	
	Dumpers/Tenders	6/16/2026	7/8/2026	
	Excavators	6/16/2026	7/8/2026	
	Rubber Tired Dozers	6/16/2026	7/8/2026	
	Tractors/Loaders/Backhoes	6/16/2026	7/8/2026	
Site Preparation and Utilities				
	Trenchers	6/16/2026	7/8/2026	
	Plate Compactors	6/16/2026	7/8/2026	
	Rubber Tired Loaders	6/16/2026	7/8/2026	
Grading				
	Graders	6/16/2026	7/8/2026	
	Rubber Tired Dozers	7/13/2026	7/17/2026	
	Tractors/Loaders/Backhoes	7/13/2026	7/17/2026	
	Rollers	7/13/2026	7/17/2026	
	Rubber Tired Loaders	7/13/2026	7/17/2026	
Building Construction				
	Forklifts	7/20/2026	4/1/2027	Entire construction duration
	Aerial Lifts	7/20/2026	4/1/2027	Entire construction duration
	Tractors/Loaders/Backhoes	7/20/2026	4/1/2027	Entire construction duration
	Cement and Mortar Mixers	7/20/2026	8/7/2026	15 working days; early concrete/ foundation work
	Cranes	8/10/2026	8/17/2026	6 working days; assumed during early structural/major lifts
	Welders	8/10/2026	9/4/2026	20 working days; assumed to overlap
	Air Compressors	8/10/2026	9/18/2026	Up to 30 working days; general early/mid construction support
Paving				CalEEMod Allows only one paving phase, so part is paving prep, other is paving phase
	Rubber Tired Loaders	5/3/2027	6/24/2027	Paving prep, grading, base/material handling
	Tractors/Loaders/Backhoes	5/3/2027	6/24/2027	Paving prep and subgrade/base work
	Plate Compactors	5/3/2027	7/1/2027	Prep through final edge/tight-area compaction
	Pavers	6/25/2027	7/1/2027	Final 5 working days of paving
	Paving Equipment	6/25/2027	7/1/2027	Final 5 working days of paving
	Rollers	6/25/2027	7/1/2027	Final 5 working days of paving
	Sweepers/Scrubbers	6/25/2027	7/1/2027	Final cleaning and paving support
Architectural Coating				
	Air Compressors	7/1/2027	10/1/2027	Assumed available throughout coating phase
	Aerial Lifts	7/12/2027	7/20/2027	Initial elevated coating work, 7 working days
	Aerial Lifts	9/22/2027	9/30/2027	Final touch-up/detail coating work7 working days
Landscaping				
	Tractors/Loaders/Backhoes	9/1/2027	10/1/2027	General landscaping support throughout phase
	Trenchers	9/1/2027	10/1/2027	Assumed throughout phase; no limiting note provided
	Dumpers/Tenders	9/1/2027	9/10/2027	8 working days; early material movement/site prep
	Plate Compactors	9/1/2027	9/13/2027	9 working days; early pathway/base/soil compaction

Santa Rosa Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Santa Rosa
Construction Start Date	6/16/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20000
Precipitation (days)	0.80000
Location	211 Ridgway Ave, Santa Rosa, CA 95401, USA
County	Sonoma-San Francisco
City	Santa Rosa
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	961
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.43

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	66.3000	1000sqft	0.88000	66,300.0	11,500.0	11,500.0	—	—

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

* 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.	16.4732	16.4401	16.6517	21.1843	0.09130	0.17764	9.88845	10.0661	0.17706	1.84937	2.02643	—	13,336.4	13,336.4	0.70108	1.79430	21.9319	13,905.5
Mit.	16.4732	16.4401	16.6517	21.1843	0.09130	0.17764	9.88845	10.0661	0.17706	1.84937	2.02643	—	13,336.4	13,336.4	0.70108	1.79430	21.9319	13,905.5
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.11196	9.07752	2.18608	5.63505	0.00715	0.01454	0.58298	0.59307	0.01252	0.13986	0.14995	—	1,217.23	1,217.23	0.04329	0.06877	0.06592	1,238.88
Mit.	9.11196	9.07752	2.18608	5.63505	0.00715	0.01454	0.58298	0.59307	0.01252	0.13986	0.14995	—	1,217.23	1,217.23	0.04329	0.06877	0.06592	1,238.88
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.98286	1.97489	1.90667	3.32103	0.00848	0.01750	0.68540	0.70291	0.01636	0.14921	0.16557	—	1,278.94	1,278.94	0.05960	0.13681	0.94332	1,322.14
Mit.	1.98286	1.97489	1.90667	3.32103	0.00848	0.01750	0.68540	0.70291	0.01636	0.14921	0.16557	—	1,278.94	1,278.94	0.05960	0.13681	0.94332	1,322.14

% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36187	0.36042	0.34797	0.60609	0.00155	0.00319	0.12509	0.12828	0.00299	0.02723	0.03022	—	211.743	211.743	0.00987	0.02265	0.15618	218.896
Mit.	0.36187	0.36042	0.34797	0.60609	0.00155	0.00319	0.12509	0.12828	0.00299	0.02723	0.03022	—	211.743	211.743	0.00987	0.02265	0.15618	218.896
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.16450	0.67654	16.6517	21.1843	0.09130	0.17764	9.88845	10.0661	0.17706	1.84937	2.02643	—	13,336.4	13,336.4	0.70108	1.79430	21.9319	13,905.5
2027	16.4732	16.4401	2.78892	10.6308	0.01357	0.02424	0.62835	0.65260	0.02385	0.15068	0.17453	—	1,845.01	1,845.01	0.06262	0.07598	2.72487	1,871.95
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.21127	0.18712	2.18608	5.17741	0.00715	0.01454	0.30675	0.32129	0.01252	0.07511	0.08763	—	1,073.87	1,073.87	0.04093	0.05808	0.04296	1,092.25
2027	9.11196	9.07752	2.16014	5.63505	0.00714	0.01252	0.58298	0.59307	0.01252	0.13986	0.14995	—	1,217.23	1,217.23	0.04329	0.06877	0.06592	1,238.88
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.16950	0.11930	1.90667	3.32103	0.00848	0.01750	0.68540	0.70291	0.01636	0.14921	0.16557	—	1,278.94	1,278.94	0.05960	0.13681	0.94332	1,322.14
2027	1.98286	1.97489	0.67111	2.05116	0.00264	0.00491	0.13347	0.13838	0.00488	0.03206	0.03694	—	398.114	398.114	0.01443	0.01724	0.25292	403.865
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03093	0.02177	0.34797	0.60609	0.00155	0.00319	0.12509	0.12828	0.00299	0.02723	0.03022	—	211.743	211.743	0.00987	0.02265	0.15618	218.896
2027	0.36187	0.36042	0.12248	0.37434	0.00048	0.00090	0.02436	0.02525	0.00089	0.00585	0.00674	—	65.9124	65.9124	0.00239	0.00285	0.04187	66.8645

2.2.2. Onsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.25951	0.25428	3.26003	14.3991	0.02458	0.05055	7.09406	7.14461	0.04997	1.07424	1.12421	—	2,381.67	2,381.67	0.09661	0.01932	0.00000	2,389.84
2027	16.2032	16.2032	2.27316	8.76187	0.01199	0.02343	0.00002	0.02343	0.02343	< 0.000005	0.02343	—	1,245.26	1,245.26	0.05051	0.01010	0.00000	1,249.53
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	0.00000	0.01051	0.01051	0.00000	0.01051	—	555.578	555.578	0.02254	0.00451	0.00000	557.485
2027	8.85033	8.85033	1.68128	3.88931	0.00513	0.01051	0.00000	0.01051	0.01051	0.00000	0.01051	—	555.537	555.537	0.02254	0.00451	0.00000	557.443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.04625	0.04534	0.74402	2.27379	0.00341	0.00774	0.35907	0.36680	0.00764	0.06380	0.07143	—	349.441	349.441	0.01417	0.00283	0.00000	350.640
2027	1.92340	1.92313	0.53663	1.49819	0.00216	0.00442	< 0.000005	0.00442	0.00439	< 0.000005	0.00439	—	217.973	217.973	0.00884	0.00177	0.00000	218.721
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00844	0.00827	0.13578	0.41497	0.00062	0.00141	0.06553	0.06694	0.00139	0.01164	0.01304	—	57.8539	57.8539	0.00235	0.00047	0.00000	58.0525
2027	0.35102	0.35097	0.09793	0.27342	0.00039	0.00081	< 0.000005	0.00081	0.00080	< 0.000005	0.00080	—	36.0879	36.0879	0.00146	0.00029	0.00000	36.2117

2.2.3. Offsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.90499	0.46310	14.6636	6.78522	0.06759	0.12875	2.79439	2.92148	0.12875	0.77513	0.90222	—	11,009.7	11,009.7	0.61055	1.77758	21.9319	11,576.6

2027	0.29162	0.25587	0.54943	3.01473	0.00212	0.00221	0.62834	0.63054	0.00221	0.15067	0.15288	—	862.991	862.991	0.02279	0.06801	2.72487	886.553
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13600	0.11185	0.50480	1.28810	0.00201	0.00402	0.30675	0.31078	0.00201	0.07511	0.07712	—	518.295	518.295	0.01840	0.05357	0.04296	534.763
2027	0.26163	0.22719	0.59230	2.48169	0.00201	0.00201	0.58298	0.58499	0.00201	0.13986	0.14187	—	769.990	769.990	0.02515	0.06514	0.06592	790.097
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12325	0.07396	1.16265	1.04724	0.00507	0.00977	0.32634	0.33610	0.00872	0.08541	0.09414	—	929.498	929.498	0.04543	0.13398	0.94332	971.501
2027	0.05946	0.05176	0.13448	0.55298	0.00049	0.00049	0.13347	0.13396	0.00049	0.03206	0.03255	—	180.141	180.141	0.00559	0.01547	0.25292	185.145
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02249	0.01350	0.21218	0.19112	0.00093	0.00178	0.05956	0.06134	0.00159	0.01559	0.01718	—	153.889	153.889	0.00752	0.02218	0.15618	160.843
2027	0.01085	0.00945	0.02454	0.10092	0.00009	0.00009	0.02436	0.02445	0.00009	0.00585	0.00594	—	29.8245	29.8245	0.00093	0.00256	0.04187	30.6528

2.2.4. Total Construction Emissions by Year, Mitigated

Includes both onsite and offsite emissions.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.16450	0.67654	16.6517	21.1843	0.09130	0.17764	9.88845	10.0661	0.17706	1.84937	2.02643	—	13,336.4	13,336.4	0.70108	1.79430	21.9319	13,905.5
2027	16.4732	16.4401	2.78892	10.6308	0.01357	0.02424	0.62835	0.65260	0.02385	0.15068	0.17453	—	1,845.01	1,845.01	0.06262	0.07598	2.72487	1,871.95
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.21127	0.18712	2.18608	5.17741	0.00715	0.01454	0.30675	0.32129	0.01252	0.07511	0.08763	—	1,073.87	1,073.87	0.04093	0.05808	0.04296	1,092.25
2027	9.11196	9.07752	2.16014	5.63505	0.00714	0.01252	0.58298	0.59307	0.01252	0.13986	0.14995	—	1,217.23	1,217.23	0.04329	0.06877	0.06592	1,238.88
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.16950	0.11930	1.90667	3.32103	0.00848	0.01750	0.68540	0.70291	0.01636	0.14921	0.16557	—	1,278.94	1,278.94	0.05960	0.13681	0.94332	1,322.14

2027	1.98286	1.97489	0.67111	2.05116	0.00264	0.00491	0.13347	0.13838	0.00488	0.03206	0.03694	—	398.114	398.114	0.01443	0.01724	0.25292	403.865
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03093	0.02177	0.34797	0.60609	0.00155	0.00319	0.12509	0.12828	0.00299	0.02723	0.03022	—	211.743	211.743	0.00987	0.02265	0.15618	218.896
2027	0.36187	0.36042	0.12248	0.37434	0.00048	0.00090	0.02436	0.02525	0.00089	0.00585	0.00674	—	65.9124	65.9124	0.00239	0.00285	0.04187	66.8645

2.2.5. Onsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.25951	0.25428	3.26003	14.3991	0.02458	0.05055	7.09406	7.14461	0.04997	1.07424	1.12421	—	2,381.67	2,381.67	0.09661	0.01932	0.00000	2,389.84
2027	16.2032	16.2032	2.27316	8.76187	0.01199	0.02343	0.00002	0.02343	0.02343	< 0.000005	0.02343	—	1,245.26	1,245.26	0.05051	0.01010	0.00000	1,249.53
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	0.00000	0.01051	0.01051	0.00000	0.01051	—	555.578	555.578	0.02254	0.00451	0.00000	557.485
2027	8.85033	8.85033	1.68128	3.88931	0.00513	0.01051	0.00000	0.01051	0.01051	0.00000	0.01051	—	555.537	555.537	0.02254	0.00451	0.00000	557.443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.04625	0.04534	0.74402	2.27379	0.00341	0.00774	0.35907	0.36680	0.00764	0.06380	0.07143	—	349.441	349.441	0.01417	0.00283	0.00000	350.640
2027	1.92340	1.92313	0.53663	1.49819	0.00216	0.00442	< 0.000005	0.00442	0.00439	< 0.000005	0.00439	—	217.973	217.973	0.00884	0.00177	0.00000	218.721
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00844	0.00827	0.13578	0.41497	0.00062	0.00141	0.06553	0.06694	0.00139	0.01164	0.01304	—	57.8539	57.8539	0.00235	0.00047	0.00000	58.0525
2027	0.35102	0.35097	0.09793	0.27342	0.00039	0.00081	< 0.000005	0.00081	0.00080	< 0.000005	0.00080	—	36.0879	36.0879	0.00146	0.00029	0.00000	36.2117

2.2.6. Offsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.90499	0.46310	14.6636	6.78522	0.06759	0.12875	2.79439	2.92148	0.12875	0.77513	0.90222	—	11,009.7	11,009.7	0.61055	1.77758	21.9319	11,576.6
2027	0.29162	0.25587	0.54943	3.01473	0.00212	0.00221	0.62834	0.63054	0.00221	0.15067	0.15288	—	862.991	862.991	0.02279	0.06801	2.72487	886.553
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13600	0.11185	0.50480	1.28810	0.00201	0.00402	0.30675	0.31078	0.00201	0.07511	0.07712	—	518.295	518.295	0.01840	0.05357	0.04296	534.763
2027	0.26163	0.22719	0.59230	2.48169	0.00201	0.00201	0.58298	0.58499	0.00201	0.13986	0.14187	—	769.990	769.990	0.02515	0.06514	0.06592	790.097
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12325	0.07396	1.16265	1.04724	0.00507	0.00977	0.32634	0.33610	0.00872	0.08541	0.09414	—	929.498	929.498	0.04543	0.13398	0.94332	971.501
2027	0.05946	0.05176	0.13448	0.55298	0.00049	0.00049	0.13347	0.13396	0.00049	0.03206	0.03255	—	180.141	180.141	0.00559	0.01547	0.25292	185.145
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02249	0.01350	0.21218	0.19112	0.00093	0.00178	0.05956	0.06134	0.00159	0.01559	0.01718	—	153.889	153.889	0.00752	0.02218	0.15618	160.843
2027	0.01085	0.00945	0.02454	0.10092	0.00009	0.00009	0.02436	0.02445	0.00009	0.00585	0.00594	—	29.8245	29.8245	0.00093	0.00256	0.04187	30.6528

2.3. Operations 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.	6.02480	5.71392	3.32678	24.7040	0.04936	0.10461	3.91151	4.01612	0.10098	0.99571	1.09669	4.70451	5,558.58	5,563.29	4.33751	0.24921	16.0898	5,762.08
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.35393	5.06316	3.68036	22.1046	0.04704	0.09952	3.91151	4.01104	0.09714	0.99571	1.09285	4.70451	5,329.68	5,334.39	4.37735	0.27024	0.66667	5,525.02

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.73725	4.49061	2.91844	17.7755	0.03764	0.09289	3.01838	3.11126	0.09043	0.76836	0.85879	4.70451	4,365.85	4,370.55	4.29954	0.20519	5.53458	4,544.72
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.86455	0.81954	0.53262	3.24402	0.00687	0.01695	0.55085	0.56781	0.01650	0.14023	0.15673	0.77888	722.816	723.595	0.71184	0.03397	0.91631	752.431

2.4. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Area	2.12139	2.08182	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	6.02480	5.71392	3.32678	24.7040	0.04936	0.10461	3.91151	4.01612	0.10098	0.99571	1.09669	4.70451	5,558.58	5,563.29	4.33751	0.24921	16.0898	5,762.08
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Area	1.60831	1.60831	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	5.35393	5.06316	3.68036	22.1046	0.04704	0.09952	3.91151	4.01104	0.09714	0.99571	1.09285	4.70451	5,329.68	5,334.39	4.37735	0.27024	0.66667	5,525.02

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.78994	2.60580	2.12487	15.6969	0.03287	0.03096	3.01838	3.04934	0.02912	0.76836	0.79748	—	3,360.33	3,360.33	0.20466	0.19179	5.27847	3,427.88
Area	1.86134	1.84182	0.01197	1.42198	0.00008	0.00253	—	0.00253	0.00191	—	0.00191	—	5.84755	5.84755	0.00025	0.00005	—	5.86863
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	4.73725	4.49061	2.91844	17.7755	0.03764	0.09289	3.01838	3.11126	0.09043	0.76836	0.85879	4.70451	4,365.85	4,370.55	4.29954	0.20519	5.53458	4,544.72
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525
Area	0.33969	0.33613	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162
Energy	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	168.217	168.217	0.01590	0.00056	—	168.782
Water	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240
Total	0.86455	0.81954	0.53262	3.24402	0.00687	0.01695	0.55085	0.56781	0.01650	0.14023	0.15673	0.77888	722.816	723.595	0.71184	0.03397	0.91631	752.431

2.5. Operations Emissions by Sector, Mitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Area	2.12139	2.08182	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	6.02480	5.71392	3.32678	24.7040	0.04936	0.10461	3.91151	4.01612	0.10098	0.99571	1.09669	4.70451	5,558.58	5,563.29	4.33751	0.24921	16.0898	5,762.08
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Area	1.60831	1.60831	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	5.35393	5.06316	3.68036	22.1046	0.04704	0.09952	3.91151	4.01104	0.09714	0.99571	1.09285	4.70451	5,329.68	5,334.39	4.37735	0.27024	0.66667	5,525.02
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.78994	2.60580	2.12487	15.6969	0.03287	0.03096	3.01838	3.04934	0.02912	0.76836	0.79748	—	3,360.33	3,360.33	0.20466	0.19179	5.27847	3,427.88
Area	1.86134	1.84182	0.01197	1.42198	0.00008	0.00253	—	0.00253	0.00191	—	0.00191	—	5.84755	5.84755	0.00025	0.00005	—	5.86863
Energy	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	1,016.04	1,016.04	0.09603	0.00339	—	1,019.45
Water	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	4.73725	4.49061	2.91844	17.7755	0.03764	0.09289	3.01838	3.11126	0.09043	0.76836	0.85879	4.70451	4,365.85	4,370.55	4.29954	0.20519	5.53458	4,544.72
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525
Area	0.33969	0.33613	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162
Energy	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	168.217	168.217	0.01590	0.00056	—	168.782
Water	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240
Total	0.86455	0.81954	0.53262	3.24402	0.00687	0.01695	0.55085	0.56781	0.01650	0.14023	0.15673	0.77888	722.816	723.595	0.71184	0.03397	0.91631	752.431

3. Construction Emissions Details

3.1. Demolition (2026)

3.1.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19377	0.19377	1.37121	12.0582	0.02129	0.03748	—	0.03748	0.03748	—	0.03748	—	2,043.35	2,043.35	0.08289	0.01658	—	2,050.37
Demolition	—	—	—	—	—	—	7.09203	7.09203	—	1.07394	1.07394	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00903	0.00903	0.06386	0.56162	0.00099	0.00175	—	0.00175	0.00175	—	0.00175	—	95.1699	95.1699	0.00386	0.00077	—	95.4965
Demolition	—	—	—	—	—	—	0.33031	0.33031	—	0.05002	0.05002	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.00165	0.00165	0.01166	0.10250	0.00018	0.00032	—	0.00032	0.00032	—	0.00032	—	15.7565	15.7565	0.00064	0.00013	—	15.8105
Demolition	—	—	—	—	—	—	0.06028	0.06028	—	0.00913	0.00913	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06320	0.05800	0.04120	0.68748	0.00000	0.00000	0.12400	0.12400	0.00000	0.02906	0.02906	—	128.296	128.296	0.00265	0.00486	0.50625	130.317
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.72819	0.18276	12.9789	5.17155	0.05997	0.11423	2.34436	2.45859	0.11423	0.65748	0.77171	—	9,672.86	9,672.86	0.53971	1.57345	19.0294	10,174.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00282	0.00258	0.00234	0.02756	0.00000	0.00000	0.00577	0.00577	0.00000	0.00135	0.00135	—	5.61343	5.61343	0.00014	0.00024	0.01018	5.69913
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.03378	0.00838	0.62697	0.24166	0.00279	0.00532	0.10915	0.11447	0.00532	0.03061	0.03593	—	450.549	450.549	0.02514	0.07328	0.38419	473.400
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00051	0.00047	0.00043	0.00503	0.00000	0.00000	0.00105	0.00105	0.00000	0.00025	0.00025	—	0.92937	0.92937	0.00002	0.00004	0.00169	0.94356
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00617	0.00153	0.11442	0.04410	0.00051	0.00097	0.01992	0.02089	0.00097	0.00559	0.00656	—	74.5935	74.5935	0.00416	0.01213	0.06361	78.3767

3.1.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19377	0.19377	1.37121	12.0582	0.02129	0.03748	—	0.03748	0.03748	—	0.03748	—	2,043.35	2,043.35	0.08289	0.01658	—	2,050.37
Demolition	—	—	—	—	—	—	7.09203	7.09203	—	1.07394	1.07394	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00903	0.00903	0.06386	0.56162	0.00099	0.00175	—	0.00175	0.00175	—	0.00175	—	95.1699	95.1699	0.00386	0.00077	—	95.4965
Demolition	—	—	—	—	—	—	0.33031	0.33031	—	0.05002	0.05002	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00165	0.00165	0.01166	0.10250	0.00018	0.00032	—	0.00032	0.00032	—	0.00032	—	15.7565	15.7565	0.00064	0.00013	—	15.8105
Demolition	—	—	—	—	—	—	0.06028	0.06028	—	0.00913	0.00913	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06320	0.05800	0.04120	0.68748	0.00000	0.00000	0.12400	0.12400	0.00000	0.02906	0.02906	—	128.296	128.296	0.00265	0.00486	0.50625	130.317
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.72819	0.18276	12.9789	5.17155	0.05997	0.11423	2.34436	2.45859	0.11423	0.65748	0.77171	—	9,672.86	9,672.86	0.53971	1.57345	19.0294	10,174.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00282	0.00258	0.00234	0.02756	0.00000	0.00000	0.00577	0.00577	0.00000	0.00135	0.00135	—	5.61343	5.61343	0.00014	0.00024	0.01018	5.69913
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.03378	0.00838	0.62697	0.24166	0.00279	0.00532	0.10915	0.11447	0.00532	0.03061	0.03593	—	450.549	450.549	0.02514	0.07328	0.38419	473.400
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00051	0.00047	0.00043	0.00503	0.00000	0.00000	0.00105	0.00105	0.00000	0.00025	0.00025	—	0.92937	0.92937	0.00002	0.00004	0.00169	0.94356
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00617	0.00153	0.11442	0.04410	0.00051	0.00097	0.01992	0.02089	0.00097	0.00559	0.00656	—	74.5935	74.5935	0.00416	0.01213	0.06361	78.3767

3.2. Site Preparation (2026)

3.2.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.06573	0.06051	0.77807	2.34081	0.00329	0.01307	—	0.01307	0.01249	—	0.01249	—	338.314	338.314	0.01372	0.00274	—	339.475
Dust From Material Movement	—	—	—	—	—	—	0.00203	0.00203	—	0.00031	0.00031	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00306	0.00282	0.03624	0.10902	0.00015	0.00061	—	0.00061	0.00058	—	0.00058	—	15.7571	15.7571	0.00064	0.00013	—	15.8112
Dust From Material Movement	—	—	—	—	—	—	0.00009	0.00009	—	0.00001	0.00001	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00056	0.00051	0.00661	0.01990	0.00003	0.00011	—	0.00011	0.00011	—	0.00011	—	2.60876	2.60876	0.00011	0.00002	—	2.61772
Dust From Material Movement	—	—	—	—	—	—	0.00002	0.00002	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03160	0.02900	0.02060	0.34374	0.00000	0.00000	0.06200	0.06200	0.00000	0.01453	0.01453	—	64.1480	64.1480	0.00132	0.00243	0.25313	65.1585
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.08201	0.02058	1.46174	0.58245	0.00675	0.01286	0.26403	0.27690	0.01286	0.07405	0.08691	—	1,089.40	1,089.40	0.06079	0.17721	2.14318	1,145.88
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00141	0.00129	0.00117	0.01378	0.00000	0.00000	0.00289	0.00289	0.00000	0.00068	0.00068	—	2.80671	2.80671	0.00007	0.00012	0.00509	2.84957
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00380	0.00094	0.07061	0.02722	0.00031	0.00060	0.01229	0.01289	0.00060	0.00345	0.00405	—	50.7430	50.7430	0.00283	0.00825	0.04327	53.3166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00026	0.00024	0.00021	0.00251	0.00000	0.00000	0.00053	0.00053	0.00000	0.00012	0.00012	—	0.46468	0.46468	0.00001	0.00002	0.00084	0.47178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00069	0.00017	0.01289	0.00497	0.00006	0.00011	0.00224	0.00235	0.00011	0.00063	0.00074	—	8.40108	8.40108	0.00047	0.00137	0.00716	8.82717

3.2.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06573	0.06051	0.77807	2.34081	0.00329	0.01307	—	0.01307	0.01249	—	0.01249	—	338.314	338.314	0.01372	0.00274	—	339.475

Dust From Material Movement	—	—	—	—	—	—	0.00203	0.00203	—	0.00031	0.00031	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00306	0.00282	0.03624	0.10902	0.00015	0.00061	—	0.00061	0.00058	—	0.00058	—	15.7571	15.7571	0.00064	0.00013	—	15.8112
Dust From Material Movement	—	—	—	—	—	—	0.00009	0.00009	—	0.00001	0.00001	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00056	0.00051	0.00661	0.01990	0.00003	0.00011	—	0.00011	0.00011	—	0.00011	—	2.60876	2.60876	0.00011	0.00002	—	2.61772
Dust From Material Movement	—	—	—	—	—	—	0.00002	0.00002	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.4. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03160	0.02900	0.02060	0.34374	0.00000	0.00000	0.06200	0.06200	0.00000	0.01453	0.01453	—	64.1480	64.1480	0.00132	0.00243	0.25313	65.1585
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.08201	0.02058	1.46174	0.58245	0.00675	0.01286	0.26403	0.27690	0.01286	0.07405	0.08691	—	1,089.40	1,089.40	0.06079	0.17721	2.14318	1,145.88
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00141	0.00129	0.00117	0.01378	0.00000	0.00000	0.00289	0.00289	0.00000	0.00068	0.00068	—	2.80671	2.80671	0.00007	0.00012	0.00509	2.84957
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00380	0.00094	0.07061	0.02722	0.00031	0.00060	0.01229	0.01289	0.00060	0.00345	0.00405	—	50.7430	50.7430	0.00283	0.00825	0.04327	53.3166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00026	0.00024	0.00021	0.00251	0.00000	0.00000	0.00053	0.00053	0.00000	0.00012	0.00012	—	0.46468	0.46468	0.00001	0.00002	0.00084	0.47178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00069	0.00017	0.01289	0.00497	0.00006	0.00011	0.00224	0.00235	0.00011	0.00063	0.00074	—	8.40108	8.40108	0.00047	0.00137	0.00716	8.82717

3.3. Landscaping site prep (2027)

3.3.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06531	0.06182	0.36092	2.45769	0.00683	0.01396	—	0.01396	0.01357	—	0.01357	—	534.779	534.779	0.02169	0.00434	—	536.614

Dust From Material Movement	—	—	—	—	—	—	0.00002	0.00002	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00161	0.00152	0.00890	0.06060	0.00017	0.00034	—	0.00034	0.00033	—	0.00033	—	13.1863	13.1863	0.00053	0.00011	—	13.2316
Dust From Material Movement	—	—	—	—	—	—	< 0.000005	< 0.000005	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00029	0.00028	0.00162	0.01106	0.00003	0.00006	—	0.00006	0.00006	—	0.00006	—	2.18315	2.18315	0.00009	0.00002	—	2.19064
Dust From Material Movement	—	—	—	—	—	—	< 0.000005	< 0.000005	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02040	0.01867	0.01233	0.21524	0.00000	0.00000	0.04133	0.04133	0.00000	0.00969	0.00969	—	41.9936	41.9936	0.00077	0.00162	0.15492	42.6507
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00125	0.00031	0.02134	0.00879	0.00010	0.00020	0.00402	0.00422	0.00020	0.00113	0.00132	—	16.2260	16.2260	0.00092	0.00260	0.03012	17.0544
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00048	0.00044	0.00038	0.00457	0.00000	0.00000	0.00102	0.00102	0.00000	0.00024	0.00024	—	0.97282	0.97282	0.00002	0.00004	0.00165	0.98779
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00003	0.00001	0.00054	0.00022	< 0.000005	< 0.000005	0.00010	0.00010	< 0.000005	0.00003	0.00003	—	0.40013	0.40013	0.00002	0.00006	0.00032	0.42013
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00009	0.00008	0.00007	0.00083	0.00000	0.00000	0.00019	0.00019	0.00000	0.00004	0.00004	—	0.16106	0.16106	< 0.000005	0.00001	0.00027	0.16354
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00001	< 0.000005	0.00010	0.00004	< 0.000005	< 0.000005	0.00002	0.00002	< 0.000005	0.00001	0.00001	—	0.06625	0.06625	< 0.000005	0.00001	0.00005	0.06956

3.3.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06531	0.06182	0.36092	2.45769	0.00683	0.01396	—	0.01396	0.01357	—	0.01357	—	534.779	534.779	0.02169	0.00434	—	536.614

Dust From Material Movement	—	—	—	—	—	—	0.00002	0.00002	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00161	0.00152	0.00890	0.06060	0.00017	0.00034	—	0.00034	0.00033	—	0.00033	—	13.1863	13.1863	0.00053	0.00011	—	13.2316
Dust From Material Movement	—	—	—	—	—	—	< 0.000005	< 0.000005	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00029	0.00028	0.00162	0.01106	0.00003	0.00006	—	0.00006	0.00006	—	0.00006	—	2.18315	2.18315	0.00009	0.00002	—	2.19064
Dust From Material Movement	—	—	—	—	—	—	< 0.000005	< 0.000005	—	< 0.000005	< 0.000005	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.4. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02040	0.01867	0.01233	0.21524	0.00000	0.00000	0.04133	0.04133	0.00000	0.00969	0.00969	—	41.9936	41.9936	0.00077	0.00162	0.15492	42.6507
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00125	0.00031	0.02134	0.00879	0.00010	0.00020	0.00402	0.00422	0.00020	0.00113	0.00132	—	16.2260	16.2260	0.00092	0.00260	0.03012	17.0544
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00048	0.00044	0.00038	0.00457	0.00000	0.00000	0.00102	0.00102	0.00000	0.00024	0.00024	—	0.97282	0.97282	0.00002	0.00004	0.00165	0.98779
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00003	0.00001	0.00054	0.00022	< 0.000005	< 0.000005	0.00010	0.00010	< 0.000005	0.00003	0.00003	—	0.40013	0.40013	0.00002	0.00006	0.00032	0.42013
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00009	0.00008	0.00007	0.00083	0.00000	0.00000	0.00019	0.00019	0.00000	0.00004	0.00004	—	0.16106	0.16106	< 0.000005	0.00001	0.00027	0.16354
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00001	< 0.000005	0.00010	0.00004	< 0.000005	< 0.000005	0.00002	0.00002	< 0.000005	0.00001	0.00001	—	0.06625	0.06625	< 0.000005	0.00001	0.00005	0.06956

3.4. Paving Preparation (2027)

3.4.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04342	0.04168	0.23645	2.52326	0.00340	0.00913	—	0.00913	0.00894	—	0.00894	—	362.055	362.055	0.01469	0.00294	—	363.298
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00464	0.00445	0.02526	0.26961	0.00036	0.00098	—	0.00098	0.00095	—	0.00095	—	38.6853	38.6853	0.00157	0.00031	—	38.8181
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00085	0.00081	0.00461	0.04920	0.00007	0.00018	—	0.00018	0.00017	—	0.00017	—	6.40480	6.40480	0.00026	0.00005	—	6.42678
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03061	0.02801	0.01850	0.32286	0.00000	0.00000	0.06200	0.06200	0.00000	0.01453	0.01453	—	62.9905	62.9905	0.00116	0.00243	0.23238	63.9761
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00315	0.00287	0.00246	0.02968	0.00000	0.00000	0.00662	0.00662	0.00000	0.00155	0.00155	—	6.32331	6.32331	0.00016	0.00028	0.01070	6.42064
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00057	0.00052	0.00045	0.00542	0.00000	0.00000	0.00121	0.00121	0.00000	0.00028	0.00028	—	1.04690	1.04690	0.00003	0.00005	0.00177	1.06301
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04342	0.04168	0.23645	2.52326	0.00340	0.00913	—	0.00913	0.00894	—	0.00894	—	362.055	362.055	0.01469	0.00294	—	363.298
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00464	0.00445	0.02526	0.26961	0.00036	0.00098	—	0.00098	0.00095	—	0.00095	—	38.6853	38.6853	0.00157	0.00031	—	38.8181
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00085	0.00081	0.00461	0.04920	0.00007	0.00018	—	0.00018	0.00017	—	0.00017	—	6.40480	6.40480	0.00026	0.00005	—	6.42678
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03061	0.02801	0.01850	0.32286	0.00000	0.00000	0.06200	0.06200	0.00000	0.01453	0.01453	—	62.9905	62.9905	0.00116	0.00243	0.23238	63.9761
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00315	0.00287	0.00246	0.02968	0.00000	0.00000	0.00662	0.00662	0.00000	0.00155	0.00155	—	6.32331	6.32331	0.00016	0.00028	0.01070	6.42064
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00057	0.00052	0.00045	0.00542	0.00000	0.00000	0.00121	0.00121	0.00000	0.00028	0.00028	—	1.04690	1.04690	0.00003	0.00005	0.00177	1.06301
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Grading (2026)

3.5.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.19422	0.19422	1.00994	12.2361	0.01903	0.03884	—	0.03884	0.03884	—	0.03884	—	2,061.00	2,061.00	0.08360	0.01672	—	2,068.07
Dust From Material Movement	—	—	—	—	—	—	2.09197	2.09197	—	1.00481	1.00481	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00266	0.00266	0.01383	0.16762	0.00026	0.00053	—	0.00053	0.00053	—	0.00053	—	28.2328	28.2328	0.00115	0.00023	—	28.3297
Dust From Material Movement	—	—	—	—	—	—	0.02866	0.02866	—	0.01376	0.01376	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00049	0.00049	0.00252	0.03059	0.00005	0.00010	—	0.00010	0.00010	—	0.00010	—	4.67427	4.67427	0.00019	0.00004	—	4.69031
Dust From Material Movement	—	—	—	—	—	—	0.00523	0.00523	—	0.00251	0.00251	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05266	0.04834	0.03434	0.57290	0.00000	0.00000	0.10333	0.10333	0.00000	0.02422	0.02422	—	106.913	106.913	0.00220	0.00405	0.42188	108.597
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.82078	0.20600	14.6292	5.82915	0.06759	0.12875	2.64246	2.77121	0.12875	0.74108	0.86983	—	10,902.8	10,902.8	0.60834	1.77353	21.4491	11,468.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00069	0.00063	0.00057	0.00675	0.00000	0.00000	0.00141	0.00141	0.00000	0.00033	0.00033	—	1.37584	1.37584	0.00003	0.00006	0.00249	1.39685
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.01120	0.00278	0.20785	0.08012	0.00093	0.00176	0.03618	0.03795	0.00176	0.01015	0.01191	—	149.364	149.364	0.00833	0.02429	0.12737	156.940
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00013	0.00012	0.00010	0.00123	0.00000	0.00000	0.00026	0.00026	0.00000	0.00006	0.00006	—	0.22779	0.22779	0.00001	0.00001	0.00041	0.23126
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00204	0.00051	0.03793	0.01462	0.00017	0.00032	0.00660	0.00693	0.00032	0.00185	0.00217	—	24.7290	24.7290	0.00138	0.00402	0.02109	25.9832

3.5.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19422	0.19422	1.00994	12.2361	0.01903	0.03884	—	0.03884	0.03884	—	0.03884	—	2,061.00	2,061.00	0.08360	0.01672	—	2,068.07

Dust From Material Movement	—	—	—	—	—	—	2.09197	2.09197	—	1.00481	1.00481	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00266	0.00266	0.01383	0.16762	0.00026	0.00053	—	0.00053	0.00053	—	0.00053	—	28.2328	28.2328	0.00115	0.00023	—	28.3297
Dust From Material Movement	—	—	—	—	—	—	0.02866	0.02866	—	0.01376	0.01376	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00049	0.00049	0.00252	0.03059	0.00005	0.00010	—	0.00010	0.00010	—	0.00010	—	4.67427	4.67427	0.00019	0.00004	—	4.69031
Dust From Material Movement	—	—	—	—	—	—	0.00523	0.00523	—	0.00251	0.00251	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.4. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05266	0.04834	0.03434	0.57290	0.00000	0.00000	0.10333	0.10333	0.00000	0.02422	0.02422	—	106.913	106.913	0.00220	0.00405	0.42188	108.597
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.82078	0.20600	14.6292	5.82915	0.06759	0.12875	2.64246	2.77121	0.12875	0.74108	0.86983	—	10,902.8	10,902.8	0.60834	1.77353	21.4491	11,468.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00069	0.00063	0.00057	0.00675	0.00000	0.00000	0.00141	0.00141	0.00000	0.00033	0.00033	—	1.37584	1.37584	0.00003	0.00006	0.00249	1.39685
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.01120	0.00278	0.20785	0.08012	0.00093	0.00176	0.03618	0.03795	0.00176	0.01015	0.01191	—	149.364	149.364	0.00833	0.02429	0.12737	156.940
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00013	0.00012	0.00010	0.00123	0.00000	0.00000	0.00026	0.00026	0.00000	0.00006	0.00006	—	0.22779	0.22779	0.00001	0.00001	0.00041	0.23126
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00204	0.00051	0.03793	0.01462	0.00017	0.00032	0.00660	0.00693	0.00032	0.00185	0.00217	—	24.7290	24.7290	0.00138	0.00402	0.02109	25.9832

3.6. Building Construction (2026)

3.6.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.578	555.578	0.02254	0.00451	—	557.485

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.578	555.578	0.02254	0.00451	—	557.485
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02430	0.02430	0.54288	1.25584	0.00166	0.00339	—	0.00339	0.00339	—	0.00339	—	179.394	179.394	0.00728	0.00146	—	180.010
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00444	0.00444	0.09908	0.22919	0.00030	0.00062	—	0.00062	0.00062	—	0.00062	—	29.7007	29.7007	0.00120	0.00024	—	29.8027
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11425	0.10399	0.10295	1.12773	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	221.995	221.995	0.00675	0.00964	0.02434	225.061
Vendor	0.02175	0.00786	0.40185	0.16037	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.299	296.299	0.01164	0.04394	0.01862	309.702
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03630	0.03318	0.03013	0.35465	0.00000	0.00000	0.07429	0.07429	0.00000	0.01741	0.01741	—	72.2448	72.2448	0.00178	0.00311	0.13100	73.3478
Vendor	0.00710	0.00261	0.12784	0.05109	0.00065	0.00130	0.02471	0.02601	0.00065	0.00683	0.00748	—	95.6545	95.6545	0.00376	0.01419	0.10035	100.077
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00662	0.00606	0.00550	0.06472	0.00000	0.00000	0.01356	0.01356	0.00000	0.00318	0.00318	—	11.9610	11.9610	0.00030	0.00052	0.02169	12.1436
Vendor	0.00130	0.00048	0.02333	0.00932	0.00012	0.00024	0.00451	0.00475	0.00012	0.00125	0.00136	—	15.8367	15.8367	0.00062	0.00235	0.01661	16.5688
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.578	555.578	0.02254	0.00451	—	557.485
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.578	555.578	0.02254	0.00451	—	557.485
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02430	0.02430	0.54288	1.25584	0.00166	0.00339	—	0.00339	0.00339	—	0.00339	—	179.394	179.394	0.00728	0.00146	—	180.010
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00444	0.00444	0.09908	0.22919	0.00030	0.00062	—	0.00062	0.00062	—	0.00062	—	29.7007	29.7007	0.00120	0.00024	—	29.8027
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11425	0.10399	0.10295	1.12773	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	221.995	221.995	0.00675	0.00964	0.02434	225.061
Vendor	0.02175	0.00786	0.40185	0.16037	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.299	296.299	0.01164	0.04394	0.01862	309.702

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03630	0.03318	0.03013	0.35465	0.00000	0.00000	0.07429	0.07429	0.00000	0.01741	0.01741	—	72.2448	72.2448	0.00178	0.00311	0.13100	73.3478
Vendor	0.00710	0.00261	0.12784	0.05109	0.00065	0.00130	0.02471	0.02601	0.00065	0.00683	0.00748	—	95.6545	95.6545	0.00376	0.01419	0.10035	100.077
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00662	0.00606	0.00550	0.06472	0.00000	0.00000	0.01356	0.01356	0.00000	0.00318	0.00318	—	11.9610	11.9610	0.00030	0.00052	0.02169	12.1436
Vendor	0.00130	0.00048	0.02333	0.00932	0.00012	0.00024	0.00451	0.00475	0.00012	0.00125	0.00136	—	15.8367	15.8367	0.00062	0.00235	0.01661	16.5688
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7. Building Construction (2027)

3.7.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.537	555.537	0.02254	0.00451	—	557.443
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.537	555.537	0.02254	0.00451	—	557.443

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01340	0.01340	0.29941	0.69262	0.00091	0.00187	—	0.00187	0.00187	—	0.00187	—	98.9312	98.9312	0.00401	0.00080	—	99.2707
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00245	0.00245	0.05464	0.12640	0.00017	0.00034	—	0.00034	0.00034	—	0.00034	—	16.3792	16.3792	0.00066	0.00013	—	16.4354
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11363	0.10399	0.06870	1.19870	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	233.871	233.871	0.00430	0.00902	0.86278	237.530
Vendor	0.01998	0.00810	0.36462	0.15356	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.255	290.255	0.01164	0.04394	0.64172	304.281
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10995	0.09970	0.09454	1.05720	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	218.007	218.007	0.00614	0.00964	0.02239	221.055
Vendor	0.01974	0.00786	0.38431	0.15586	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.374	290.374	0.01164	0.04394	0.01666	303.775
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01947	0.01775	0.01523	0.18369	0.00000	0.00000	0.04097	0.04097	0.00000	0.00960	0.00960	—	39.1286	39.1286	0.00098	0.00172	0.06621	39.7309
Vendor	0.00356	0.00144	0.06738	0.02773	0.00036	0.00036	0.01363	0.01399	0.00036	0.00377	0.00412	—	51.6979	51.6979	0.00207	0.00782	0.04940	54.1308
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00355	0.00324	0.00278	0.03352	0.00000	0.00000	0.00748	0.00748	0.00000	0.00175	0.00175	—	6.47819	6.47819	0.00016	0.00028	0.01096	6.57791
Vendor	0.00065	0.00026	0.01230	0.00506	0.00007	0.00007	0.00249	0.00255	0.00007	0.00069	0.00075	—	8.55918	8.55918	0.00034	0.00130	0.00818	8.96197
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.537	555.537	0.02254	0.00451	—	557.443
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07527	0.07527	1.68128	3.88931	0.00513	0.01051	—	0.01051	0.01051	—	0.01051	—	555.537	555.537	0.02254	0.00451	—	557.443
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.01340	0.01340	0.29941	0.69262	0.00091	0.00187	—	0.00187	0.00187	—	0.00187	—	98.9312	98.9312	0.00401	0.00080	—	99.2707
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.00245	0.00245	0.05464	0.12640	0.00017	0.00034	—	0.00034	0.00034	—	0.00034	—	16.3792	16.3792	0.00066	0.00013	—	16.4354
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11363	0.10399	0.06870	1.19870	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	233.871	233.871	0.00430	0.00902	0.86278	237.530
Vendor	0.01998	0.00810	0.36462	0.15356	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.255	290.255	0.01164	0.04394	0.64172	304.281
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10995	0.09970	0.09454	1.05720	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	218.007	218.007	0.00614	0.00964	0.02239	221.055
Vendor	0.01974	0.00786	0.38431	0.15586	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.374	290.374	0.01164	0.04394	0.01666	303.775
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01947	0.01775	0.01523	0.18369	0.00000	0.00000	0.04097	0.04097	0.00000	0.00960	0.00960	—	39.1286	39.1286	0.00098	0.00172	0.06621	39.7309
Vendor	0.00356	0.00144	0.06738	0.02773	0.00036	0.00036	0.01363	0.01399	0.00036	0.00377	0.00412	—	51.6979	51.6979	0.00207	0.00782	0.04940	54.1308
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00355	0.00324	0.00278	0.03352	0.00000	0.00000	0.00748	0.00748	0.00000	0.00175	0.00175	—	6.47819	6.47819	0.00016	0.00028	0.01096	6.57791
Vendor	0.00065	0.00026	0.01230	0.00506	0.00007	0.00007	0.00249	0.00255	0.00007	0.00069	0.00075	—	8.55918	8.55918	0.00034	0.00130	0.00818	8.96197
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8. Landscaping (2027)

3.8.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03573	0.03573	0.59006	2.19016	0.00290	0.00573	—	0.00573	0.00573	—	0.00573	—	313.731	313.731	0.01273	0.00255	—	314.808
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03573	0.03573	0.59006	2.19016	0.00290	0.00573	—	0.00573	0.00573	—	0.00573	—	313.731	313.731	0.01273	0.00255	—	314.808
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00225	0.00225	0.03718	0.13801	0.00018	0.00036	—	0.00036	0.00036	—	0.00036	—	19.7694	19.7694	0.00080	0.00016	—	19.8372

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00041	0.00041	0.00679	0.02519	0.00003	0.00007	—	0.00007	0.00007	—	0.00007	—	3.27304	3.27304	0.00013	0.00003	—	3.28427
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11363	0.10399	0.06870	1.19870	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	233.871	233.871	0.00430	0.00902	0.86278	237.530
Vendor	0.01998	0.00810	0.36462	0.15356	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.255	290.255	0.01164	0.04394	0.64172	304.281
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10995	0.09970	0.09454	1.05720	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	218.007	218.007	0.00614	0.00964	0.02239	221.055
Vendor	0.01974	0.00786	0.38431	0.15586	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.374	290.374	0.01164	0.04394	0.01666	303.775
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00689	0.00628	0.00539	0.06500	0.00000	0.00000	0.01450	0.01450	0.00000	0.00340	0.00340	—	13.8455	13.8455	0.00035	0.00061	0.02343	14.0586
Vendor	0.00126	0.00051	0.02384	0.00981	0.00013	0.00013	0.00482	0.00495	0.00013	0.00133	0.00146	—	18.2931	18.2931	0.00073	0.00277	0.01748	19.1540
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00126	0.00115	0.00098	0.01186	0.00000	0.00000	0.00265	0.00265	0.00000	0.00062	0.00062	—	2.29228	2.29228	0.00006	0.00010	0.00388	2.32757

Vendor	0.00023	0.00009	0.00435	0.00179	0.00002	0.00002	0.00088	0.00090	0.00002	0.00024	0.00027	—	3.02863	3.02863	0.00012	0.00046	0.00289	3.17116
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03573	0.03573	0.59006	2.19016	0.00290	0.00573	—	0.00573	0.00573	—	0.00573	—	313.731	313.731	0.01273	0.00255	—	314.808
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03573	0.03573	0.59006	2.19016	0.00290	0.00573	—	0.00573	0.00573	—	0.00573	—	313.731	313.731	0.01273	0.00255	—	314.808
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00225	0.00225	0.03718	0.13801	0.00018	0.00036	—	0.00036	0.00036	—	0.00036	—	19.7694	19.7694	0.00080	0.00016	—	19.8372
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.00041	0.00041	0.00679	0.02519	0.00003	0.00007	—	0.00007	0.00007	—	0.00007	—	3.27304	3.27304	0.00013	0.00003	—	3.28427
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11363	0.10399	0.06870	1.19870	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	233.871	233.871	0.00430	0.00902	0.86278	237.530
Vendor	0.01998	0.00810	0.36462	0.15356	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.255	290.255	0.01164	0.04394	0.64172	304.281
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10995	0.09970	0.09454	1.05720	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	218.007	218.007	0.00614	0.00964	0.02239	221.055
Vendor	0.01974	0.00786	0.38431	0.15586	0.00201	0.00201	0.07657	0.07858	0.00201	0.02115	0.02317	—	290.374	290.374	0.01164	0.04394	0.01666	303.775
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00689	0.00628	0.00539	0.06500	0.00000	0.00000	0.01450	0.01450	0.00000	0.00340	0.00340	—	13.8455	13.8455	0.00035	0.00061	0.02343	14.0586
Vendor	0.00126	0.00051	0.02384	0.00981	0.00013	0.00013	0.00482	0.00495	0.00013	0.00133	0.00146	—	18.2931	18.2931	0.00073	0.00277	0.01748	19.1540
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00126	0.00115	0.00098	0.01186	0.00000	0.00000	0.00265	0.00265	0.00000	0.00062	0.00062	—	2.29228	2.29228	0.00006	0.00010	0.00388	2.32757
Vendor	0.00023	0.00009	0.00435	0.00179	0.00002	0.00002	0.00088	0.00090	0.00002	0.00024	0.00027	—	3.02863	3.02863	0.00012	0.00046	0.00289	3.17116
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9. Building Foundations (2026)

3.9.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06606	0.05460	0.41460	0.32147	0.00084	0.01613	—	0.01613	0.01484	—	0.01484	—	56.3134	56.3134	0.00228	0.00046	—	56.5066
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00271	0.00224	0.01704	0.01321	0.00003	0.00066	—	0.00066	0.00061	—	0.00061	—	2.31425	2.31425	0.00009	0.00002	—	2.32219
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00050	0.00041	0.00311	0.00241	0.00001	0.00012	—	0.00012	0.00011	—	0.00011	—	0.38315	0.38315	0.00002	< 0.000005	—	0.38447
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00462	0.00422	0.00383	0.04514	0.00000	0.00000	0.00945	0.00945	0.00000	0.00222	0.00222	—	9.19479	9.19479	0.00023	0.00040	0.01667	9.33518
Vendor	0.00090	0.00033	0.01627	0.00650	0.00008	0.00017	0.00315	0.00331	0.00008	0.00087	0.00095	—	12.1742	12.1742	0.00048	0.00181	0.01277	12.7370
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00084	0.00077	0.00070	0.00824	0.00000	0.00000	0.00173	0.00173	0.00000	0.00040	0.00040	—	1.52230	1.52230	0.00004	0.00007	0.00276	1.54555
Vendor	0.00016	0.00006	0.00297	0.00119	0.00002	0.00003	0.00057	0.00060	0.00002	0.00016	0.00017	—	2.01558	2.01558	0.00008	0.00030	0.00211	2.10876
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06606	0.05460	0.41460	0.32147	0.00084	0.01613	—	0.01613	0.01484	—	0.01484	—	56.3134	56.3134	0.00228	0.00046	—	56.5066

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00271	0.00224	0.01704	0.01321	0.00003	0.00066	—	0.00066	0.00061	—	0.00061	—	2.31425	2.31425	0.00009	0.00002	—	2.32219
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00050	0.00041	0.00311	0.00241	0.00001	0.00012	—	0.00012	0.00011	—	0.00011	—	0.38315	0.38315	0.00002	< 0.000005	—	0.38447
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00462	0.00422	0.00383	0.04514	0.00000	0.00000	0.00945	0.00945	0.00000	0.00222	0.00222	—	9.19479	9.19479	0.00023	0.00040	0.01667	9.33518
Vendor	0.00090	0.00033	0.01627	0.00650	0.00008	0.00017	0.00315	0.00331	0.00008	0.00087	0.00095	—	12.1742	12.1742	0.00048	0.00181	0.01277	12.7370
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00084	0.00077	0.00070	0.00824	0.00000	0.00000	0.00173	0.00173	0.00000	0.00040	0.00040	—	1.52230	1.52230	0.00004	0.00007	0.00276	1.54555
Vendor	0.00016	0.00006	0.00297	0.00119	0.00002	0.00003	0.00057	0.00060	0.00002	0.00016	0.00017	—	2.01558	2.01558	0.00008	0.00030	0.00211	2.10876
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10. Building Support - Air Comp (2026)

3.10.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01387	0.01146	0.08672	0.05151	0.00015	0.00349	—	0.00349	0.00321	—	0.00321	—	11.2997	11.2997	0.00046	0.00009	—	11.3384
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00114	0.00094	0.00713	0.00423	0.00001	0.00029	—	0.00029	0.00026	—	0.00026	—	0.92874	0.92874	0.00004	0.00001	—	0.93193

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00021	0.00017	0.00130	0.00077	< 0.000005	0.00005	—	0.00005	0.00005	—	0.00005	—	0.15376	0.15376	0.00001	< 0.000005	—	0.15429
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00924	0.00845	0.00767	0.09027	0.00000	0.00000	0.01891	0.01891	0.00000	0.00443	0.00443	—	18.3896	18.3896	0.00045	0.00079	0.03335	18.6704
Vendor	0.00181	0.00067	0.03254	0.01300	0.00017	0.00033	0.00629	0.00662	0.00017	0.00174	0.00190	—	24.3484	24.3484	0.00096	0.00361	0.02554	25.4740
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00169	0.00154	0.00140	0.01647	0.00000	0.00000	0.00345	0.00345	0.00000	0.00081	0.00081	—	3.04461	3.04461	0.00008	0.00013	0.00552	3.09109
Vendor	0.00033	0.00012	0.00594	0.00237	0.00003	0.00006	0.00115	0.00121	0.00003	0.00032	0.00035	—	4.03116	4.03116	0.00016	0.00060	0.00423	4.21752
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01387	0.01146	0.08672	0.05151	0.00015	0.00349	—	0.00349	0.00321	—	0.00321	—	11.2997	11.2997	0.00046	0.00009	—	11.3384
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00114	0.00094	0.00713	0.00423	0.00001	0.00029	—	0.00029	0.00026	—	0.00026	—	0.92874	0.92874	0.00004	0.00001	—	0.93193
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00021	0.00017	0.00130	0.00077	< 0.000005	0.00005	—	0.00005	0.00005	—	0.00005	—	0.15376	0.15376	0.00001	< 0.000005	—	0.15429
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.10.4. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00924	0.00845	0.00767	0.09027	0.00000	0.00000	0.01891	0.01891	0.00000	0.00443	0.00443	—	18.3896	18.3896	0.00045	0.00079	0.03335	18.6704
Vendor	0.00181	0.00067	0.03254	0.01300	0.00017	0.00033	0.00629	0.00662	0.00017	0.00174	0.00190	—	24.3484	24.3484	0.00096	0.00361	0.02554	25.4740
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00169	0.00154	0.00140	0.01647	0.00000	0.00000	0.00345	0.00345	0.00000	0.00081	0.00081	—	3.04461	3.04461	0.00008	0.00013	0.00552	3.09109
Vendor	0.00033	0.00012	0.00594	0.00237	0.00003	0.00006	0.00115	0.00121	0.00003	0.00032	0.00035	—	4.03116	4.03116	0.00016	0.00060	0.00423	4.21752
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11. Cranes (2026)

3.11.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09386	0.09386	0.48805	4.88047	0.00914	0.01877	—	0.01877	0.01877	—	0.01877	—	990.099	990.099	0.04016	0.00803	—	993.496

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00154	0.00154	0.00802	0.08023	0.00015	0.00031	—	0.00031	0.00031	—	0.00031	—	16.2756	16.2756	0.00066	0.00013	—	16.3314
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00028	0.00028	0.00146	0.01464	0.00003	0.00006	—	0.00006	0.00006	—	0.00006	—	2.69461	2.69461	0.00011	0.00002	—	2.70386
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00185	0.00169	0.00153	0.01805	0.00000	0.00000	0.00378	0.00378	0.00000	0.00089	0.00089	—	3.67792	3.67792	0.00009	0.00016	0.00667	3.73407
Vendor	0.00036	0.00013	0.00651	0.00260	0.00003	0.00007	0.00126	0.00132	0.00003	0.00035	0.00038	—	4.86968	4.86968	0.00019	0.00072	0.00511	5.09480
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00034	0.00031	0.00028	0.00329	0.00000	0.00000	0.00069	0.00069	0.00000	0.00016	0.00016	—	0.60892	0.60892	0.00002	0.00003	0.00110	0.61822
Vendor	0.00007	0.00002	0.00119	0.00047	0.00001	0.00001	0.00023	0.00024	0.00001	0.00006	0.00007	—	0.80623	0.80623	0.00003	0.00012	0.00085	0.84350
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09386	0.09386	0.48805	4.88047	0.00914	0.01877	—	0.01877	0.01877	—	0.01877	—	990.099	990.099	0.04016	0.00803	—	993.496
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00154	0.00154	0.00802	0.08023	0.00015	0.00031	—	0.00031	0.00031	—	0.00031	—	16.2756	16.2756	0.00066	0.00013	—	16.3314
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00028	0.00028	0.00146	0.01464	0.00003	0.00006	—	0.00006	0.00006	—	0.00006	—	2.69461	2.69461	0.00011	0.00002	—	2.70386
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00185	0.00169	0.00153	0.01805	0.00000	0.00000	0.00378	0.00378	0.00000	0.00089	0.00089	—	3.67792	3.67792	0.00009	0.00016	0.00667	3.73407
Vendor	0.00036	0.00013	0.00651	0.00260	0.00003	0.00007	0.00126	0.00132	0.00003	0.00035	0.00038	—	4.86968	4.86968	0.00019	0.00072	0.00511	5.09480
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00034	0.00031	0.00028	0.00329	0.00000	0.00000	0.00069	0.00069	0.00000	0.00016	0.00016	—	0.60892	0.60892	0.00002	0.00003	0.00110	0.61822
Vendor	0.00007	0.00002	0.00119	0.00047	0.00001	0.00001	0.00023	0.00024	0.00001	0.00006	0.00007	—	0.80623	0.80623	0.00003	0.00012	0.00085	0.84350
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.12. Welders (2026)

3.12.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03286	0.03286	1.00399	1.49685	0.00268	0.00365	—	0.00365	0.00365	—	0.00365	—	207.475	207.475	0.00842	0.00168	—	208.187
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00180	0.00180	0.05501	0.08202	0.00015	0.00020	—	0.00020	0.00020	—	0.00020	—	11.3685	11.3685	0.00046	0.00009	—	11.4075
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00033	0.00033	0.01004	0.01497	0.00003	0.00004	—	0.00004	0.00004	—	0.00004	—	1.88218	1.88218	0.00008	0.00002	—	1.88864
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.12.2. Offsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00616	0.00563	0.00511	0.06018	0.00000	0.00000	0.01261	0.01261	0.00000	0.00295	0.00295	—	12.2597	12.2597	0.00030	0.00053	0.02223	12.4469
Vendor	0.00121	0.00044	0.02169	0.00867	0.00011	0.00022	0.00419	0.00441	0.00011	0.00116	0.00127	—	16.2323	16.2323	0.00064	0.00241	0.01703	16.9827
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00112	0.00103	0.00093	0.01098	0.00000	0.00000	0.00230	0.00230	0.00000	0.00054	0.00054	—	2.02974	2.02974	0.00005	0.00009	0.00368	2.06073
Vendor	0.00022	0.00008	0.00396	0.00158	0.00002	0.00004	0.00077	0.00081	0.00002	0.00021	0.00023	—	2.68744	2.68744	0.00011	0.00040	0.00282	2.81168
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.12.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03286	0.03286	1.00399	1.49685	0.00268	0.00365	—	0.00365	0.00365	—	0.00365	—	207.475	207.475	0.00842	0.00168	—	208.187
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00180	0.00180	0.05501	0.08202	0.00015	0.00020	—	0.00020	0.00020	—	0.00020	—	11.3685	11.3685	0.00046	0.00009	—	11.4075
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00033	0.00033	0.01004	0.01497	0.00003	0.00004	—	0.00004	0.00004	—	0.00004	—	1.88218	1.88218	0.00008	0.00002	—	1.88864
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.12.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11732	0.10768	0.07649	1.27624	0.00000	0.00000	0.23019	0.23019	0.00000	0.05396	0.05396	—	238.169	238.169	0.00491	0.00902	0.93981	241.920
Vendor	0.02223	0.00810	0.38240	0.15807	0.00201	0.00402	0.07657	0.08059	0.00201	0.02115	0.02317	—	296.193	296.193	0.01164	0.04394	0.71654	310.294
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00616	0.00563	0.00511	0.06018	0.00000	0.00000	0.01261	0.01261	0.00000	0.00295	0.00295	—	12.2597	12.2597	0.00030	0.00053	0.02223	12.4469

Vendor	0.00121	0.00044	0.02169	0.00867	0.00011	0.00022	0.00419	0.00441	0.00011	0.00116	0.00127	—	16.2323	16.2323	0.00064	0.00241	0.01703	16.9827
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00112	0.00103	0.00093	0.01098	0.00000	0.00000	0.00230	0.00230	0.00000	0.00054	0.00054	—	2.02974	2.02974	0.00005	0.00009	0.00368	2.06073
Vendor	0.00022	0.00008	0.00396	0.00158	0.00002	0.00004	0.00077	0.00081	0.00002	0.00021	0.00023	—	2.68744	2.68744	0.00011	0.00040	0.00282	2.81168
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.13. Paving (2027)

3.13.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10539	0.10539	0.54802	7.79868	0.01027	0.02108	—	0.02108	0.02108	—	0.02108	—	1,111.75	1,111.75	0.04510	0.00902	—	1,115.56
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00144	0.00144	0.00751	0.10683	0.00014	0.00029	—	0.00029	0.00029	—	0.00029	—	15.2294	15.2294	0.00062	0.00012	—	15.2817
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00026	0.00026	0.00137	0.01950	0.00003	0.00005	—	0.00005	0.00005	—	0.00005	—	2.52141	2.52141	0.00010	0.00002	—	2.53006
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.13.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04081	0.03735	0.02467	0.43047	0.00000	0.00000	0.08266	0.08266	0.00000	0.01938	0.01938	—	83.9873	83.9873	0.00154	0.00324	0.30984	85.3015
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00054	0.00049	0.00042	0.00507	0.00000	0.00000	0.00113	0.00113	0.00000	0.00027	0.00027	—	1.08091	1.08091	0.00003	0.00005	0.00183	1.09755
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00010	0.00009	0.00008	0.00093	0.00000	0.00000	0.00021	0.00021	0.00000	0.00005	0.00005	—	0.17896	0.17896	< 0.000005	0.00001	0.00030	0.18171
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.13.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10539	0.10539	0.54802	7.79868	0.01027	0.02108	—	0.02108	0.02108	—	0.02108	—	1,111.75	1,111.75	0.04510	0.00902	—	1,115.56
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00144	0.00144	0.00751	0.10683	0.00014	0.00029	—	0.00029	0.00029	—	0.00029	—	15.2294	15.2294	0.00062	0.00012	—	15.2817
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00026	0.00026	0.00137	0.01950	0.00003	0.00005	—	0.00005	0.00005	—	0.00005	—	2.52141	2.52141	0.00010	0.00002	—	2.53006
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.13.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04081	0.03735	0.02467	0.43047	0.00000	0.00000	0.08266	0.08266	0.00000	0.01938	0.01938	—	83.9873	83.9873	0.00154	0.00324	0.30984	85.3015
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00054	0.00049	0.00042	0.00507	0.00000	0.00000	0.00113	0.00113	0.00000	0.00027	0.00027	—	1.08091	1.08091	0.00003	0.00005	0.00183	1.09755
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00010	0.00009	0.00008	0.00093	0.00000	0.00000	0.00021	0.00021	0.00000	0.00005	0.00005	—	0.17896	0.17896	< 0.000005	0.00001	0.00030	0.18171
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.14. Arch.Coating Air Comp (2027)

3.14.1. Onsite - 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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02114	0.02114	0.64604	0.96319	0.00173	0.00235	—	0.00235	0.00235	—	0.00235	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	8.79346	8.79346	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02114	0.02114	0.64604	0.96319	0.00173	0.00235	—	0.00235	0.00235	—	0.00235	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	8.79346	8.79346	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00388	0.00388	0.11859	0.17680	0.00032	0.00043	—	0.00043	0.00043	—	0.00043	—	24.5078	24.5078	0.00099	0.00020	—	24.5919
Architectural Coatings	1.61414	1.61414	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00071	0.00071	0.02164	0.03227	0.00006	0.00008	—	0.00008	0.00008	—	0.00008	—	4.05755	4.05755	0.00016	0.00003	—	4.07147
Architectural Coatings	0.29458	0.29458	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.14.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13636	0.12479	0.08243	1.43844	0.00000	0.00000	0.27623	0.27623	0.00000	0.06475	0.06475	—	280.645	280.645	0.00516	0.01083	1.03533	285.037
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13194	0.11964	0.11345	1.26864	0.00000	0.00000	0.27623	0.27623	0.00000	0.06475	0.06475	—	261.609	261.609	0.00737	0.01157	0.02687	265.266
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02408	0.02196	0.01884	0.22721	0.00000	0.00000	0.05068	0.05068	0.00000	0.01188	0.01188	—	48.3991	48.3991	0.00122	0.00212	0.08190	49.1441
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00440	0.00401	0.00344	0.04147	0.00000	0.00000	0.00925	0.00925	0.00000	0.00217	0.00217	—	8.01302	8.01302	0.00020	0.00035	0.01356	8.13637
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.14.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02114	0.02114	0.64604	0.96319	0.00173	0.00235	—	0.00235	0.00235	—	0.00235	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	8.79346	8.79346	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02114	0.02114	0.64604	0.96319	0.00173	0.00235	—	0.00235	0.00235	—	0.00235	—	133.513	133.513	0.00542	0.00108	—	133.971
Architectural Coatings	8.79346	8.79346	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.00388	0.00388	0.11859	0.17680	0.00032	0.00043	—	0.00043	0.00043	—	0.00043	—	24.5078	24.5078	0.00099	0.00020	—	24.5919
Architectural Coatings	1.61414	1.61414	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00071	0.00071	0.02164	0.03227	0.00006	0.00008	—	0.00008	0.00008	—	0.00008	—	4.05755	4.05755	0.00016	0.00003	—	4.07147
Architectural Coatings	0.29458	0.29458	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.14.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13636	0.12479	0.08243	1.43844	0.00000	0.00000	0.27623	0.27623	0.00000	0.06475	0.06475	—	280.645	280.645	0.00516	0.01083	1.03533	285.037
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13194	0.11964	0.11345	1.26864	0.00000	0.00000	0.27623	0.27623	0.00000	0.06475	0.06475	—	261.609	261.609	0.00737	0.01157	0.02687	265.266
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02408	0.02196	0.01884	0.22721	0.00000	0.00000	0.05068	0.05068	0.00000	0.01188	0.01188	—	48.3991	48.3991	0.00122	0.00212	0.08190	49.1441
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00440	0.00401	0.00344	0.04147	0.00000	0.00000	0.00925	0.00925	0.00000	0.00217	0.00217	—	8.01302	8.01302	0.00020	0.00035	0.01356	8.13637
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.15. Arch.Coat. Lifts Initial (2027)

3.15.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03406	0.03406	1.03706	1.40041	0.00185	0.00378	—	0.00378	0.00378	—	0.00378	—	199.792	199.792	0.00810	0.00162	—	200.478
Architectural Coatings	7.31878	7.31878	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00065	0.00065	0.01989	0.02686	0.00004	0.00007	—	0.00007	0.00007	—	0.00007	—	3.83163	3.83163	0.00016	0.00003	—	3.84478
Architectural Coatings	0.14036	0.14036	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00012	0.00012	0.00363	0.00490	0.00001	0.00001	—	0.00001	0.00001	—	0.00001	—	0.63437	0.63437	0.00003	0.00001	—	0.63655
Architectural Coatings	0.02562	0.02562	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.15.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.15.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03406	0.03406	1.03706	1.40041	0.00185	0.00378	—	0.00378	0.00378	—	0.00378	—	199.792	199.792	0.00810	0.00162	—	200.478
Architectural Coatings	7.31878	7.31878	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.00065	0.00065	0.01989	0.02686	0.00004	0.00007	—	0.00007	0.00007	—	0.00007	—	3.83163	3.83163	0.00016	0.00003	—	3.84478
Architectural Coatings	0.14036	0.14036	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00012	0.00012	0.00363	0.00490	0.00001	0.00001	—	0.00001	0.00001	—	0.00001	—	0.63437	0.63437	0.00003	0.00001	—	0.63655
Architectural Coatings	0.02562	0.02562	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.15.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.16. Arch Coat Lifts Final (2027)

3.16.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03406	0.03406	1.03706	1.40041	0.00185	0.00378	—	0.00378	0.00378	—	0.00378	—	199.792	199.792	0.00810	0.00162	—	200.478
Architectural Coatings	7.31878	7.31878	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.00065	0.00065	0.01989	0.02686	0.00004	0.00007	—	0.00007	0.00007	—	0.00007	—	3.83163	3.83163	0.00016	0.00003	—	3.84478
Architectural Coatings	0.14036	0.14036	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00012	0.00012	0.00363	0.00490	0.00001	0.00001	—	0.00001	0.00001	—	0.00001	—	0.63437	0.63437	0.00003	0.00001	—	0.63655
Architectural Coatings	0.02562	0.02562	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.16.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.16.3. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03406	0.03406	1.03706	1.40041	0.00185	0.00378	—	0.00378	0.00378	—	0.00378	—	199.792	199.792	0.00810	0.00162	—	200.478
Architectural Coatings	7.31878	7.31878	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.00065	0.00065	0.01989	0.02686	0.00004	0.00007	—	0.00007	0.00007	—	0.00007	—	3.83163	3.83163	0.00016	0.00003	—	3.84478
Architectural Coatings	0.14036	0.14036	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00012	0.00012	0.00363	0.00490	0.00001	0.00001	—	0.00001	0.00001	—	0.00001	—	0.63437	0.63437	0.00003	0.00001	—	0.63655
Architectural Coatings	0.02562	0.02562	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.16.4. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Total	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Total	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525
Total	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525

4.1.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Total	3.81743	3.58911	2.52091	21.1640	0.04449	0.04008	3.91151	3.95160	0.03770	0.99571	1.03341	—	4,547.06	4,547.06	0.24237	0.23576	15.8337	4,639.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Total	3.65965	3.41186	2.89875	21.4480	0.04235	0.04012	3.91151	3.95163	0.03774	0.99571	1.03345	—	4,330.01	4,330.01	0.28272	0.25689	0.41057	4,414.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525
Total	0.50916	0.47556	0.38779	2.86469	0.00600	0.00565	0.55085	0.55650	0.00531	0.14023	0.14554	—	556.341	556.341	0.03388	0.03175	0.87391	567.525

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Total	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Total	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	13.8159	13.8159	0.00224	0.00027	—	13.9525
Total	—	—	—	—	—	—	—	—	—	—	—	—	13.8159	13.8159	0.00224	0.00027	—	13.9525

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Total	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739
Total	—	—	—	—	—	—	—	—	—	—	—	—	83.4488	83.4488	0.01350	0.00164	—	84.2739

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	13.8159	13.8159	0.00224	0.00027	—	13.9525
Total	—	—	—	—	—	—	—	—	—	—	—	—	13.8159	13.8159	0.00224	0.00027	—	13.9525

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Total	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Total	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	154.401	154.401	0.01366	0.00029	—	154.830
Total	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	154.401	154.401	0.01366	0.00029	—	154.830

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Total	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Total	0.08598	0.04299	0.78161	0.65655	0.00469	0.05940	—	0.05940	0.05940	—	0.05940	—	932.593	932.593	0.08253	0.00176	—	935.179
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	154.401	154.401	0.01366	0.00029	—	154.830
Total	0.01569	0.00785	0.14264	0.11982	0.00086	0.01084	—	0.01084	0.01084	—	0.01084	—	154.401	154.401	0.01366	0.00029	—	154.830

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.41882	1.41882	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.18949	0.18949	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.51309	0.47352	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Total	2.12139	2.08182	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.41882	1.41882	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.18949	0.18949	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.60831	1.60831	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25893	0.25893	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03458	0.03458	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04618	0.04262	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162
Total	0.33969	0.33613	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162

4.3.2. Mitigated

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

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

Consum Products	1.41882	1.41882	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.18949	0.18949	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.51309	0.47352	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Total	2.12139	2.08182	0.02426	2.88346	0.00017	0.00512	—	0.00512	0.00387	—	0.00387	—	11.8575	11.8575	0.00050	0.00010	—	11.9003
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.41882	1.41882	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.18949	0.18949	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.60831	1.60831	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.25893	0.25893	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03458	0.03458	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04618	0.04262	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162
Total	0.33969	0.33613	0.00218	0.25951	0.00002	0.00046	—	0.00046	0.00035	—	0.00035	—	0.96813	0.96813	0.00004	0.00001	—	0.97162

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Total	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Total	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771
Total	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771

4.4.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555

Total	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Total	—	—	—	—	—	—	—	—	—	—	—	4.70451	5.23242	9.93692	0.01701	0.01038	—	13.4555
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771
Total	—	—	—	—	—	—	—	—	—	—	—	0.77888	0.86629	1.64517	0.00282	0.00172	—	2.22771

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819

Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819

4.5.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-21.6061	-21.6061	3.98159	-0.00042	—	77.8074
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819
Total	—	—	—	—	—	—	—	—	—	—	—	0.00000	-3.57714	-3.57714	0.65920	-0.00007	—	12.8819

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

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

High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240

4.6.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25611	0.25611
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04240	0.04240

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.7.2. Mitigated

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

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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.8.2. Mitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.9.2. Mitigated

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

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

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

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/16/2026	7/8/2026	5.00000	17.0000	—
Site Preparation	Site Preparation	6/16/2026	7/8/2026	5.00000	17.0000	—
Landscaping site prep	Site Preparation	9/1/2027	9/13/2027	5.00000	9.00000	landscape site prepr
Paving Preparation	Site Preparation	5/3/2027	6/24/2027	5.00000	39.0000	site prep for paving
Grading	Grading	7/13/2026	7/17/2026	5.00000	5.00000	—
Building Construction	Building Construction	7/20/2026	4/1/2027	5.00000	184.000	support equipment entire construction duration

Landscaping	Building Construction	9/1/2027	10/1/2027	5.00000	23.0000	general landscaping support equip
Building Foundations	Building Construction	7/20/2026	8/7/2026	5.00000	15.0000	early concrete foundations
Building Support - Air Comp	Building Construction	8/10/2026	9/18/2026	5.00000	30.0000	air compressors support
Cranes	Building Construction	8/10/2026	8/17/2026	5.00000	6.00000	cranes to support early structural work
Welders	Building Construction	8/10/2026	9/4/2026	5.00000	20.0000	structural welding
Paving	Paving	6/25/2027	7/1/2027	5.00000	5.00000	actual paving
Arch.Coating Air Comp	Architectural Coating	7/1/2027	10/1/2027	5.00000	67.0000	air compessor support through phase
Arch.Coat. Lifts Initial	Architectural Coating	7/12/2027	7/20/2027	5.00000	7.00000	initial elevated coating work
Arch Coat Lifts Final	Architectural Coating	9/22/2027	9/30/2027	5.00000	7.00000	final touchup/detail work

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.000000	3.00000	33.0000	0.73000
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.000000	2.00000	367.000	0.40000
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00000	7.00000	84.0000	0.37000
Demolition	Dumpers/Tenders	Diesel	Tier 4 Final	1.000000	7.00000	180.000	0.38000
Demolition	Excavators	Diesel	Tier 4 Final	1.000000	7.00000	158.000	0.38000
Site Preparation	Trenchers	Diesel	Tier 4 Final	1.000000	4.00000	49.0000	0.41000
Site Preparation	Plate Compactors	Diesel	Average	1.000000	6.00000	8.00000	0.43000
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Landscaping site prep	Dumpers/Tenders	Diesel	Tier 4 Final	1.000000	6.00000	180.000	0.38000

Landscaping site prep	Plate Compactors	Diesel	Average	1.000000	4.00000	8.00000	0.43000
Paving Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Paving Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	4.00000	84.0000	0.37000
Paving Preparation	Plate Compactors	Diesel	Average	1.000000	2.00000	8.00000	0.43000
Grading	Graders	Diesel	Tier 4 Final	1.000000	6.00000	148.000	0.41000
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.000000	6.00000	367.000	0.40000
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	6.00000	84.0000	0.37000
Grading	Rollers	Diesel	Tier 4 Final	1.000000	5.00000	80.0000	0.38000
Grading	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Building Construction	Aerial Lifts	Diesel	Tier 4 Final	2.00000	6.00000	74.0000	0.29000
Building Construction	Forklifts	Diesel	Tier 4 Final	1.000000	2.00000	82.0000	0.20000
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	6.00000	84.0000	0.37000
Landscaping	Trenchers	Diesel	Tier 4 Final	1.000000	4.00000	49.0000	0.41000
Landscaping	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	5.00000	97.0000	0.37000
Building Foundations	Cement and Mortar Mixers	Diesel	Average	1.000000	8.00000	10.00000	0.56000
Building Support - Air Comp	Air Compressors	Diesel	Average	1.000000	4.00000	5.00000	0.45000
Cranes	Cranes	Diesel	Tier 4 Final	1.000000	8.00000	367.000	0.29000
Welders	Welders	Diesel	Tier 4 Final	1.000000	8.00000	46.0000	0.45000
Paving	Paving Equipment	Diesel	Tier 4 Final	1.000000	8.00000	130.000	0.36000
Paving	Pavers	Diesel	Tier 4 Final	1.000000	8.00000	81.0000	0.42000
Paving	Rollers	Diesel	Tier 4 Final	1.000000	8.00000	80.0000	0.38000
Paving	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.000000	2.00000	85.0000	0.39000
Arch.Coating Air Comp	Air Compressors	Diesel	Tier 4 Final	1.000000	6.00000	37.0000	0.48000
Arch.Coat. Lifts Initial	Aerial Lifts	Diesel	Tier 4 Final	1.000000	8.00000	74.0000	0.29000

Arch Coat Lifts Final	Aerial Lifts	Diesel	Tier 4 Final	1.000000	8.00000	74.0000	0.29000

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.000000	3.00000	33.0000	0.73000
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.000000	2.00000	367.000	0.40000
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00000	7.00000	84.0000	0.37000
Demolition	Dumpers/Tenders	Diesel	Tier 4 Final	1.000000	7.00000	180.000	0.38000
Demolition	Excavators	Diesel	Tier 4 Final	1.000000	7.00000	158.000	0.38000
Site Preparation	Trenchers	Diesel	Tier 4 Final	1.000000	4.00000	49.0000	0.41000
Site Preparation	Plate Compactors	Diesel	Average	1.000000	6.00000	8.00000	0.43000
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Landscaping site prep	Dumpers/Tenders	Diesel	Tier 4 Final	1.000000	6.00000	180.000	0.38000
Landscaping site prep	Plate Compactors	Diesel	Average	1.000000	4.00000	8.00000	0.43000
Paving Preparation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Paving Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	4.00000	84.0000	0.37000
Paving Preparation	Plate Compactors	Diesel	Average	1.000000	2.00000	8.00000	0.43000
Grading	Graders	Diesel	Tier 4 Final	1.000000	6.00000	148.000	0.41000
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.000000	6.00000	367.000	0.40000
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	6.00000	84.0000	0.37000
Grading	Rollers	Diesel	Tier 4 Final	1.000000	5.00000	80.0000	0.38000
Grading	Rubber Tired Loaders	Diesel	Tier 4 Final	1.000000	4.00000	124.000	0.36000
Building Construction	Aerial Lifts	Diesel	Tier 4 Final	2.00000	6.00000	74.0000	0.29000
Building Construction	Forklifts	Diesel	Tier 4 Final	1.000000	2.00000	82.0000	0.20000
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	6.00000	84.0000	0.37000

Landscaping	Trenchers	Diesel	Tier 4 Final	1.000000	4.00000	49.0000	0.41000
Landscaping	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	5.00000	97.0000	0.37000
Building Foundations	Cement and Mortar Mixers	Diesel	Average	1.000000	8.00000	10.00000	0.56000
Building Support - Air Comp	Air Compressors	Diesel	Average	1.000000	4.00000	5.00000	0.45000
Cranes	Cranes	Diesel	Tier 4 Final	1.000000	8.00000	367.000	0.29000
Welders	Welders	Diesel	Tier 4 Final	1.000000	8.00000	46.0000	0.45000
Paving	Paving Equipment	Diesel	Tier 4 Final	1.000000	8.00000	130.000	0.36000
Paving	Pavers	Diesel	Tier 4 Final	1.000000	8.00000	81.0000	0.42000
Paving	Rollers	Diesel	Tier 4 Final	1.000000	8.00000	80.0000	0.38000
Paving	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.000000	2.00000	85.0000	0.39000
Arch.Coating Air Comp	Air Compressors	Diesel	Tier 4 Final	1.000000	6.00000	37.0000	0.48000
Arch.Coat. Lifts Initial	Aerial Lifts	Diesel	Tier 4 Final	1.000000	8.00000	74.0000	0.29000
Arch Coat Lifts Final	Aerial Lifts	Diesel	Tier 4 Final	1.000000	8.00000	74.0000	0.29000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	11.7000	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40000	HHDT,MHDT
Demolition	Hauling	129.529	20.0000	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	7.50000	11.7000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40000	HHDT,MHDT
Site Preparation	Hauling	14.5882	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT

Landscaping site prep	Worker	5.00000	11.7000	LDA,LDT1,LDT2
Landscaping site prep	Vendor	—	8.40000	HHDT,MHDT
Landscaping site prep	Hauling	0.22222	20.0000	HHDT
Landscaping site prep	Onsite truck	—	—	HHDT
Paving Preparation	Worker	7.50000	11.7000	LDA,LDT1,LDT2
Paving Preparation	Vendor	—	8.40000	HHDT,MHDT
Paving Preparation	Hauling	0.00000	20.0000	HHDT
Paving Preparation	Onsite truck	—	—	HHDT
Grading	Worker	12.5000	11.7000	LDA,LDT1,LDT2
Grading	Vendor	—	8.40000	HHDT,MHDT
Grading	Hauling	146.000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Building Construction	Vendor	10.8666	8.40000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Landscaping	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Landscaping	Vendor	10.8666	8.40000	HHDT,MHDT
Landscaping	Hauling	0.00000	20.0000	HHDT
Landscaping	Onsite truck	—	—	HHDT
Building Foundations	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Building Foundations	Vendor	10.8666	8.40000	HHDT,MHDT
Building Foundations	Hauling	0.00000	20.0000	HHDT
Building Foundations	Onsite truck	—	—	HHDT
Building Support - Air Comp	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Building Support - Air Comp	Vendor	10.8666	8.40000	HHDT,MHDT
Building Support - Air Comp	Hauling	0.00000	20.0000	HHDT
Building Support - Air Comp	Onsite truck	—	—	HHDT

Cranes	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Cranes	Vendor	10.8666	8.40000	HHDT,MHDT
Cranes	Hauling	0.00000	20.0000	HHDT
Cranes	Onsite truck	—	—	HHDT
Welders	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Welders	Vendor	10.8666	8.40000	HHDT,MHDT
Welders	Hauling	0.00000	20.0000	HHDT
Welders	Onsite truck	—	—	HHDT
Paving	Worker	10.00000	11.7000	LDA,LDT1,LDT2
Paving	Vendor	—	8.40000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Arch.Coating Air Comp	Worker	33.4152	11.7000	LDA,LDT1,LDT2
Arch.Coating Air Comp	Vendor	—	8.40000	HHDT,MHDT
Arch.Coating Air Comp	Hauling	0.00000	20.0000	HHDT
Arch.Coating Air Comp	Onsite truck	—	—	HHDT
Arch.Coat. Lifts Initial	Worker	—	11.7000	LDA,LDT1,LDT2
Arch.Coat. Lifts Initial	Vendor	—	8.40000	HHDT,MHDT
Arch.Coat. Lifts Initial	Hauling	0.00000	20.0000	HHDT
Arch.Coat. Lifts Initial	Onsite truck	—	—	HHDT
Arch Coat Lifts Final	Worker	—	11.7000	LDA,LDT1,LDT2
Arch Coat Lifts Final	Vendor	—	8.40000	HHDT,MHDT
Arch Coat Lifts Final	Hauling	0.00000	20.0000	HHDT
Arch Coat Lifts Final	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	11.7000	LDA,LDT1,LDT2

Demolition	Vendor	—	8.40000	HHDT,MHDT
Demolition	Hauling	129.529	20.0000	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	7.50000	11.7000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40000	HHDT,MHDT
Site Preparation	Hauling	14.5882	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Landscaping site prep	Worker	5.00000	11.7000	LDA,LDT1,LDT2
Landscaping site prep	Vendor	—	8.40000	HHDT,MHDT
Landscaping site prep	Hauling	0.22222	20.0000	HHDT
Landscaping site prep	Onsite truck	—	—	HHDT
Paving Preparation	Worker	7.50000	11.7000	LDA,LDT1,LDT2
Paving Preparation	Vendor	—	8.40000	HHDT,MHDT
Paving Preparation	Hauling	0.00000	20.0000	HHDT
Paving Preparation	Onsite truck	—	—	HHDT
Grading	Worker	12.5000	11.7000	LDA,LDT1,LDT2
Grading	Vendor	—	8.40000	HHDT,MHDT
Grading	Hauling	146.000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Building Construction	Vendor	10.8666	8.40000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Landscaping	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Landscaping	Vendor	10.8666	8.40000	HHDT,MHDT
Landscaping	Hauling	0.00000	20.0000	HHDT
Landscaping	Onsite truck	—	—	HHDT
Building Foundations	Worker	27.8460	11.7000	LDA,LDT1,LDT2

Building Foundations	Vendor	10.8666	8.40000	HHDT,MHDT
Building Foundations	Hauling	0.00000	20.0000	HHDT
Building Foundations	Onsite truck	—	—	HHDT
Building Support - Air Comp	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Building Support - Air Comp	Vendor	10.8666	8.40000	HHDT,MHDT
Building Support - Air Comp	Hauling	0.00000	20.0000	HHDT
Building Support - Air Comp	Onsite truck	—	—	HHDT
Cranes	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Cranes	Vendor	10.8666	8.40000	HHDT,MHDT
Cranes	Hauling	0.00000	20.0000	HHDT
Cranes	Onsite truck	—	—	HHDT
Welders	Worker	27.8460	11.7000	LDA,LDT1,LDT2
Welders	Vendor	10.8666	8.40000	HHDT,MHDT
Welders	Hauling	0.00000	20.0000	HHDT
Welders	Onsite truck	—	—	HHDT
Paving	Worker	10.00000	11.7000	LDA,LDT1,LDT2
Paving	Vendor	—	8.40000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Arch.Coating Air Comp	Worker	33.4152	11.7000	LDA,LDT1,LDT2
Arch.Coating Air Comp	Vendor	—	8.40000	HHDT,MHDT
Arch.Coating Air Comp	Hauling	0.00000	20.0000	HHDT
Arch.Coating Air Comp	Onsite truck	—	—	HHDT
Arch.Coat. Lifts Initial	Worker	—	11.7000	LDA,LDT1,LDT2
Arch.Coat. Lifts Initial	Vendor	—	8.40000	HHDT,MHDT
Arch.Coat. Lifts Initial	Hauling	0.00000	20.0000	HHDT
Arch.Coat. Lifts Initial	Onsite truck	—	—	HHDT
Arch Coat Lifts Final	Worker	—	11.7000	LDA,LDT1,LDT2

Arch Coat Lifts Final	Vendor	—	8.40000	HHDT,MHDT
Arch Coat Lifts Final	Hauling	0.00000	20.0000	HHDT
Arch Coat Lifts Final	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Arch.Coating Air Comp	0.00000	0.00000	84,716.7	28,238.9	—
Arch.Coat. Lifts Initial	0.00000	0.00000	7,366.67	2,455.56	—
Arch Coat Lifts Final	0.00000	0.00000	7,366.67	2,455.56	—

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 (Building Square Footage)	Acres Paved (acres)
Demolition	0.00000	0.00000	0.00000	191,393	0.00000
Site Preparation	0.00000	1,981.00	1.000000	0.00000	0.00000
Landscaping site prep	10.00000	0.00000	0.50000	0.00000	0.00000
Paving Preparation	0.00000	0.00000	0.50000	0.00000	0.00000
Grading	1,500.00	4,333.00	3.75000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	0.00000

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	High School	0.00000	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	203.983	0.03300	0.00400
2027	0.00000	203.983	0.03300	0.00400

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	932.841	263.874	113.373	262,876	5,483.60	1,551.15	666.451	1,545,286

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	932.841	263.874	113.373	262,876	5,483.60	1,551.15	666.451	1,545,286

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
High School	Wood Fireplaces	0	0
High School	Gas Fireplaces	0	0
High School	Propane Fireplaces	0	0
High School	Electric Fireplaces	0	0
High School	No Fireplaces	0	0
High School	Conventional Wood Stoves	0	0
High School	Catalytic Wood Stoves	0	0
High School	Non-Catalytic Wood Stoves	0	0
High School	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

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)
0.00000	0.00000	99,450.0	33,150.0	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	180.000

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	180.000

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	149,320	203.983	0.0330	0.0040	2,909,939

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	149,320	203.983	0.0330	0.0040	2,909,939

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	2,201,468	228,931

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	2,201,468	228,931

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	86.1900	38,661.2

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	86.1900	38,661.2

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430.00	0.01679	0.60000	0.00000	1.000000
High School	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.00004	1.000000	0.00000	1.000000
High School	Walk-in refrigerators and freezers	R-404A	3,922.00	0.00040	7.50000	7.50000	20.0000

5.14.2. Mitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430.00	0.01679	0.60000	0.00000	1.000000
High School	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.00004	1.000000	0.00000	1.000000
High School	Walk-in refrigerators and freezers	R-404A	3,922.00	0.00040	7.50000	7.50000	20.0000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	12.1800	annual days of extreme heat
Extreme Precipitation	10.5000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	5.39000	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	N/A	N/A	N/A	N/A
Extreme Precipitation	3	0	0	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	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.5663
AQ-PM	9.62041
AQ-DPM	87.6540
Drinking Water	4.99563
Lead Risk Housing	62.1298
Pesticides	28.6207
Toxic Releases	1.55039
Traffic	85.1750
Effect Indicators	—
CleanUp Sites	0.00000
Groundwater	96.4802
Haz Waste Facilities/Generators	88.3918
Impaired Water Bodies	43.7841
Solid Waste	59.1753
Sensitive Population	—
Asthma	41.6999
Cardio-vascular	35.7178
Low Birth Weights	17.9754
Socioeconomic Factor Indicators	—

Education	48.5826
Housing	60.9252
Linguistic	61.5374
Poverty	44.8744
Unemployment	64.5107

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	46.88823303
Employed	9.713845759
Median HI	38.11112537
Education	—
Bachelor's or higher	44.59129988
High school enrollment	24.3295265
Preschool enrollment	69.26729116
Transportation	—
Auto Access	58.83485179
Active commuting	69.53676376
Social	—
2-parent households	98.90927756
Voting	78.69883229
Neighborhood	—
Alcohol availability	28.47427178
Park access	32.92698576
Retail density	96.39419992
Supermarket access	65.05838573

Tree canopy	64.85307327
Housing	—
Homeownership	40.56204286
Housing habitability	47.69665084
Low-inc homeowner severe housing cost burden	21.48081612
Low-inc renter severe housing cost burden	35.32657513
Uncrowded housing	79.21211344
Health Outcomes	—
Insured adults	53.31707943
Arthritis	54.3
Asthma ER Admissions	59.7
High Blood Pressure	75.3
Cancer (excluding skin)	42.8
Asthma	30.0
Coronary Heart Disease	43.7
Chronic Obstructive Pulmonary Disease	27.0
Diagnosed Diabetes	75.2
Life Expectancy at Birth	14.8
Cognitively Disabled	19.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.9
Mental Health Not Good	36.5
Chronic Kidney Disease	73.0
Obesity	55.7
Pedestrian Injuries	98.7
Physical Health Not Good	48.3
Stroke	45.2
Health Risk Behaviors	—

Binge Drinking	9.5
Current Smoker	26.7
No Leisure Time for Physical Activity	57.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	95.4
Elderly	62.6
English Speaking	62.1
Foreign-born	13.2
Outdoor Workers	23.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	37.2
Traffic Density	83.8
Traffic Access	87.4
Other Indices	—
Hardship	31.4
Other Decision Support	—
2016 Voting	89.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	47.0000
Healthy Places Index Score for Project Location (b)	54.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	2 story building, adjusted lot acreage
Construction: Construction Phases	Schedule adjusted 4/28/26 per client feedback
Construction: Off-Road Equipment	Client specific details, updated 4/28/26
Construction: Dust From Material Movement	Project specific details
Operations: Energy Use	Solar system is designed to have 50% coverage
Operations: Water and Waste Water	Wastewater treatment emissions were modeled assuming 100 percent aerobic treatment consistent with the City of Santa Rosa Subregional Water Reclamation System; no septic or facultative lagoon treatment is applicable. Wastewater solids treatment was modeled assuming 100 percent anaerobic digestion with cogeneration from combustion of digester gas, consistent with Santa Rosa's Laguna Treatment Plant operations
Operations: Solid Waste	Solid waste landfill gas treatment was modeled assuming 100 percent landfill gas energy recovery, consistent with Sonoma County Central Disposal Site landfill-gas-to-energy operations.

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Lot Area	acre	1.52204	0.88000

Landscape Area	sq. ft	—	11,500.0

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Demolition	Demolition	End Date	6/30/2026	7/8/2026
Demolition	Demolition	Work Days per Phase	10.00000	17.0000
Site Preparation	Site Preparation	Start Date	7/1/2026	6/16/2026
Site Preparation	Site Preparation	End Date	7/2/2026	7/8/2026
Site Preparation	Site Preparation	Work Days per Phase	1.000000	17.0000
Grading	Grading	Start Date	7/3/2026	7/13/2026
Grading	Grading	End Date	7/5/2026	7/17/2026
Grading	Grading	Work Days per Phase	2.00000	5.00000
Building Construction	Building Construction	Start Date	7/6/2026	7/20/2026
Building Construction	Building Construction	End Date	11/23/2026	4/1/2027
Building Construction	Building Construction	Work Days per Phase	100.0000	184.000
Building Construction	Building Construction	Description	—	support equipment entire construction duration
Paving	Paving	Start Date	11/24/2026	6/25/2027
Paving	Paving	End Date	12/1/2026	7/1/2027
Paving	Paving	Description	—	actual paving

8.4.2. Off-Road Equipment

Phase Name	Equipment Type	Model Parameter	Default Value	New Value
Demolition	Concrete/Industrial Saws	Engine Tier	Average	Tier 4 Final
Demolition	Concrete/Industrial Saws	Hours Per Day	8.00000	3.00000
Demolition	Rubber Tired Dozers	Engine Tier	Average	Tier 4 Final

Demolition	Rubber Tired Dozers	Hours Per Day	1.000000	2.00000
Demolition	Tractors/Loaders/Backhoes	Engine Tier	Average	Tier 4 Final
Demolition	Tractors/Loaders/Backhoes	Hours Per Day	6.00000	7.00000
Site Preparation	Trenchers	Engine Tier	Average	Tier 4 Final
Site Preparation	Trenchers	Hours Per Day	8.00000	4.00000
Site Preparation	Trenchers	Horsepower	148.000	49.0000
Site Preparation	Plate Compactors	Hours Per Day	8.00000	6.00000
Site Preparation	Plate Compactors	Horsepower	84.0000	8.00000
Site Preparation	Plate Compactors	Load Factor	0.37000	0.43000
Landscaping site prep	Dumpers/Tenders	Engine Tier	Average	Tier 4 Final
Landscaping site prep	Dumpers/Tenders	Hours Per Day	8.00000	6.00000
Landscaping site prep	Dumpers/Tenders	Horsepower	148.000	180.000
Landscaping site prep	Dumpers/Tenders	Load Factor	0.41000	0.38000
Landscaping site prep	Plate Compactors	Hours Per Day	8.00000	4.00000
Landscaping site prep	Plate Compactors	Horsepower	84.0000	8.00000
Landscaping site prep	Plate Compactors	Load Factor	0.37000	0.43000
Paving Preparation	Rubber Tired Loaders	Engine Tier	Average	Tier 4 Final
Paving Preparation	Rubber Tired Loaders	Hours Per Day	8.00000	4.00000
Paving Preparation	Rubber Tired Loaders	Horsepower	148.000	124.000
Paving Preparation	Rubber Tired Loaders	Load Factor	0.41000	0.36000
Paving Preparation	Tractors/Loaders/Backhoes	Engine Tier	Average	Tier 4 Final
Paving Preparation	Tractors/Loaders/Backhoes	Hours Per Day	8.00000	4.00000
Grading	Graders	Engine Tier	Average	Tier 4 Final
Grading	Rubber Tired Dozers	Engine Tier	Average	Tier 4 Final
Grading	Tractors/Loaders/Backhoes	Engine Tier	Average	Tier 4 Final
Grading	Tractors/Loaders/Backhoes	Hours Per Day	7.00000	6.00000
Building Construction	Aerial Lifts	Engine Tier	Average	Tier 4 Final
Building Construction	Aerial Lifts	Number per Day	1.000000	2.00000

Building Construction	Aerial Lifts	Hours Per Day	4.00000	6.00000
Building Construction	Aerial Lifts	Horsepower	367.000	74.0000
Building Construction	Forklifts	Engine Tier	Average	Tier 4 Final
Building Construction	Forklifts	Number per Day	2.00000	1.000000
Building Construction	Forklifts	Hours Per Day	6.00000	2.00000
Building Construction	Tractors/Loaders/Backhoes	Engine Tier	Average	Tier 4 Final
Building Construction	Tractors/Loaders/Backhoes	Number per Day	2.00000	1.000000
Building Construction	Tractors/Loaders/Backhoes	Hours Per Day	8.00000	6.00000
Landscaping	Trenchers	Engine Tier	Average	Tier 4 Final
Landscaping	Trenchers	Horsepower	367.000	49.0000
Landscaping	Trenchers	Load Factor	0.29000	0.41000
Landscaping	Tractors/Loaders/Backhoes	Engine Tier	Average	Tier 4 Final
Landscaping	Tractors/Loaders/Backhoes	Number per Day	2.00000	1.000000
Landscaping	Tractors/Loaders/Backhoes	Hours Per Day	8.00000	5.00000
Landscaping	Tractors/Loaders/Backhoes	Horsepower	84.0000	97.0000
Building Foundations	Cement and Mortar Mixers	Hours Per Day	4.00000	8.00000
Building Foundations	Cement and Mortar Mixers	Horsepower	367.000	10.00000
Building Foundations	Cement and Mortar Mixers	Load Factor	0.29000	0.56000
Building Support - Air Comp	Air Compressors	Horsepower	367.000	5.00000
Building Support - Air Comp	Air Compressors	Load Factor	0.29000	0.45000
Cranes	Cranes	Engine Tier	Average	Tier 4 Final
Cranes	Cranes	Hours Per Day	4.00000	8.00000
Welders	Welders	Engine Tier	Average	Tier 4 Final
Welders	Welders	Hours Per Day	4.00000	8.00000
Welders	Welders	Horsepower	367.000	46.0000
Welders	Welders	Load Factor	0.29000	0.45000
Paving	Paving Equipment	Engine Tier	Average	Tier 4 Final
Paving	Paving Equipment	Number per Day	4.00000	1.000000

Paving	Paving Equipment	Hours Per Day	6.00000	8.00000
Paving	Paving Equipment	Horsepower	10.00000	130.000
Paving	Paving Equipment	Load Factor	0.56000	0.36000
Paving	Pavers	Engine Tier	Average	Tier 4 Final
Paving	Pavers	Hours Per Day	7.00000	8.00000
Paving	Rollers	Engine Tier	Average	Tier 4 Final
Paving	Rollers	Hours Per Day	7.00000	8.00000
Paving	Rollers	Horsepower	36.0000	80.0000
Paving	Sweepers/Scrubbers	Engine Tier	Average	Tier 4 Final
Paving	Sweepers/Scrubbers	Hours Per Day	7.00000	2.00000
Paving	Sweepers/Scrubbers	Horsepower	84.0000	85.0000
Paving	Sweepers/Scrubbers	Load Factor	0.37000	0.39000
Arch.Coating Air Comp	Air Compressors	Engine Tier	Average	Tier 4 Final
Arch.Coat. Lifts Initial	Aerial Lifts	Engine Tier	Average	Tier 4 Final
Arch.Coat. Lifts Initial	Aerial Lifts	Hours Per Day	6.00000	8.00000
Arch.Coat. Lifts Initial	Aerial Lifts	Horsepower	37.0000	74.0000
Arch.Coat. Lifts Initial	Aerial Lifts	Load Factor	0.48000	0.29000
Arch Coat Lifts Final	Aerial Lifts	Engine Tier	Average	Tier 4 Final
Arch Coat Lifts Final	Aerial Lifts	Hours Per Day	6.00000	8.00000
Arch Coat Lifts Final	Aerial Lifts	Horsepower	37.0000	74.0000
Arch Coat Lifts Final	Aerial Lifts	Load Factor	0.48000	0.29000

8.4.4. Dust from Material Movement

Phase Name	Model Parameter	Units	Default Value	New Value
Site Preparation	Material Imported	Cubic Yards	—	0.00000
Site Preparation	Material Exported	Cubic Yards	—	1,981.00
Site Preparation	Total Acres Graded	acres	0.00000	1.000000
Landscaping site prep	Material Imported	Cubic Yards	—	10.00000

Landscaping site prep	Material Exported	Cubic Yards	—	0.00000
Landscaping site prep	Total Acres Graded	acres	0.00000	0.50000
Paving Preparation	Material Imported	Cubic Yards	—	0.00000
Paving Preparation	Material Exported	Cubic Yards	—	0.00000
Paving Preparation	Total Acres Graded	acres	0.00000	0.50000

8.5. Operations

8.5.3. Energy Usage

Land Use	Model Parameter	Units	Default Value	New Value
High School	Electricity	kWh/yr	298,641	149,320
High School	Electricity (Subject to Title 24)	kWh/yr	238,928	119,464
High School	Electricity (Not Subject to Title 24)	kWh/yr	59,712.7	29,856.4

8.5.4. Water and Waste Water

Land Use	Model Parameter	Units	Default Value	New Value
High School	Outdoor Water	gal/year	228,931	228,931
High School	Treated by Septic Tank	%	10.3300	0.00000
High School	Treated by Aerobic Processes	%	87.4600	100.0000
High School	Treated by Facultative Lagoons	%	2.21000	0.00000
High School	Anaerobic Digestion with Combustion of Digester Gas	%	100.0000	0.00000
High School	Anaerobic Digestion with Cogeneration from Combustion of Digester Gas	%	0.00000	100.0000

8.5.5. Solid Waste

Land Use	Model Parameter	Units	Default Value	New Value
High School	Landfill No Gas Capture	%	6.00000	0.00000

High School	Landfill Capture Gas Flare	%	94.0000	0.00000
High School	Landfill Capture Gas Energy	%	0.00000	100.0000

Appendix A -2

Health Risk Assessment

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Santa Rosa City Schools Construction Health Risk Assessment

New District Office and Education Center Project
211 Ridgway Avenue, Santa Rosa, California

Prepared for

Santa Rosa City Schools
110 Stony Point Road, Suite 210
Santa Rosa, California 95401

Prepared by

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6/5/2026

Project Number C102.001.004

terraphase engineering

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1 Introduction

The Santa Rosa City Schools (District) proposes the New District Office and Education Center Project (Project) at 211 Ridgway Avenue in the City of Santa Rosa, Sonoma County, California. The Project would include the demolition of existing facilities on the Project site and the construction and operation of new facilities to accommodate four key District departments: Human Resources; Special Services, including the Adult Transition Program; Educational Services; and Business Services, which includes Child Nutrition Services, Information Technology, Maintenance and Operations, and the Warehouse. This health risk assessment (HRA) was conducted to evaluate the potential cancer risk and noncancer health impacts associated with exposure to diesel particulate matter (DPM) and other toxic air contaminants (TACs) emitted during project demolition and construction activities at nearby sensitive receptors.

2 Location

Santa Rosa City Schools' New District Office and Education Center Project is located at 211 Ridgway Avenue in the City of Santa Rosa, Sonoma County, California. Figure 1 shows the location of the school. Notable receptors near the Project include residences and the adjacent Ridgway High School.

3 Health Risk Assessment

An HRA was conducted to evaluate the potential health impacts by the Project on nearby receptors. This report details the key assumptions and results of the HRA, which was conducted following the Office of Environmental Health Hazard Assessment (OEHHA), California Air Resources Board (CARB), and Bay Area Air District HRA guidelines.

An HRA is designed to provide information to state and local agencies as well as to the general public on the extent of airborne emissions from stationery and mobile sources and the potential public health impacts of those emissions. The standard approach currently used for HRAs was originally proposed by the National Academy of Sciences in 1983 and was updated in 1994. The methodology outlined in these reports presents four key steps involved in the risk assessment process:

- Hazard Identification
- Exposure Assessment
- Dose-Response Assessment
- Risk Characterization

Hazard identification involves identifying the pollutants of concern emitted by a facility or project and the types of adverse health effects associated with exposure to those chemicals, including

whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects.

Exposure assessment is used to estimate the extent of public exposure to emitted substances. In practice, this means estimating exposure levels for each emitted substance for which potential cancer risk or non-cancer health hazards for acute (short-term or short contact) and chronic (long-term) exposures would be evaluated. This involves emission quantification, modeling of environmental transport (air dispersion modeling), evaluation of environmental fate (where the chemical ends up), identification of exposure routes (how a person comes into contact with a chemical), identification of exposed populations, and estimation of short-term (acute) and long-term (chronic) exposure levels.

Dose-response assessment is the process of characterizing the relationship between exposure to a chemical and incidence of an adverse health effect in exposed populations. In quantitative carcinogenic risk assessment, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with an estimated exposure. It is assumed in cancer risk assessments that risk is directly proportional to dose, and that there is no threshold for a person's body to deal with the exposure that would reduce the harm. For noncarcinogenic effects, dose-response data developed from animal and human studies are used to develop noncancer Reference Exposure Levels (RELs). These RELs are defined as the concentration at which no adverse noncancer health effects are anticipated, even in sensitive members of the general population. Unlike cancer health effects, noncancer health effects are generally assumed to have thresholds for adverse effects. In other words, a pollutant would not cause harm until exposure to that pollutant has reached or exceeded a certain concentration and/or dose (the REL). The RELs are air concentrations intended to indicate the threshold below which no health effects would occur for the general population.

Risk characterization is the final step of risk assessment. In this step, modeled concentrations and exposure information are combined with potency factors and RELs that are developed through dose-response assessment. The result is a total cancer risk or hazard index that indicates the potential chance that exposure to the pollutants would result in hazardous health effects.

Even with the detailed process and methodology outlined above, there is uncertainty with any HRA. The uncertainty comes from lack of adequate data in many areas, which makes it necessary to rely on assumptions. The assumptions used in an HRA are designed to err on the side of protecting human health and are intended to avoid underestimation of risk to the public. Therefore, conservative assumptions are built into the HRA process.

Any individual assumption may overestimate or underestimate the actual risk. Key assumptions that result in uncertainty include extrapolation of toxicity data from animals to humans, estimation of emissions, assumptions used in air dispersion models, and assumptions used to estimate exposure. Variation in measured parameters and variation among the human population (e.g., height, weight, breathing rate, and susceptibility to chemical toxicity) all lead to increased uncertainty. Interaction between chemicals is assumed to be additive for cancer and non-cancer health impacts affecting the same target organ or system. In the case of substances that could act synergistically, the HRA may underestimate the risks. For substances with antagonistic effects that cancel the effect of other substances, the HRA may overestimate risk.

Chronic and cancer health effects estimated over short periods such as construction activity have additional uncertainty. Cancer potency factors are based on animal lifetime studies or worker studies with long-term exposure (lifetime exposures of 30 to 70 years) to the carcinogenic agent. Considerable uncertainty exists in trying to evaluate the cancer risk from a project that would last only a small fraction of a lifetime. Some studies indicate that the dose rate changes the potency of a given dose of a carcinogenic chemical. In other words, a dose delivered over a short period may have a different potency than the same dose delivered over a lifetime (OEHHA 2015).[1] Given that HRAs involve uncertainty, it is important to keep in mind that risk estimates generated by an HRA should not be interpreted as the expected rates of disease in the exposed population, but rather an estimate of the potential for disease based on current knowledge and identified assumptions.

4 Chemicals of Concern

One of the first steps in preparing an HRA is to identify the potential chemicals of concern. OEHHA has identified a list of chemicals that are identified in California as TACs and has determined appropriate toxicity factors for these chemicals for use in HRAs. For the Project, the primary chemical of concern is diesel particulate matter (DPM), which is emitted from the various types of diesel-fueled equipment planned to be utilized for the Project.

Diesel exhaust is a complex mixture of chemicals that includes hundreds of individual constituents. In addition to being identified by the State of California as a known carcinogen, diesel exhaust also has chronic health effects. DPM does not have a toxicity factor for acute health impacts. Construction equipment emits DPM.

5 Toxic Air Contaminant Emissions

To determine the total emissions expected from the Project, emissions were estimated for each type of equipment by multiplying the expected usage during periods of the Project, rated horsepower, load factor, and DPM emission factor.

Table 1 shows the emissions estimated for the Project.

Table 1: Project Emissions in Grams

Start Date	End Date	Equipment Type	Usage Hours	Rated Horse power	Load Factor	DPM Emission Factor (g/bhp-hr)	DPM Emissions (g)
6/16/26	7/8/26	Concrete/Industrial Saws	51	3	0.73	0.169	18.87561

[1] https://oehha.ca.gov/sites/default/files/media/downloads/crnr/2015gmappendicesgj.pdf

Start Date	End Date	Equipment Type	Usage Hours	Rated Horse power	Load Factor	DPM Emission Factor (g/bhp-hr)	DPM Emissions (g)
6/16/26	7/8/26	Dumpers/Tenders	119	180	0.38	0.041	333.7236
6/16/26	7/8/26	Excavators	119	158	0.38	0.049	350.09324
6/16/26	7/8/26	Rubber Tired Dozers	34	367	0.4	0.142	708.7504
6/16/26	7/8/26	Tractors/Loaders/Back hoes	119	84	0.37	0.063	233.00676
6/16/26	7/8/26	Trenchers	68	49	0.41	0.141	192.62292
6/16/26	7/8/26	Plate Compactors	102	8	0.43	0.162	56.84256
6/16/26	7/8/26	Rubber Tired Loaders	68	124	0.36	0.073	221.59296
7/20/26	4/1/27	Forklifts	368	82	0.2	0.112	675.9424
7/20/26	4/1/27	Aerial Lifts	2208	74	0.29	0.031	1468.89408
7/20/26	4/1/27	Tractors/Loaders/Back hoes	1104	84	0.37	0.063	2161.67616
7/20/26	8/7/26	Cement and Mortar Mixers	120	10	0.56	0.163	109.536
8/10/26	9/18/26	Air Compressors	120	78	0.48	0.099	444.7872
8/10/26	8/17/26	Cranes	48	367	0.29	0.075	383.148
8/10/26	9/4/26	Welders	160	46	0.45	0.141	466.992
5/3/27	6/24/27	Rubber Tired Loaders	156	124	0.36	0.063	438.72192
5/3/27	6/24/27	Tractors/Loaders/Back hoes	156	84	0.37	0.054	261.81792
5/3/27	7/1/27	Plate Compactors	88	8	0.43	0.162	49.04064
6/25/27	7/1/27	Pavers	40	81	0.42	0.119	161.9352
6/25/27	7/1/27	Paving Equipment	40	130	0.36	0.068	127.296
6/25/27	7/1/27	Rollers	40	80	0.38	0.105	127.68
6/25/27	7/1/27	Sweepers/Scrubbers	10	85	0.39	0.091	30.1665
7/1/27	10/1/27	Air Compressors	402	5	0.45	0.173	156.4785
7/12/27	7/20/27	Aerial Lifts	56	74	0.29	0.03	36.0528
9/22/27	9/30/27	Aerial Lifts	56	74	0.29	0.03	36.0528
9/1/27	10/1/27	Tractors/Loaders/Back hoes	115	97	0.37	0.054	222.8769
9/1/27	10/1/27	Trenchers	92	49	0.41	0.122	225.49016
9/1/27	9/10/27	Dumpers/Tenders	48	180	0.38	0.039	128.0448

Start Date	End Date	Equipment Type	Usage Hours	Rated Horse power	Load Factor	DPM Emission Factor (g/bhp-hr)	DPM Emissions (g)
9/1/27	9/13/27	Plate Compactors	36	8	0.43	0.162	20.06208
						Total DPM Emissions (g)	9848.2
						Total DPM Emission Rate (g/s)	0.000241

6 Air Dispersion Modeling

Modeling was performed using United States Environmental Protection Agency's AERMOD executable version 24142 (United States Environmental Protection Agency 2024). AERMOD was used to estimate breathing-zone concentrations of TACs at receptor locations, which are then used to perform the exposure and risk assessment to calculate the potential cancer risk and non-cancer health impacts at each receptor location (discussed in the next three chapters). The inputs and assumptions used in the model are summarized below.

Emission Rate: A unit emission rate (1 gram per second) was used in the AERMOD analysis, which allows for the AERMOD results or dispersion factors to be multiplied by project-specific emission rates (in units of grams per second) to identify the project-specific ambient air concentrations because there is a linear relationship.

Meteorological Data: Surface and upper air meteorological data was obtained from National Centers for Environmental Information (NCEI)[2]. Charles M. Schulz–Sonoma County Airport was the meteorological station selected for surface data due to proximity to the Project. Oakland San Fransico Bay Airport is the nearest meteorological station to the Project with available radiosonde observation data. Five years of meteorological data are desired for non-site-specific meteorological data and one year of site-specific data. NCEI had data available for 2020, 2021, 2022, 2023, and 2024. The meteorological data was processed in AERMET[3] to generate surface data and profile data files for use in AERMOD.

Terrain: AERMOD uses the preprocessor AERMAP to incorporate terrain elevation into the model. Terrain and elevation data were imported from the United States Geological Survey's National Elevation Data set with 1 arc-second resolution.

Urban Source Designation: AERMOD allows the option to designate sources as urban or rural. Selecting the urban option accounts for heat island effects. This requires the user to enter a population for the area. A population of 180,000, which is roughly the population of Santa Rosa, was used. The default surface roughness of 1 meter was used.

[2] https://www.ncei.noaa.gov/

[3] https://www.epa.gov/scram/meteorological-processors-and-accessory-programs#aermet

Receptors: A total of 7,461 receptors were established for this analysis. A nested receptor grid was used to model receptors with 25 meter spacing from 0-1km away from the Project, 50 meter spacing from 1-2km away from the Project, and 100 meter spacing was used for 2-3km away from the Project.

Source Parameters: Emissions from the Project were modeled as volume sources. Volume source types are commonly used when emissions initially disperse three-dimensionally with no upward velocity of the plume. Volume sources are defined by their release height, initial vertical dimension (plume depth), and initial lateral dimension (plume width). 165 volume sources were used to cover the Project area, each with a release height of 5 meters, initial vertical dimension of 1.16 meters, and initial lateral dimension of 1.16 meters.

Output: The output of AERMOD is the annual average air concentration in units of micrograms per cubic meter ($\mu g/m^3$) at each receptor in the model for each group of sources.

7 Exposure Assessment

Potential receptors were characterized as high school students and residents. The maximum exposed high school student receptor and maximum exposed resident receptor is reported.

Risk assessment guidelines from OEHHA (2015)[4] recommend the exposure parameters used to estimate excess lifetime cancer risks and chronic non-cancer Hazard Index (HI) for all potentially exposed populations.

The inhalation dose is a function of the concentration of a chemical and the intake of that chemical. The dose can be calculated as follows:

$$Dose = \frac{Conc * DBR * ET * EF * ED * CF}{AT}$$

Where:

Dose	=	Dose of chemical (milligrams per kilogram-day [mg/kg-day])
Conc	=	Chemical concentration in air (micrograms per cubic meter [$\mu g/m^3$])
DBR	=	Daily breathing rate (liters per kilogram-day [L/kg-day])
ET	=	Exposure time (hours/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
AT	=	Averaging time (days)
CF	=	Conversion factor (cubic meters per liter [m^3/L] and mg/µg)

[4] https://oehha.ca.gov/sites/default/files/media/downloads/crnr/2015guidancemanual.pdf

The DBR was set to the 95th percentile for the third trimester of pregnancy, ages 0 to 2 years. The 80th percentile DBR was used for ages 2 to 15 years and 16 to 30 years as recommended by CAPCOA (2015) and BAAD. The exposure frequency was assumed to be the calendar days for a given year for the school. The averaging time was based on 70 years. The details of the exposure factors for the receptors are shown in Table 3.

Table 3: Exposure Factors

Sensitive Population Type	Age	DBR	EF	TAF	TAF	CF	A	ED	ASF	AT
High School Student	2<16	572	183	4.2	1	1e-6	1	1.29	1.5	25550
	3rd trimester	361	365	1	1	1e-6	1	0.25	10	25550
Resident	0<2	1090	365	1	1	1e-6	1	1.04	10	25550

8 Toxicity Assessment

A risk (or toxicity) assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories: cancer and non-cancer endpoints. Toxicity values, used to estimate the likelihood of adverse effects occurring in humans at different exposure levels, are identified as part of the toxicity assessment component of a risk assessment.

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The upper-bound incremental probability means that the “true carcinogenic risk” of an individual is unlikely to exceed the model-derived cancer risk estimates and, therefore, is likely to be less than the predicted (modeled) risk. Therefore, the modeled cancer risks would represent a conservative scenario. For this HRA, the estimated excess lifetime cancer risk for a high school student and resident is adjusted using the age sensitivity factors (ASFs) or exposure factors recommended by OEHHA (2015). This approach accounts for an “anticipated special sensitivity to carcinogens” of infants and children. Cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures that occur from 2 years through 15 years of age. No weighting factor (i.e., an ASF of 1, which is equivalent to no adjustment) is applied to exposure from ages 16 to 70 years. These ASFs are shown in Table 3.

The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs if the chemical is being inhaled) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_i = Dose * CPF_i * ASF$$

Where:

$Risk_i$	=	Cancer risk, the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
Dose	=	Dose of chemical (mg/kg-day)
CPF_i	=	Cancer potency factor for chemical "i" (mg chemical/kg body weight-day)$^{-1}$
ASF	=	Age sensitivity factor (unitless)

The CPFs for potential carcinogens are shown in Table 4.

Table 4: Toxicity Values for TACs in HRA

Substance	Cancer Potency Factor (mg/kg-d)$^{-1}$	Chronic REL (µg/m^3)	Chronic REL Target Organ
Diesel Particulate Matter	1.1	5	Respiratory system

The potential for chemical exposure to result in chronic (long-term) non-cancer effects is evaluated by comparing the estimated annual average air concentration to the chemical-specific non-cancer chronic RELs. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding a hazard index.

The equations used to calculate the chemical-specific HQs and the overall HI are as follows:

$$Chronic\ HQ_i = C_i / REL_i$$

$$Chronic\ HI = \sum HQ_i$$

Where:

Chronic HQ_i	=	Chronic hazard quotient for chemical "i" (unitless)
Chronic HI	=	Hazard index (unitless)
C_i	=	Annual average air concentration for chemical "i" (µg/m^3)
REL_i	=	Chronic non-cancer reference exposure level for chemical "i" (µg/m^3)

In summing values for a hazard index, the organ end point (e.g., respiratory system, nervous system) is considered and only those chemicals that have the same target organ end point are summed together. This assessment conservatively summed all chemicals regardless of target organ endpoint and therefore

results in a conservative estimate of the hazard index. Table 4 contains the CPF and chronic RELs used in this HRA.

9 Risk Characterization and HRA Results for the Proposed Project

9.1 Cancer Risk

This analysis determined that there are no receptor locations with a cancer risk that results in an excess cancer risk above 10 excess cancers in a population of 1 million people, which is Bay Area Air District's California Environmental Quality Act (CEQA) threshold of significance for air toxics. As shown in Figure 1, the highest cancer risk for a high school student attending the adjacent Ridgway High School is estimated to be 0.02 in a million and the highest cancer risk for nearby residents is 0.15 in a million. Therefore, the project will not exacerbate existing exposure to air toxics.

9.2 Non-Cancer Chronic Hazard Index

The chronic HI is used to estimate the long-term non-cancer health impacts. The maximum Chronic HI is 0.000439, located immediately North of the project boundary. Chronic HI below 1 is considered to indicate that exposure would not result in any adverse health effects, while those above 1 indicate that receptors may experience health effects consistent with Bay Area Air District's CEQA threshold of significance for air toxics. For chronic non-cancer health impacts, the order of magnitude above 1 does not correspond linearly to an increased magnitude of non-cancer health effects (i.e., a chronic HI of 2 does not indicate twice the likelihood of non-cancer health effects compared to a chronic HI of 1), unlike cancer risks where a cancer risk of 2 in a million is twice as likely to occur compared to a risk of 1 in a million. The chronic HI from the gas station may be lower than estimated since it is based on maximum permitted capacity rather than actual throughput. The proposed project does not result in an HI greater than 1 in any location. Therefore, the project will not exacerbate existing exposure to air toxics.

9.3 Uncertainty

This HRA provides an estimate of the health impacts by the Project on nearby receptors. Some of the air dispersion source characteristics were estimated and actual values may vary from these generalized parameters used in this HRA. Traffic on nearby roadways could contribute additional emissions particularly from heavy trucks emitting diesel exhaust. Information to model the offsite truck traffic was not readily available.

9.4 Conclusion

The results of this HRA indicate that activities associated with this project **will not** exceed Bay Area Air District's CEQA significance thresholds for air toxics. Therefore, the proposed New District Office and Education Center Project will not exacerbate existing exposure to air toxics.

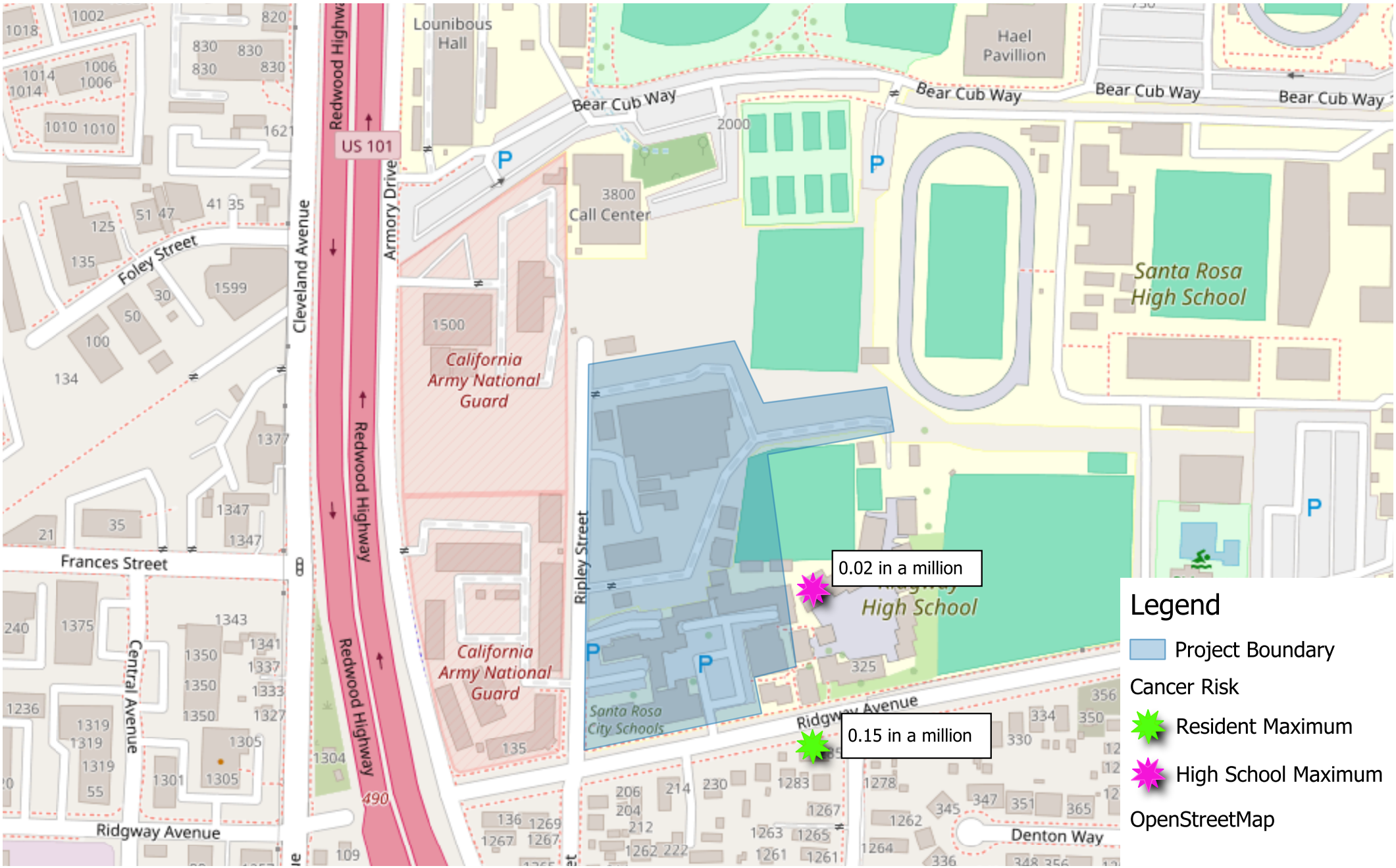


Figure 1. Project Location and Cancer Risk

Appendix B

Biological Resources

BIOLOGICAL RESOURCE ASSESSMENT

on the

Santa Rosa City Schools District Office Project

211 Ridgway Avenue

Santa Rosa, California

prepared for

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3 June 2026

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BIOLOGICAL RESOURCES

Background and Methods

Environmental Collaborative was retained by Terraphase Engineering to prepare a *Biological Resource Assessment* of the Santa Rosa City School District (District) headquarters site at 211 Ridgway Avenue in Santa Rosa, California. The site is approximately 8 acres in size and consists of district office buildings, portable buildings, paved parking, ornamental landscaping and scattered mature valley oak (*Quercus lobata*) tree. This report serves as the *Biological Resource Assessment* (BRA) of the site, providing a summary of the biological resources on the site, conclusions regarding presence or absence of any sensitive biological or wetland resources, and a review of biological issues associated with redevelopment of the site.

Biological resources on the site were identified through the review and compilation of existing information and conduct of a field reconnaissance survey. The review provided information on general resources in the site vicinity, and the distribution and habitat requirements of special-status species which have been recorded from or are suspected to occur in the Santa Rosa and surrounding Sonoma County area. Background information reviewed included: an arborist report surveying trees on the site in February 2024, a bird nesting survey of the site conducted in March 2026,[1] occurrence records of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW), mapping of critical habitat for federally-listed species designated by the U.S. Fish and Wildlife (USFWS), mapping of wetlands as part of the National Wetland Inventory prepared by the USFWS, and data available from the Santa Rosa Plain Conservation Strategy,[2] among other sources.

A field reconnaissance survey of the site was conducted on April 8, 2026 by James Martin, Principal of Environmental Collaborative (see **Appendix A**). The field survey was used to evaluate existing conditions on the site, assess the potential for suitable habitat for special-status species, confirm absence of any regulated waters, and determine whether any additional detailed surveys were necessary. The site was inspected during the survey, including visual inspections of the exterior existing buildings and mature trees for signs of possible bird nesting or bat roosting.

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[1] Monk & Associates, Inc., 2026. Nesting Bird Boxes Survey Report, Santa Rosa City Schools, 211 Ridgeway Avenue, Santa Rosa, APN 180-470-007. Report prepared for Felicia Silveira, Van Pelt Construction Services from Kayla Bean.

[2] U.S. Fish and Wildlife Service, 2005. *Santa Rosa Plain Conservation Strategy, Final*. December 1.

The following provides the results of the background information review, field survey and assessment for the BRA. No additional detailed surveys were considered warranted at this time, based on the disturbed conditions of the majority of the site. Follow-up preconstruction surveys would presumably be conducted to confirm absence of any new bird nests, if vegetation removal and building demolition is to be performed during the nesting season, which typically extends from February 1 to August 31 in the Sonoma County area.

SETTING

Vegetation and Wildlife Habitat

The site has been extensively disturbed by past construction and maintenance of the former District headquarters facilities. **Figure 1** consists of an aerial photograph of the District facilities on the site, delineated by the red boundary. As noted previously, most of the site has been developed with structures, impervious surfaces, and ornamental landscaping as part of the District facilities. Four mature valley oak trees are located on the site and are proposed to be retained as part of the proposed District office plans. The range in size and condition, with trunk of 36 to 58 inches diameter at breast height (DBH). Other smaller trees to be removed are described in the 2024 Arborist Report, and include 3 sweetgum (*Liquidambar styraciflua*) and one coast live oak (*Quercus agrifolia*), all with trunk diameters of 14 inches or less.

The developed condition of the site has relatively low wildlife habitat values due to the limited vegetative cover and impervious surfaces. The scattered trees do provide foraging, roosting, and possibly nesting opportunities to species common in suburban habitats, such as American robin, California towhee, scrub jay, and mourning dove, among others. Structures could be used for nesting by non-native species such as English sparrow, house finch, house mouse, and rats. However, the structures are sealed and there were no signs of use by bats.

FIGURE 1. SITE LOCATION



Special-Status Species

Special-status species[3] are plants and animals that are legally protected under the state and/or federal Endangered Species Acts[4] or other regulations, as well

[3] Special-status species include: designated rare, threatened, or endangered and candidate species for listing by the CDFW; designated threatened or endangered and candidate species for listing by the USFWS and National Marine Fisheries Service (NOAA Fisheries); species considered rare or endangered under the conditions of Section 15380 of the *CEQA Guidelines*, such as those plant species identified with a Rare Plant Rank of 1A, 1B and 2 in the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (Inventory); and possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those with a Rare Plant Rank of 3 in the California Native Plant Society's *Inventory* or identified as "California Special Concern" species by the CDFW.

as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[5] of these species.

A habitat suitability assessment was conducted as part of the field survey to determine whether suitable habitat for any special-status species occurs on the site. The following provides a summary of conclusions regarding possible presence or absence of special-status species on the site.

Special-Status Plants. As indicated in **Figure 2**, no specific occurrences of special-status plant species have been reported from the site by the CNDDB. General occurrences of bent-flowered fiddleneck (*Amsinckia lunaris*) and Santa Cruz clover (*Trifolium buckwestiorum*) extend over the site vicinity, mapped by the CNDDB based on poorly described historic collections from the “Santa Rosa” area. A summary table providing information on name, status and occurrence data for each of the species reported by the CNDDB in the vicinity of the site is contained in **Appendix B**. However, past development and the extent of urbanization in the vicinity precludes the occurrence of any special-status plant species known or suspected to occur in the Santa Rosa area. These include: Sonoma sunshine (*Blennospera bakeri*), Burke's goldfields (*Lasthenia burkei*), legenere (*Legenere limosa*), Sebastopol meadowfoam (*Limnanthes vinculans*), many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*), Baker’s navarretia (*Navarretia leucocephala* ssp. *Bakeri*), and two-fork clover (*Trifolium amoenum*), among others. Based on observed conditions on the site and absence of suitable habitat, no special-status plant species are suspected to occur on the site due to the extent of past and on-going disturbance.

Special-Status Animal Species. **Figure 3** shows the distribution of known occurrences of special-status animal species reported from about a three-mile radius of the site and **Table 1** provides a summary of the special-status animal species considered to occur in the site vicinity. A summary table providing information on name, status and occurrence data for each of the species reported by the CNDDB in the vicinity of the site is contained in **Appendix B**.

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[4] The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

[5] "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.

However, suitable habitat for special-status animal species is generally absent from the site. This includes absence of suitable breeding, dispersal, or essential foraging habitat for listed species such as the federally-endangered and State-threatened California tiger salamander (*Ambystoma californiense*), the State and federally-endangered

TABLE 1. SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR IN SITE VICINITY

Species Name	Status (Federal/State)[a]	Habitat Characteristics (Occurrence within the Site Vicinity)
Fish/Amphibians/Reptiles		
California tiger salamander	FT/ST, SSC	Grassland and open woodlands with temporary or permanent (unlikely)
Western pond turtle	PT/SSC	Ponds, marshes, rivers and streams (unlikely)
California red-legged frog	FT/SSC	Permanent ponds, pools, and streams (unlikely)
Foothill yellow-legged frog	-/SSC	Perennial streams (unlikely)
Steelhead trout Central California ESU	FT/SSC	Perennial and intermittent streams (unlikely)
Birds		
Golden eagle	-/SSC, CP	Open mountains, foothills, and canyons (unlikely)
Burrowing owl	-/C, SSC	Open grassland and fields, farms, and ruderal areas (unlikely)
Cooper's hawk	-/-	Riparian and woodland habitat (unlikely)
Sharp-shinned hawk	-/-	Riparian and woodland habitat (unlikely)
Northern harrier	-/SSC	Marshes, fields, and grassland (unlikely)
White-tailed kite	-/CP	Open foothills, marshes, and grassland (possible)
California horned lark	-/-	Open habitat with sparse cover (unlikely)
Yellow warbler	-/SSC	Riparian and woodland habitat (unlikely)
Prairie falcon	-/-	Canyons, mountains, open grassland (foraging possible)
Peregrine falcon	Delisted/ Delisted, CP	Canyons, mountains, open grassland (foraging possible)
Loggerhead strike	-/SSC	Open habitat with scattered trees, shrubs, and other perches (unlikely)
Mammals		
American badger	-/SSC	Open grassland, scrub and savanna (unlikely)
Pallid bat	-/SSC	Roosts in tree hollows, crevices, unused structures (foraging possible)
Townsend western big-eared bat	-/SSC	Roosts in caves, mines, and unused buildings (foraging possible)
Western red bat	-/SSC	Roosts in trees (possible)
Little brown bat	-/-	Roosts in caves and buildings (foraging possible)
Hoary bat	-/-	Roosts in trees (possible)
Yuma bat	-/-	Roosts in caves, mines and buildings (foraging possible)

a: Status Designations:
Federal:
FE = Listed as Endangered under federal Endangered Species Act
FT = Listed as Threatened under federal Endangered Species Act
PE = Proposed for federal listing as "endangered"
PT = Proposed for federal listing as "threatened"

State:
SE = Listed as Endangered under the CESA
ST = Listed as Threatened under the CESA
C = Candidate species under review for listing, includes taxa for which the CDFW has sufficient biological information to support a proposal to list as endangered or threatened
CP = California fully protected species; may not be possessed or taken

California freshwater shrimp (*Syncaris pacifica*), the federally-threatened California red-legged frog (*Rana aurora draytonii*), the State-endangered and federally-threatened foothill yellow-legged frog (*Rana boylii*), and the proposed federally-threatened western pond turtle (*Actinemys marmorata*). The site is outside the mapped range and designated critical habitat of the Sonoma population of California tiger salamander (see **Figure 3**), and no records of California red-legged frog, foothill yellow-legged frog or California freshwater shrimp have been reported from site vicinity. Below is a discussion of species considered to have a remote potential for occurrence or dispersal through the site vicinity.

Western Pond Turtle. As indicated in **Figure 3**, occurrences of western pond turtle have been reported by the CNDDB along Santa Rosa and Matanzas Creek about a half mile southeast of the site. Western pond turtle is recognized as a California Species of Special Concern (SSC) by the CDFW[6] and was recently proposed for threatened status by the USFWS. Western pond turtles occur in a wide variety of aquatic habitats, including ponds, lakes, marshes, rivers, streams, and canals that typically have a rocky or muddy bottom and contain stands of aquatic vegetation. The presence or absence of pond turtles at a given aquatic location is largely dependent on the availability of suitable basking sites and adjacent upland habitat for egg-laying (e.g., sandy banks or grassy open fields) and over-wintering. There is no suitable habitat for western pond turtle on the site based on the absence of any creeks or other drainages.

Bird Species. Most of the special-status animal species known or suspected to occur in the site vicinity are bird species which may forage and possibly nest where suitable nesting substrate is present. These include: Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), western burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), yellow warbler (*Dendroica petechia*), white-tailed kite (*Elanus caeruleus*), California horned lark (*Eremophila alpestris actia*), prairie falcon (*Falco mexicanus*), American peregrine falcon (*Falco peregrinus*), and loggerhead shrike (*Lanius ludovicianus*). Golden eagle, northern harrier, yellow warbler, California horned lark, peregrine falcon, and loggerhead shrike are considered a SSC by the CDFW. White-tailed kite, peregrine falcon and golden eagle are fully protected species, and golden eagle is also protected under the federal Bald Eagle Protection Act. The other species are monitored to varying degrees by the CNDDB, focusing on nest locations. Some were previously considered a SSC by the CDFW, but have been removed from this list as new data indicates they are more abundant than previously believed.

The suitability of nesting habitat for bird species varies on the site. Suitable nesting habitat is absent on the site for American peregrine falcon, golden eagle,

[6] "Species of Special Concern" (SSC) have no legal protective status under the California Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations and other factors.

and prairie falcon due to the absence of cliffs and other nesting. These species may occasionally flow over and possibly forage through the Santa Rosa vicinity. Suitable ground nesting habitat for northern harrier, California horned lark, and western burrowing owl is also absent from the site, and the intensity of human activity limits the likelihood of routine foraging in the area. Potentially suitable habitat for the remaining species, and other more common bird species such as the great-horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) is present in the mature trees in the site vicinity. However, no conspicuous stick nests used by raptors were observed in the mature valley oaks on the site and no other active nests were detected during the field survey or during the bird nesting survey of the site conducted by Monk & Associates in March 2026, with the exception of nesting by non-native house sparrow (*Passer domesticus*) in the nesting boxes that were installed in the gated garden on the site. These nesting boxes are reportedly being monitored and removed as the birds complete their nesting this season.

Nests of native bird species are protected under the Migratory Bird Treaty Act (MBTA) when in active use, and nests of raptors (birds-of-prey) and other native birds are also protected under State Fish and Game Code when in active use. No nesting locations have been identified by the CNDDB for special-status bird species in the site vicinity or were observed during the field survey of the site. The two house sparrow nests observed in the nest boxes in the gated garden are not protected under the MBTA or State Code, because they are non-native and can outcompete native species. However, there remains a potential for new nests to be established in the mature trees and other locations in the future. Preconstruction surveys are typically performed to avoid disturbance or inadvertent abandonment of nests in active use when vegetation removal or construction is to be initiated during the nesting season (typically from February 1 through August 31).

Roosting Bats. Although no signs of bat activity were observed during the field survey, there remains a possibility that one or more common or special-status bat species may roost or forage in the site vicinity. This includes bat species considered to be SSC by the CDFW as indicated in **Table 1**. Pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), Yuma myotis (*Myotis.yumanensis*), and little brown bat (*M. lucifugus*) typically roost in caves, mines, rock crevices, unused buildings and bridge structures, but are known to roost in cavities of trees and snags. Hoary bat (*Lasiurus cinereus*) and western red bat (*Lasiurus blossevillii*) typically roost in trees. No large cavities or other preferred roosting habitat for special-status bat species was observed during the field survey. None of the structures had any sign of bat occupation during the field survey. However, there is a possibility that one or more species could roost in the dense foliage or cavities of the mature valley oaks, foraging over nearby playfields and other areas where insect prey are present.

Bees. A number of bee species have historic ranges that extend through central Sonoma County, including the Santa Rosa vicinity. These include Blennosperma vernal pool andrenid bee (*Andrena blennospermatis*); obscure bumble bee (*Bombus caliginosus*); Crotch bumble bee (*Bombus crotchii*); and western bumble bee (*Bombus ocidentalis*). Blennosperma vernal pool andrenid bee and obscure bumble bee have no conservation status but are monitored by the CNDDB because of noted declines in abundance and distribution. Crotch bumble bee and western bumble bee are both candidates for endangered status under the CESA. These special-status bee species all have similar habitat requirements, generally inhabiting undisturbed prairies and meadows. They require floral resources for nectaring and undisturbed underground cavities to use as nests, primarily in the form of small burrows. Threats facing bumblebees include habitat loss, pesticides, disease, invasive insects, and climate change.

Blennosperma vernal pool andrenid bee specifically requires *Blennosperma* plant species as their food source. Sonoma sunshine and other *Blennosperma* plant species are absent from the site given its developed condition, and given the absence of its food source and suitable vernal pool habitat, the Blennosperma vernal pool andrenid bee is not suspected to occur on the site. Western bumblebee has experienced a considerable range contraction and is now considered to be confined to higher elevations in the Sierra Nevada range and portions of the North Coast in California. Similarly, Crotch bumble bee has experienced a substantial decline in the northern part of its range and is now believed to be extirpated from the Santa Rosa vicinity. Obscure bumblebee has also experienced considerable declines in distribution with most occurrences in California now reported from coastal areas. Suitable habitat is not present on the site due to the developed condition and lack of nectaring plants that would attract these species.

Wetlands and Regulated Waters

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration and purification functions. The CDFW, Corps, and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to stream channels and other wetland features.[7]

[7] Jurisdiction of the Corps is established through the provisions of §404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters of the U.S.". Jurisdictional authority of the CDFW over wetland areas is established under §1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and

Based on a preliminary wetland assessment conducted as part of the site survey, regulated wetlands and waters are absent. No creeks, seasonal wetlands, vernal pools or other potential regulated waters are present on the site.

Sensitive Natural Communities

Sensitive natural communities are community types recognized by CDFW and other agencies because of their rarity. In the Santa Rosa vicinity, sensitive natural community types include riparian woodlands, vernal pools and swales, freshwater marsh and native grasslands. The CNDDB records indicate occurrences of northern hardpan vernal pools over a mile to the west and northwest of the site.

Based on the findings of the field survey, sensitive natural community types are absent on the site. Vernal pools, seasonal wetlands, native grasslands, freshwater marsh, and riparian natural communities are all absent from the site.

Relevant Local Goals, Policies, and Ordinances

Santa Rosa General Plan 2035

The Open Space and Conservation (OSC) Element of the General Plan 2035 includes the following goals and policies specific to biological resources. Although not subject to local land use approval in the same manner as private development, the District strives to achieve consistency with the identified policies and ordinances of the City of Santa Rosa.

Goal OSC-H: Conserve significant vegetation and trees and plant new trees.

- **Policy OSC-H-1**: Preserve trees and other vegetation, including wildflowers, both as individual specimens and as parts of larger plant communities.
- **Policy OSC-H-2:** Preserve and regenerate native oak trees.
- **Policy OSC-H-4:** Require incorporation of native plants into landscape plans for new development, where appropriate and feasible, especially in areas adjacent to open space areas or along waterways.

Santa Rosa City Code

The Santa Rosa City Code (SRCC) includes various directives to minimize adverse impacts to biological resources in Santa Rosa. The SRCC is organized by title, chapter, and section, and in some cases, articles. Most provisions related

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obtaining a Streambed Alteration agreement. The RWQCB is responsible for upholding state water quality standards pursuant to Section 401 of the Clean Water Act and for regulating wetlands under the Porter-Cologne Water Quality Act.

to biological resources are in Title 17, *Environmental Protection*, and Title 20, *Zoning*, including those related to trees, which are summarized as follows:

- **Chapter 17-24, *Trees*.** Santa Rosa adopted a Tree Ordinance in 1990 to ensure proper tree removal and preservation. Article 2, *Definitions*, requires a permit to remove or alter "heritage trees", "protected trees," and "street trees" in all zoning districts. Each of these are defined in the Tree Ordinance as follows:

  - **Heritage Tree**. The City defines a "heritage tree" as, "a tree or grove of trees so designated by a resolution of the Planning Commission and after the holding of a noticed public hearing, having a specific historical or cultural association or value due to its age, species, character, location, height and/or the circumstances of its planting or origin." Heritage trees also include native species with trunk diameters that exceed those specified in the Tree Ordinance for: California bay (*Umbellularia californica*), big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), California buckeye (Aesculus californica), canyon oak (*Quercus chrysolepis*), douglas fir (*Pseudotsuga menziesii*), interior live oak (*Quercus wislizeni*), California live oak (*Quercus agrifolia*), madrone (*Arbutus menziesii*), Oregon white oak (*Quercus garryana*), red alder (*Alnus oregona*), redwood (*Sequoia sempervirens*), valley oak (*Quercus lobata*), and white alder (*Alnus rhombifolia*).

  - **Protected Tree**. "Protected trees" are defined as, "any tree, including a heritage tree, designated to be preserved on an approved development plan or as a condition of a tentative map, a tentative parcel map, or other development approval issued by the City."

  - **Street Tree**. The City defines a "street tree" as, "any tree having a single trunk circumference greater than six and one-quarter inches or a diameter greater than two inches, a height of more than six feet, and one half or more of its trunk is within a public right-of-way or within five feet of the paved portion of a City street or a public sidewalk."

Santa Rosa Plain Conservation Strategy

The Santa Rosa Plain Conservation Strategy (SRPCS) seeks to create a long-term program to mitigate potential adverse effects on federally-listed species due to future development on the Santa Rosa Plain, bordered on the south and west by the Laguna de Santa Rosa, on the east by the foothills, and on the north by the Russian River. The Plain and adjacent areas are characterized by vernal pools, seasonal wetlands, and associated grassland habitat, which supports several species of plants and animals that are listed by the federal Endangered Species Act as threatened or endangered, including the federally-threatened

California tiger salamander (CTS) and four federally endangered plant species - Burke's goldfields, Sonoma sunshine, Sebastopol meadowfoam, and many-flowered navarretia.

The SRPCS was developed to (1) provide a plan for local agencies, developers, and community groups that would preserve and enhance populations and habitat of the listed species; (2) support the issuance of a USFWS authorization for incidental take of CTS and listed plants that may occur in the course of carrying out a broad range of activities on the Plain; and (3) protect stakeholders' (public and private) interests. It addresses various aspects of urban and rural growth and its effects on the above-listed species, mitigation for impacts to these listed species and wetlands, and the conservation and recovery of the listed species and their habitat.

The SRPCS identified the Southwest Santa Rosa Preserve System and nine "Conservation Areas" through the Plain, where mitigation for project-related impacts to listed species and vernal pools should be directed. The designation of Conservation Areas was based on the following factors: (1) known distribution of CTS; (2) presence of suitable CTS habitat; (3) presence of large blocks of natural or restorable land; (4) adjacency to existing preserves; and (5) known location of the federally listed plants.

The site is located outside the SRPCS planning area and the nine Conservation Areas. It does not contain suitable habitat for any of the focal species addressed under the SRPCS, including CTS and federally-listed plant species.

ASSESSMENT OF PROPOSED DEVELOPMENT

Significance Criteria

The California Environmental Quality Act (CEQA) Guidelines identifies significance criteria used in evaluating the potential significance of a proposed project. Any future development on the site would have to undergo some type of CEQA review, which would include potential impacts on biological resources.

According to Appendix G of the CEQA Guidelines a proposed project would have potentially significant biological resources impacts if it would:

1. Have a substantial adverse effect, either directly, or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies,

regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

3. Have a substantial or adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Impact Assessment and Recommendations

The following provides a review of the potential impacts of future development associated with implementation of the District's proposed facility improvements under each of the CEQA significance criteria. Where potentially significant impacts are possible, recommendations have been made that would serve to address them.

Impact 1: ***Special Status Species***
Proposed development on the site is unlikely to adversely affect special-status species. However, there is a remote possibility that active bird nests protected under the Migratory Bird Treaty Act and State Fish and Game Code or roosts of bat species could be disturbed during construction if adequate controls are not taken. ***Potentially Significant Impact.***

No special-status plant species occur on the site and essential habitat for most special-status animal species is absent. This includes absence of breeding, dispersal, or aestivation habitat for California tiger salamander, California red-legged frog, steelhead, and California freshwater shrimp, among other special-status animal species known from the Santa Rosa vicinity. There remains a remote possibility that nesting birds or roosting bats may be present in the mature trees on the site. This potential is discussed further below, together with recommendations to ensure avoidance of any special-status animal species.

Nesting Birds. Although the site is highly developed with existing District facilities, the existing buildings, landscape plantings and particularly the mature valley oaks provide suitable nesting substrate for a number of native bird species. Although no evidence of any nesting was observed during the field survey of the site, and the recent nesting survey conducted in March 2026 indicated that only non-native house sparrows were nesting in two nest boxes,

there remains a potential for new nests to become established before construction proceeds. Construction would take place in close proximity to the four mature valley oak trees that are to be preserved. If new nests are established in one or more of these trees or in other locations, construction activities could disrupt nesting by native birds and result in abandonment of an active nest(s) give the proximity of construction. Destruction or abandonment of a nest in active use would be a violation of the MBTA and State Fish and Game Code. Appropriate avoidance measures would be required to ensure compliance with these regulations.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in the Santa Rosa area is typically from September 1 to January 31, or to conduct a nesting survey within 7 days prior to initial grubbing, demolition and construction to determine whether any active nests are present that must be protected with appropriate setbacks until any young have fledged and are no longer dependent on the nest. Protection of the nest(s), if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, construction activities associated with proposed development of the site could adversely affect nesting birds, particularly in the mature valley oak trees, which would be a potentially *significant* impact.

The following measure is recommended to ensure avoidance of possible bird nests in active use.

Recommendation BIO-1.1: Adequate measures should be taken to avoid inadvertent take of bird nests of native species protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use. This should be accomplished by taking the following steps:

- If construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction for passerines and 500 feet for raptors. The proposed development area of the project site shall be resurveyed to confirm that no new nests have been established if construction has been delayed or curtailed for more than 7 days during the nesting season.
- If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), project construction may proceed with no restrictions.

- If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on nest location, species, and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the proposed development area on the project site.
- A report of findings shall be prepared by the qualified biologist and submitted for review and approval by the District prior to initiation of construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. Following approval by the District, tree removal, building demolition, and construction within the nest buffer zone may proceed. No report of findings is required if vegetation removal, building demolition and other construction is initiated during the non-nesting season (September 1 to January 31) and continues uninterrupted according to the above criteria.

Roosting Bats. No signs of bat occupation of any of the existing buildings was observed during the field surveys, but cavities, exfoliating bark, and foliage in the mature valley oaks on the site could provide roosting habitat for a number of special-status bat species, including: pallid bat, Townsend's western big-eared bat, and western red bat, among others. The four mature valley oaks on the site are to be preserved as part of proposed development. Construction in the immediate vicinity of these trees, could result in noise, vibration, and dust at different times. However, these four trees are all located adjacent to busy roadways, parking lots, and areas that are already subject to high levels of human activity and disturbance. Where District operations result in considerable noise, vibrations, and other disturbance. Any bats choosing to roost in one or more of these trees have become acclimated to human activity and construction-related disturbance associated with the project is not expected to lead to abandonment if any undetected roosts are present.

However, if one or more of the mature valley oaks is inadvertently damaged, must undergo major pruning or goes into decline and must be removed as a result of construction, removal of major limbs or the entire tree could lead to direct mortality of an individual bat(s) or destruction of an active bat roost(s) unless appropriate controls are implemented. A standard method to address the potential for presence of tree roosting bats is to conduct a survey within 7 days prior to initial tree removal to determine whether any active roosts are present that must be protected until any young have fledged and are no longer

dependent on the roost. Protection of the roost, if present, would require that temporary restrictions on timing of pruning or tree removal be provided, depending on the type of bat species, degree to which the individuals have acclimated to ongoing disturbance, and other factors. Procedures for pruning or removal of a tree determined to provide suitable bat roosting habitat would be overseen by a qualified biologist. Without these controls, the proposed project could adversely affect roosting bats would be a *potentially significant* impact.

The following measure is recommended to ensure avoidance of possible bat roost if present on the site.

Recommendation BIO-1.2. Adequate measures shall be taken to avoid inadvertent take of special-status and more common bat species if present in the mature valley oak trees on the site. This should be accomplished by taking the following steps.

- A qualified biologist shall visually inspect the valley oak tree(s) with limb(s) to be pruned or that has to be removed due to inadvertent damage or decline for bat roosts within 7 days prior to their removal or pruning. The biologist shall look for signs of bats including sightings of live or dead bats, bat calls or squeaking, the smell of bats, bat droppings, grease stains or urine stains around openings in trees, or flies around such openings. A tree with multiple hollows, crevices, forked branches, woodpecker holes, or loose and flaking bark have the highest chance of occupation and shall be inspected carefully.
- If signs of bats are detected, confirmation on presence or absence should be determined by the qualified biologist, which may include night emergence or acoustic surveys.
- Due to restrictions of the California Health Department, direct contact by workers with any bat is not allowed. The qualified bat biologist should be contacted immediately if a bat roost is discovered during future construction.
- If an active maternity roost is encountered during the maternity season (April 1 to August 31), the CDFW should be contacted for direction on how to proceed and an appropriate exclusion zone established around the occupied tree until young bats are old enough to leave the roost without jeopardy. The size of the buffer would take into account:
    - Proximity and noise level of construction activities;
    - Distance and amount of vegetation or screening between the roost and construction activities; and
    - Species-specific needs, if known, such as sensitivity to disturbance.
- Where the qualified biologist has determined that a tree provides suitable habitat for bat roosting, its removal should be overseen by the qualified biologist according to the following procedure.
    - Pruning or removal of living trees or snags should preferably not occur during the maternity season between April 1 and August 31

to minimize the disturbance of young that may be present and unable to fly.

- Pruning or removal of living trees or snags that provides suitable habitat for bats should preferably occur between the hours of 12 pm and sunset on days after nights when low temperatures were 50° or warmer to minimize impacting bats that may be present in deep torpor.
- When it is necessary to perform crown reduction on a tree, remove an entire tree or prune branches over six inches in diameter there should be preliminary pruning of small branches less than 2 inches in diameter performed the day before. The purpose of this is to minimize the probability that bats would choose to roost in those trees the night before the work is performed.

- A report of findings should be prepared by the qualified biologist and submitted to the District for review and approval prior to initiation of tree removal or major pruning summarizing the results of the preconstruction roosting survey. The report should either confirm absence of any active roosts or define appropriate controls to be implemented under the supervision of the qualified biologist in accordance with the above criteria.

Implementation of the above mitigation measures would reduce the *potentially significant impacts* on nesting birds and roosting bats to a level of *less than significant*.

Impact 2: ***Sensitive Natural Communities***
Proposed development on the site would not affect any sensitive natural communities which are not present on the site. ***No Impact****.*

Proposed development of the site would not affect any sensitive natural communities, such as riparian woodland, native grasslands, vernal pools or seasonal wetlands. Sensitive natural community types are absent on the site, which is already developed with existing District facilities. Given the absence of any sensitive natural community types, there would be *no impact* and no mitigation is required.

Impact 3: ***Wetlands and Regulated Waters***
Proposed development on the site would not affect any wetlands or regulated waters which are not present on the site. ***No Impact****.*

Proposed development of the site would not affect any wetlands or regulated waters, which are absent from the site. Given the absence of any wetlands or regulated waters, there would be *no impact* and no mitigation is required.

Impact 4: ***Wildlife Habitat and Movement Opportunities***
Proposed development of the site would not substantially affect wildlife habitat, nursery areas, or important movement corridors. ***Less-than-Significant Impact.***

Proposed development would occur on a site that has already been developed with District facilities, including buildings, parking lots, and ornamental landscaping. These provide only limited wildlife habitat values and conversion to other development would not result in any significant impacts on wildlife habitat. No creeks or other important wildlife movement corridors are present on the site, and none would be obstructed or disturbed. The mature valley oaks are to be retained as part of the proposed development, and new landscaping would serve to replace the smaller trees and other ornamental landscaping to be removed. Potential impacts on wildlife habitat and movement opportunities would be *less-than-significant* and no mitigation is necessary.

Impact 5: ***Conflict with Local Policies or Ordinances***
Proposed development of the site would not conflict with any local plans or ordinances protecting biological resources. The mature valley oaks would be retained and other possible sensitive resources such as active bird nests or bat roosts would be protected. ***No Impact.***

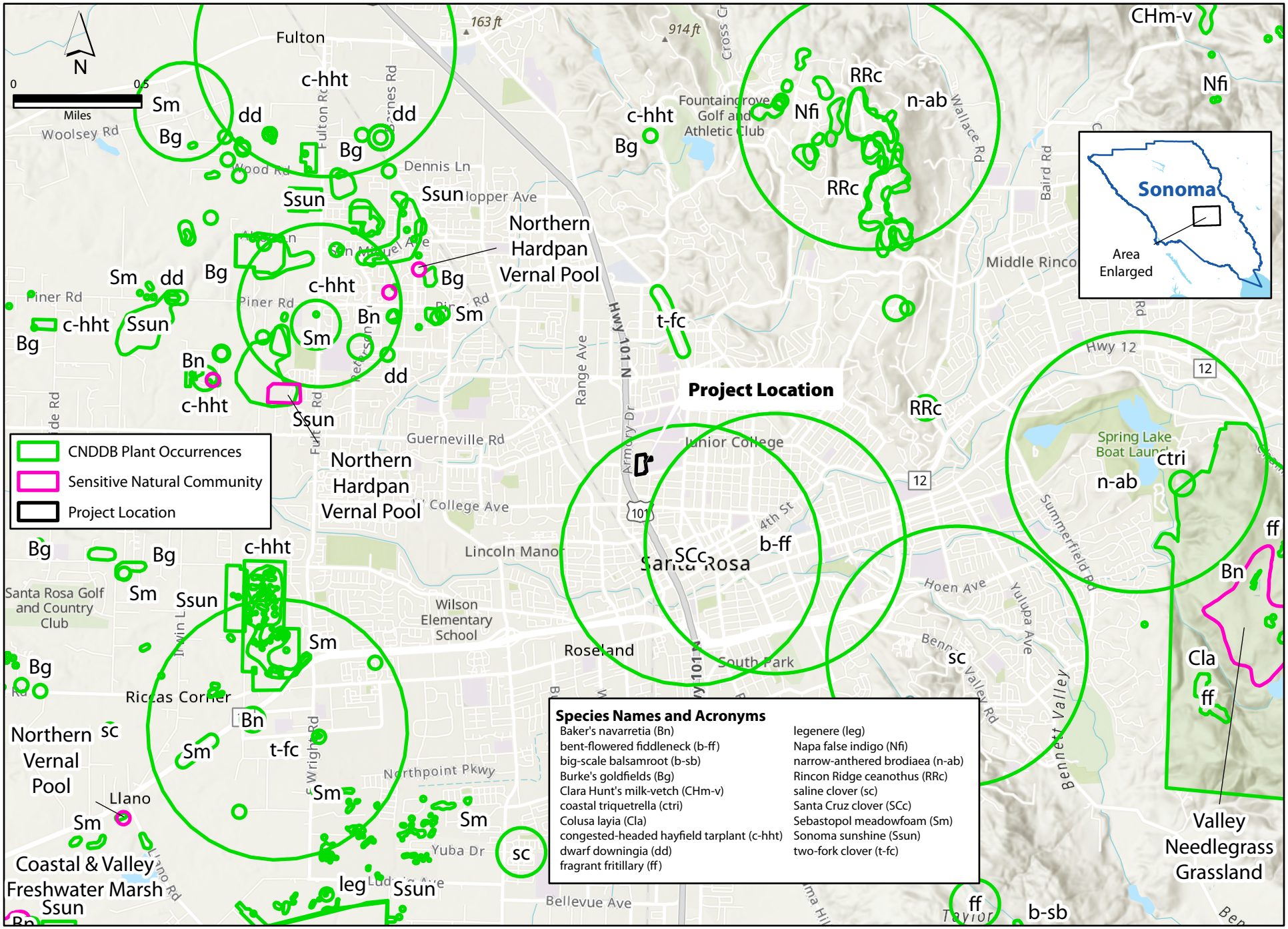
No conflicts with provisions in the City of Santa Rosa General Plan or tree protection ordinances are anticipated. The mature valley oaks on the site would be retained and the smaller non-native liquidambar trees to be removed do not qualify as protected trees under the City's Tree Protection Ordinance or would be replaced as part of site landscaping. Recommendations BIO-1.1 and 1.2 would serve to ensure avoidance of any active bird nests or bat roosts, if encountered on the site during construction. No conflicts with local plans and policies are anticipated and *no impacts* are anticipated.

Impact 6: ***Conflict with Habitat or Community Conservation Plans***
Proposed development of the site would not conflict with any adopted Habitat or Community Conservation Plans. ***No Impact****.*

Proposed development of the site would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. The boundaries of the SRPCS and associated Conservation Areas do not overlap the site. No conservation plans have been adopted encompassing the site vicinity, and *no impact* is therefore anticipated.

Figure 1. Special-Status Plants

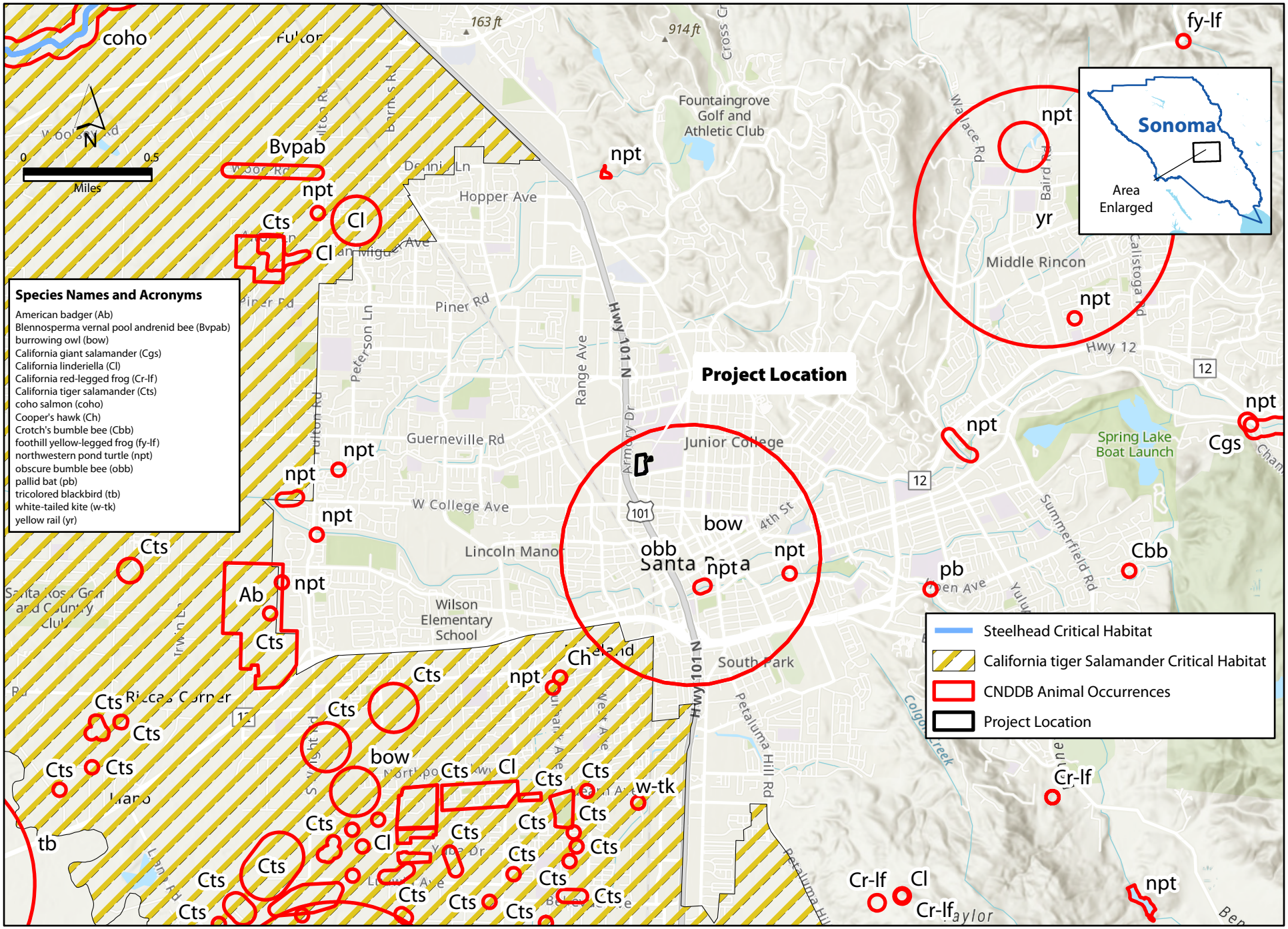
Santa Rosa City School District Project



SOURCES: California Natural Diversity Database release date 03/01/2026 accessed on 03/16/2026; USFWS critical habitat data release date 08/07/2025 accessed on 10/14/2025. Basemap by: ESRI. Map produced by www.digitalmappingsolutions.com on 3/16/2026.

Figure 3. Special-Status Animals & Critical Habitat

Santa Rosa City School District Project



SOURCES: California Natural Diversity Database release date 03/01/2026 accessed on 03/16/2026; USFWS critical habitat data release date 08/07/2025 accessed on 10/14/2025; Endangered Species Act (ESA) critical habitat map service dated 07/17/2023 (WCR) (none on map shown).
Basemap by: ESRI. Map produced by www.digitalmappingsolutions.com on 3/16/2026.

APPENDIX A

PERSONS INVOLVED IN REPORT PREPARATION

This report was prepared by ENVIRONMENTAL COLLABORATIVE under contract to Terraphase. Mr. James Martin, Principal of ENVIRONMENTAL COLLABORATIVE, served as the principal biologist and conducted the field survey, and prepared this written report. The CNDDB record search and occurrence maps were prepared by Esther Mandeno of Digital Mapping Solutions. Any questions regarding this report may be directed to Mr. Martin by telephoning (510) 393-0770.

APPENDIX B

CNDDB Summary Table

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sebastopol (3812247) OR Santa Rosa (3812246))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Actinemys marmorata northwestern pond turtle	G2 SNR	Proposed Threatened None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	55 475	1160 S:16	1	3	9	3	0	0	7	9	16	0	0
Agelaius tricolor tricolored blackbird	G3 S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered USFWS_BCC-Birds of Conservation Concern	106 106	960 S:1	0	0	0	0	0	1	1	0	1	0	0
Alopecurus aequalis var. sonomensis Sonoma alopecurus	G5T1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	140 150	21 S:2	0	0	0	0	1	1	2	0	1	1	0
Ambystoma californiense pop. 3 California tiger salamander - Sonoma County DPS	G3T2 S2	Endangered Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	80 135	85 S:53	7	18	13	4	1	10	23	30	52	1	0
Amorpha californica var. napensis Napa false indigo	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	700 1,110	123 S:4	0	2	1	0	0	1	0	4	4	0	0
Amsinckia lunaris bent-flowered fiddleneck	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley SB_UCSC-UC Santa Cruz		93 S:1	0	0	0	0	0	1	1	0	1	0	0
Andrena blennospermatis Blennosperma vernal pool andrenid bee	G2 S1	None None		90 130	15 S:2	0	0	0	0	0	2	2	0	2	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	190 190	425 S:2	0	0	0	0	0	2	1	1	2	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Arctostaphylos densiflora Vine Hill manzanita	G1 S1	None Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	200 240	2 S:2	0	0	1	1	0	0	1	1	2	0	0
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	G3T1 S1	None None	Rare Plant Rank - 1B.1 SB_UCSC-UC Santa Cruz	300 800	12 S:5	0	0	1	1	1	2	3	2	4	0	1
Astragalus claranus Clara Hunt's milk-vetch	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	770 1,165	6 S:2	0	1	0	0	0	1	0	2	2	0	0
Astur cooperii Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	133 133	121 S:1	0	1	0	0	0	0	0	1	1	0	0
Athene cunicularia burrowing owl	G4 S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	92 150	2409 S:4	0	0	0	0	3	1	3	1	1	3	0
Balsamorhiza macrolepis big-scale balsamroot	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	890 1,230	51 S:2	2	0	0	0	0	0	2	0	2	0	0
Blennosperma bakeri Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	70 140	24 S:14	0	6	2	0	3	3	4	10	11	2	1
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	150 150	181 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus crotchii Crotch's bumble bee	G2 S2	None Candidate Endangered	IUCN_EN-Endangered	269 269	1024 S:1	0	0	0	0	0	1	0	1	1	0	0
Bombus occidentalis western bumble bee	G3 S1	None Candidate Endangered	IUCN_VU-Vulnerable USFS_S-Sensitive	100 100	306 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Bombus pensylvanicus American bumble bee	G3G4 S2	None None	IUCN_VU-Vulnerable	150 150	810 S:1	0	0	0	0	0	1	1	0	1	0	0
Brodiaea leptandra narrow-anthered brodiaea	G3? S3?	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		39 S:2	0	0	0	0	0	2	2	0	2	0	0
Calamagrostis crassiglumis Thurber's reed grass	G5Q S2	None None	Rare Plant Rank - 2B.1	150 150	15 S:1	0	0	0	0	0	1	1	0	1	0	0
Castilleja uliginosa Pitkin Marsh paintbrush	GX SX	None Endangered	Rare Plant Rank - 1A	150 200	2 S:2	0	0	0	0	2	0	2	0	0	2	0
Ceanothus confusus Rincon Ridge ceanothus	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	510 800	33 S:3	0	0	1	0	1	1	2	1	2	0	1
Ceanothus divergens Calistoga ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	850 850	26 S:1	0	0	0	1	0	0	0	1	1	0	0
Ceanothus foliosus var. vineatus Vine Hill ceanothus	G3T1 S1	None None	Rare Plant Rank - 1B.1	150 250	6 S:3	0	0	1	0	0	2	1	2	3	0	0
Ceanothus purpureus holly-leaved ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	475 475	43 S:2	0	0	0	0	0	2	2	0	2	0	0
Ceanothus sonomensis Sonoma ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	475 475	30 S:1	0	0	0	0	0	1	1	0	1	0	0
Chorizanthe valida Sonoma spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 150	6 S:1	0	0	0	0	1	0	1	0	0	1	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Clarkia imbricata Vine Hill clarkia	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	230 232	2 S:2	0	1	1	0	0	0	1	1	2	0	0
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	G3 S2.1	None None		65 65	60 S:1	0	0	0	0	0	1	1	0	1	0	0
Coturnicops noveboracensis yellow rail	G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	283 283	45 S:1	0	0	0	0	0	1	1	0	1	0	0
Cuscuta obtusiflora var. glandulosa Peruvian dodder	G5T4? SH	None None	Rare Plant Rank - 2B.2		6 S:1	0	0	0	0	0	1	1	0	1	0	0
Delphinium luteum golden larkspur	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley		11 S:1	0	0	0	0	1	0	1	0	0	1	0
Dicamptodon ensatus California giant salamander	G3 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	350 350	254 S:1	0	0	0	0	0	1	1	0	1	0	0
Downingia pusilla dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	85 142	132 S:9	4	1	0	0	2	2	6	3	7	1	1
Eastwoodiella californica swamp harebell	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 150	155 S:2	0	0	0	0	2	0	2	0	0	1	1
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	120 120	190 S:1	0	1	0	0	0	0	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	150 800	82 S:7	0	2	1	0	2	2	4	3	5	2	0
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley	90 442	52 S:8	0	0	0	0	2	6	7	1	6	2	0
Horkelia tenuiloba thin-lobed horkelia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	200 250	27 S:3	0	0	0	0	0	3	3	0	3	0	0
Lasiurus cinereus hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern		238 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia burkei Burke's goldfields	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 442	36 S:22	3	9	5	1	3	1	7	15	19	1	2
Lasthenia californica ssp. bakeri Baker's goldfields	G3T1 S1	None None	Rare Plant Rank - 1B.2	125 125	19 S:1	0	0	0	0	0	1	1	0	1	0	0
Layia septentrionalis Colusa layia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley		69 S:1	0	0	0	0	0	1	0	1	1	0	0
Legenere limosa legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	90 93	92 S:2	0	1	1	0	0	0	1	1	2	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Leptosiphon jepsonii Jepson's leptosiphon	G2G3 S2S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	450 450	51 S:1	0	0	0	0	0	1	1	0	1	0	0
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	150 200	4 S:2	0	1	0	0	0	1	2	0	2	0	0
Limnanthes vinculans Sebastopol meadowfoam	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 139	46 S:32	2	7	5	2	5	11	15	17	27	5	0
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	100 776	509 S:5	0	1	0	0	0	4	4	1	5	0	0
Microseris paludosa marsh microseris	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden SB_UCSC-UC Santa Cruz	80 80	38 S:1	0	0	0	0	0	1	1	0	1	0	0
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	50 740	64 S:10	1	0	0	0	4	5	8	2	6	2	2
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	G3 S3.1	None None		60 135	126 S:5	3	0	1	0	1	0	5	0	4	1	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Northern Vernal Pool	G2	None		73	20 S:2	0	1	0	0	0	1	2	0	2	0	0
Northern Vernal Pool	S2.1	None		80												
Oncorhynchus kisutch pop. 4	G5T2Q	Endangered	AFS_EN-Endangered	445	23 S:1	0	0	0	0	0	1	0	1	1	0	0
coho salmon - central California coast ESU	S2	Endangered		445												
Rana boylii pop. 1	G3T4	None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	750	1610 S:1	1	0	0	0	0	0	1	0	1	0	0
foothill yellow-legged frog - north coast DPS	S4	None		750												
Rana draytonii	G2G3	Threatened	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	387	1806 S:3	1	1	0	0	0	1	0	3	3	0	0
California red-legged frog	S2S3	None		951												
Rhynchospora alba	G5	None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	200	17 S:1	0	1	0	0	0	0	1	0	1	0	0
white beaked-rush	S2	None		200												
Rhynchospora californica	G1	None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	150	9 S:2	0	0	0	0	1	1	2	0	1	0	1
California beaked-rush	S1	None		150												
Rhynchospora capitellata	G5	None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	150	25 S:2	0	0	1	0	1	0	1	1	1	1	0
brownish beaked-rush	S2	None		150												
Rhynchospora globularis	G5	None	Rare Plant Rank - 2B.1	150	3 S:2	0	0	1	0	1	0	1	1	1	1	0
round-headed beaked-rush	S1	None		170												
Syncaris pacifica	G2	Endangered	IUCN_EN-Endangered	162	20 S:1	0	1	0	0	0	0	0	1	1	0	0
California freshwater shrimp	S2	Endangered		162												
Taxidea taxus	G5	None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	80	648 S:2	0	2	0	0	0	0	1	1	2	0	0
American badger	S3	None		90												
Trifolium amoenum	G1	Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	160	26 S:3	0	0	0	0	0	3	3	0	3	0	0
two-fork clover	S1	None		200												

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Trifolium buckwestiorum Santa Cruz clover	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden SB_UCSC-UC Santa Cruz SB_USDA-US Dept of Agriculture		64 S:1	0	0	0	0	0	1	0	1	1	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	75 100	56 S:4	0	1	0	0	2	1	3	1	2	1	1
Triquetrella californica coastal triquetrella	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	328 328	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Valley Needlegrass Grassland Valley Needlegrass Grassland	G3 S3.1	None None		835 835	45 S:1	0	0	0	0	0	1	1	0	1	0	0
Viburnum ellipticum oval-leaved viburnum	G4G5 S3	None None	Rare Plant Rank - 2B.3		39 S:1	0	0	0	0	0	1	1	0	1	0	0

Appendix C

Cultural Resources

Technical Memorandum

To:	Erik Oden Executive Director Santa Rosa City Schools 110 Stony Point Road, Suite 210 Santa Rosa CA 95401	From:	Barbara Heyman, Principal Environmental Planning Terraphase Engineering Inc.; Charlane Gross, M.A., RPA Senior Archaeologist
Date:	June 5, 2026	Project No.:	C201.001
Subject:	Cultural Resources Identification Memorandum for District Office and Education Center Project, Santa Rosa, California		

This Cultural Resources Identification Memorandum (CRIM) has been prepared for the Santa Rosa City Schools' (District) proposed District Office and Education Center Project (Project). The purpose of the CRIM is to identify and preliminarily assess potential cultural resources within the Project's area of potential effects. This CRIM is intended to fulfill the requirements of the California Environmental Quality Act (CEQA).

Terraphase Engineering, Inc. (Terraphase) conducted records searches through the California Historical Resources Information System's Northwest Information Center (NWIC), the official state repository for cultural resources records and reports in Sonoma County, and the Native American Heritage Commission (NAHC). Terraphase reviewed relevant literature, aerial photographs, historical maps, and project-specific studies to assess the potential for the Project to cause a substantial adverse change to historical resources, as defined in PRC § 5020.1(q) and the CEQA Guidelines. The District contacted local Native American tribes to request knowledge of potential tribal cultural resources (TCRs) within the Project site and vicinity and to initiate tribal consultation under PRC § 21080.3.1.

This technical memorandum summarizes the Project location and environmental setting, proposed improvements, and applicable regulatory framework under CEQA and related state laws. It also presents background research, findings of the records searches conducted to evaluate potential built historical and archaeological resources, summarizes the District's tribal consultation process, and analyzes potential impacts and recommends mitigation to ensure compliance and resource protection.

Project Location

The Project is proposed at 211 Ridgway Avenue, Santa Rosa, California, within an un-sectioned portion of Township 7 North, Range 8 west, as depicted on the Santa Rosa USGS quadrangle map in Sonoma County, California. The Project site encompasses approximately 8 acres of a larger 50-acre parcel, associated with Assessor Parcel Number 180-470-007 (Site) owned by the District. The Site is north of Ridgway Avenue and east of Ripley Street. U.S. Highway 101 is approximately 350 feet to the west.

Regional access from US 101 is via the College Avenue on and off-ramps. Figures showing the site location are included in **Attachment A**.

Environmental Setting

The Project Site is located in the western portion of the District-owned parcel. It is relatively flat; the elevation ranges between 148 and 151 feet above mean sea level. The Project Site and surrounding areas are urbanized. The closest creeks are the Santa Rosa and Piner Creeks, which are approximately one mile to the south and north, respectively.

The Project Site is developed with permanent and portable structures. It is developed with the District's administrative uses. Portable structures previously located in the southeast portion of the Project Site were removed during the first quarter of 2024; stockpiled soil from a recent construction job immediately north of the Project Site is currently in this area.

The Project Site is surrounded by institutional and residential land uses. The District's new warehouse building and a childcare facility are north of the Project Site. Northeast of the Project Site is a turf field and tennis courts used by Santa Rosa High School. East of the Project site are a turf field and portable buildings used by Ridgway High School. Residential development is located to the south, and government facilities, including Cal Fire and the National Guard Armory are to the west of the Project Site.

Project Description

The Project involves the demolition of existing permanent and portable structures and construction of a new, approximately two-story 59,663-square-foot building to house the District's administrative operations and Adult-Student Transitions Program. The new facility will feature varied rooflines, with the tallest point reaching 36 feet above finished grade. Additionally, the Project includes renovation of approximately 6,696 square feet of the existing M&O building. Site improvements will be made around both buildings, including rehabilitation of parking lots. A figure showing the proposed site plan is included in **Attachment A**.

Regulatory Setting

CEQA requires that projects funded by or requiring discretionary approval from public agencies in California consider their potential effects on unique archaeological resources (PRC § 21083.2).[1] Historical resources are defined as buildings, sites, structures, or objects that possess historical, architectural, archaeological, cultural, or scientific significance (PRC § 5020.1). CEQA Guidelines (14 CCR § 15064.5) define three cases in which a property may qualify as a historical resource for the purpose of CEQA review:

[1] https://leginfo.legislature.ca.gov/PRC/division13/chapter2.6/21083.2

1. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
2. The resource is included in a local register of historic resources, as defined in PRC § 5020.1(k), or is identified as significant in a historical resources survey that meets the requirements of PRC § 5024.1(g),[2] unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant.
3. The lead agency determines that the resource may be a historical resource as defined in PRC § 5020.1(j) or § 5024.1, or significant as supported by substantial evidence in light of the whole record. PRC § 5024.1 defines eligibility requirements and states that a resource may be eligible for inclusion in the CRHR if it:
   A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
   B. Is associated with the lives of persons important in our past;
   C. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
   D. Has yielded, or may be likely to yield, information important in prehistory or history.

Assembly Bill 52 (AB 52), enacted in 2014, establishes a formal process for consultation between CEQA lead agencies and California Native American tribes traditionally and culturally affiliated with the geographic area of a proposed project.[3] Consultation is only required if a tribe has submitted a written request to the lead agency for notice of projects within its traditional territory. Importantly, consultation must begin prior to the release of a CEQA environmental document and must be conducted in good faith, with the goal of reaching a mutual agreement on mitigation measures to avoid or reduce impacts to TCRs.

Background Research

This section summarizes the background research, record searches, and tribal coordination efforts conducted to identify and assess potential cultural and historical resources and TCRs within and surrounding the Project site.

Northwest Information Center (NWIC) Record Search

On November 3, 2025, the Northwest Information Center (NWIC) of the California Historical Resources Information System, provided the results of a record search for archaeological resources within 0.5 miles of the proposed project site (NWIC File No.: 25-0557). The NWIC is the official state repository of

[2] https://leginfo.legislature.ca.gov/PRC/division5/chapter1/article2/5024.1

[3] https://leginfo.legislature.ca.gov/AB52

cultural resources records and reports for Sonoma County. As part of the records search, the following federal and California inventories were reviewed:

- Built Environment Resources Directory (BERD) for Sonoma County. The BERD includes resources reviewed for eligibility for the National Register of Historic Places and the California Historical Landmarks programs through federal and state environmental compliance laws, and resources nominated under federal and state registration programs, including:
- National Register of Historic Places,
- California Register of Historical Resources,
- California Historical Landmarks, and
- California Points of Historical Interest.

The NWIC indicated that no archaeological sites known to be present within the Project site although one is located within 0.25 miles (CA-SON-157), a location with midden soil, projectile points, and groundstone recorded in the early 20th century.

There are 22 archaeological studies at least partially within the 0.5-mile radius as well as an architectural inventory of the project site. The reports are listed in **Table 1** and results are included in **Attachment B.**

Table 1. Cultural Resource Reports within 0.5 miles of the Project Site

Report #	Title	Author(s)	Date
S-000955	Preliminary Archaeological Assessment for the Coddingtown Environmental Impact Report, Santa Rosa, California	-	1975
S-006249	An Archaeological Study for the Stephens Property at 225 Carrillo Street, Santa Rosa, Sonoma County, California	Allan G. Bramlette and Kimberly Jo Tremaine	1983
S-009126	Archaeological Report for 117 Foley Street (letter report)	Nelson B. Thompson	1987
S-023950	A Cultural Resources Survey for the Old Trunk Sewer Replacement/Realignment Project, Santa Rosa, Sonoma County, California	Vicki R. Beard	2001
S-026030	Archaeological Survey Report, AT& T Wireless Services Site No. 8SF-330/Coddington, 1500 Armory Drive, Santa Rosa, Sonoma County, California	Ric Windmiller	2002
S-028895	A Cultural and Paleontological Resources Study for the Santa Rosa Junior College Parking Project, Santa Rosa, Sonoma County, California	Sara E. Palmer and Benjamin Matzen	2004
S-029735	A Cultural Resources Evaluation of the Crossings Development, 1627 and 1709 Cleveland Avenue, and 1000 Jennings Drive, Santa Rosa, Sonoma County, California.	Cassandra Chattan	2005
S-030497	A Cultural Resources Survey of the Finali Property on Jennings Avenue, Santa Rosa, Sonoma County, California.	Thomas M Origer and Nelson "Scotty" Thompson	2005
S-030497a	Investigation of a Trash Pit Along Jennings Avenue, Santa Rosa, Sonoma County, California.	Janine Loyd, Eileen Steen, and Thomas M. Origer	2005

Table 1. Cultural Resource Reports within 0.5 miles of the Project Site

S-032527	New Tower ("NT") Submission Packet, FCC Form 620, Atech Distribution Center, BA20406C	Dana E. Supernowicz	2006
S-032527a	Cultural Resources Study of the Atech Distribution Center Project, T-Mobile Site No. BA20406C, 7 College Avenue, Santa Rosa, Sonoma County, California, 95401	-	2006
S-048798	Cultural Heritage Survey of the City of Santa Rosa, California	Anne Bloomfield	1989
S-048798a	City of Santa Rosa Cultural Heritage Survey; Historic Properties Inventory	Dan Peterson, Anne Bloomfield, Dennis Harris, Adrian Praetzellis, Jack Bookwalter, and Paula Cook	1990
S-049084	Historic Architectural Survey Report (HASR) for a Proposed Project In Sonoma County, in Santa Rosa on Route Son-101 from the State Route 12 Interchange to just North of Steele Lane, 04-SON-101, KP 31.2/35.7 (PM 19.5/22.2), EA 04-245400: Volumes 1 thru 4	Marianne Hurley	2002
S-049084a	Archaeological Survey Report for a Proposed Widening Project In Santa Rosa, Sonoma County on Route Son-101 from the State Route 12 Interchange to Just North of Steele Lane revised, 04-SON-101, KP 31.2-35.7 (PM 19.5-22.2), EA 245400, FHWA021104A	-	2003
S-049084b	Historic Resource Evaluation Report (HRER) for a Proposed Widening Project In Santa Rosa, Sonoma County, on Route Son-101 from the State Route 12 Interchange to Just North of Steele Lane, 04-SON-101 KP 31.2-35.7 (PM 19.5-22.2), EA 245400	Janet Pape	2003
S-049084c	Archaeological Discovery Plan for a Proposed Widening Project In Santa Rosa, Sonoma County, on Route SON-101 from the State Route 12 Interchange to Just North of Steele Lane, 04-SON-101 KP 31.2-35.7 (PM 19.5-22.2), EA 245400, FHWA021104A	-	2003
S-049084d	FHWA021104A High Occupancy Vehicle Lane in Median of SR 12 to Steele Lan, Santa Rosa, Sonoma County (letter report)	Knox Mellon	2003
S-049084e	Historic Property Survey Report for a Proposed Project in Sonoma County, in Santa Rosa on Route Son-101 from the State Route 12 Interchange to Just North of Steele Lane, 04-Son-101 KP 31.2-35.7 (PM 19.5-22.2), EA 245400, Contract Nos. A0833 and 04-A1380	Bright Eastman and Suzanne Stewart	2002
S-049084f	Archaeological Survey Report and Treatment Plan for a Proposed Project in Sonoma County in Santa Rosa on Route Son-101 from the State Route 12 Interchange to Just North of Steele Lane, 04-SON-101 KP 31.2-35.7 (PM 19.5-22.2) EA 245400, Contract Nos. 04-A0833 and 04-A1380	Adrian Praetzellis, Mary Praetzellis, Suzanne B. Stewart, Jack Mc Ilroy, Jack Meyer, Mark D. Selverston, Robert Douglass, Pam McKernan, and Elaine-Maryse Solari	2002
S-049084g	Finding Of Effect For the Proposed Widening And Improvement Project On Highway 101 in The City Of Santa Rosa, Sonoma County, From The State Route 12 Interchange To Just North Of Steele Lane, 04-Son-101, KP 31.2/35.7 (Pm 19.5/22.2), EA 04-245400	-	2003
S-051408	Santa Rosa Junior College Historic Resources Evaluation, Santa Rosa, California	-	2018

Source: NWIC

Historic Maps

Historic topographic maps from 1916, 1944, 1954, 1968, 1973, 1980, 1998, 2012, 2015, 2018, and 2021 were examined. Ridgway Avenue was visible on the southern edge of the site in 1916 as well as the Northwestern Pacific railway to the west and general development within the City of Santa Rosa. In 1954, several buildings and a National Guard Armory are visible to the west and northwest but the first structures do not appear on campus until 1968. More structures appear on the 1980 quadrangle, no other significant changes are depicted on the remaining maps.

Aerial Photographs

Aerial photographs at 1" = 500' were available from 1942, 1952, 1957, 1968, 1973, 1982, 1985, 1993, 2006, 2010, 2014, 2018, and 2022. In the 1942 aerial, the property is empty except for scattered trees, a possible dirt road crossing the northern end from east to west and faint grid lines likely indicating hay harvesting. In 1957, there are several structures along the western boundary and indications of row crops. Smaller structures, likely sheds, appear in 1968 with increasing amounts of development from 1973 through 1985. A new large structure appears in 2006. There are varying levels of athletic fields to the east throughout the aerial photographs.

Field Survey

The Project site is fully developed and within an urbanized setting. Therefore, an archaeological pedestrian survey was not completed.

Native American Heritage Commission (NAHC) Record Search Results

A request was sent to the NAHC on October 3, 2025, and a response was received on October 3, 2025. In the response, the NAHC reported a negative finding in the Sacred Lands File and attached a list of Native American Tribes and individuals to contact. The contact list is included in **Attachment C**.

Tribal Outreach

On November 18, 2025, the District contacted 39 individuals from the 22 Native American Tribes identified on the NAHC list, via email and certified letters, notifying the tribes of the Project and requesting knowledge of cultural resources in the vicinity of the project area.

1. Big Valley Band of Pomo Indians of the Big Valley Rancheria
2. Cahto Tribe
3. Cloverdale Rancheria of Pomo Indians
4. Coyote Valley Band of Pomo Indians
5. Dry Creek Rancheria of Pomo Indians
6. Elem Indian Colony Pomo Tribe
7. Estom Yumeka Maidu Tribe of the Enterprise Rancheria
8. Federated Indians of Graton Rancheria
9. Guidiville Rancheria of California

10. Hopland Band of Pomo Indians
11. Koi Nation of Northern California
12. Lytton Rancheria
13. Manchester Band of Pomo Indians of the Manchester Rancheria
14. Middletown Rancheria of Pomo Indians of California
15. Noyo River Indian Community
16. Pinoleville Pomo Nation
17. Potter Valley Tribe
18. Redwood Valley or Little River Band of Pomo Indians
19. Robinson Rancheria of Pomo Indians
20. Round Valley Reservation/ Covelo Indian Community
21. Scotts Valley Band of Pomo
22. Yokayo Tribe

Four tribes responded: Middletown Rancheria on November 20, 2025; Lytton Rancheria on December 3, 2025, Federated Indians of Graton Rancheria (FIGR) on December 23, 2025; and Noyo River Indian Community on January 8, 2026. The FIGR indicated the Project site is within their ancestral territory and requested results of the District's research efforts and recommendations.

- March 26, 2026. The District emailed the draft Cultural Resources Technical memo and asked FIGR if they would be interested in formal consultation with the District.
- March 27, 2026. The FIGR responded that they are interested in the Project and recommended the District send a formal AB 52 notice letter.
- March 27, 2026. The District resent the notification letter, dated November 18, 2025.
- April 6, 2026. The FIGR requested formal notification, pursuant to AB 52.
- April 16, 2026. The District initially responded that a formal letter was forthcoming and requested to schedule consultation. The District later submitted the formal notification to Buffy McQuillen and Hector Garcia with FIGR, pursuant to AB 52. Certified letters were mailed on April 20, 2026.
- April 16, 2026. The FIGR responded that Buffy McQuillen is the lead contact for AB 52 consultations and attached a generic letter dated August 15, 2025, with no recipient name or address, indicating formal notification of projects under PRC § 21080.3.1 be sent to Buffy McQuillen. It is unclear whether this letter was sent to the District.
- April 23, 2026. The District sent a follow up email to schedule a consultation.
- May 26, 2026. The FIGR reiterated their interest in a formal AB 52 consultation via email and a formal response letter would be sent with dates for a meeting.
- May 29, 2026. The District responded that their records indicate FIGR's request for formal AB 52 consultation was received after the 30-day response period identified in PRC § 21080.3.1. The

District indicated that it would be available for an informal meeting within the next seven calendar days.

Impact Analysis and Mitigation

This section evaluates the potential impacts of the Project on built and subsurface cultural resources and identifies mitigation measures to ensure that impacts are reduced to a less-than-significant level.

Built Environment

No historic-era resources have been identified on the approximately 8-acre Site. The Ridgway Historic District is south of the Project site, on the southern side of Ridgway Avenue, but its resources do not encroach on the Project site. Additionally, the Project would not alter its viewshed. Therefore, the Project would not create a significant impact to the Ridgway Historic District. Project implementation would not have the potential to affect built historical resources as defined in CEQA Guidelines Section 15064.5. No impact would occur to built historical resources

Subsurface Resources

Ethnographic sites exist in the vicinity of the Project site. However, no unique resources have been discovered on the developed Project site. The Santa Rosa Creek lies to the south, Piner Creek lies to the north, both approximately one mile away, and a prehistoric occupation site is less than 0.25 miles away, indicating general elevated sensitivity for archaeological resources. However, no subsurface investigations have been conducted at the Site to determine if resources are present. Therefore, it is possible that previously unknown archaeological materials may be encountered during construction. If buried cultural materials are encountered during construction, work should stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Compliance with the below Mitigation Measure would reduce impacts to archaeological features to less than significant.

Mitigation Measure CUL-1

If any precontact or historic-era subsurface archaeological features or deposits (e.g., ceramic, shell, stone, bone, trash scatters, foundations), including locally darkened soil (“midden”), which may conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall halt, and a qualified professional archaeologist (one who meets the Secretary of the Interior’s Professional Qualification Standards for archaeology) shall be retained to assess the significance of the find. If the qualified archaeologist determines the archaeological material to be Native American in nature, the Native American community shall be included in the consultation process between the District, construction contractor, and archaeologist to develop a plan for avoidance, further evaluation, or treatment and documentation, consistent with current standards. Construction shall not resume at the location of the find until mitigation has been completed.

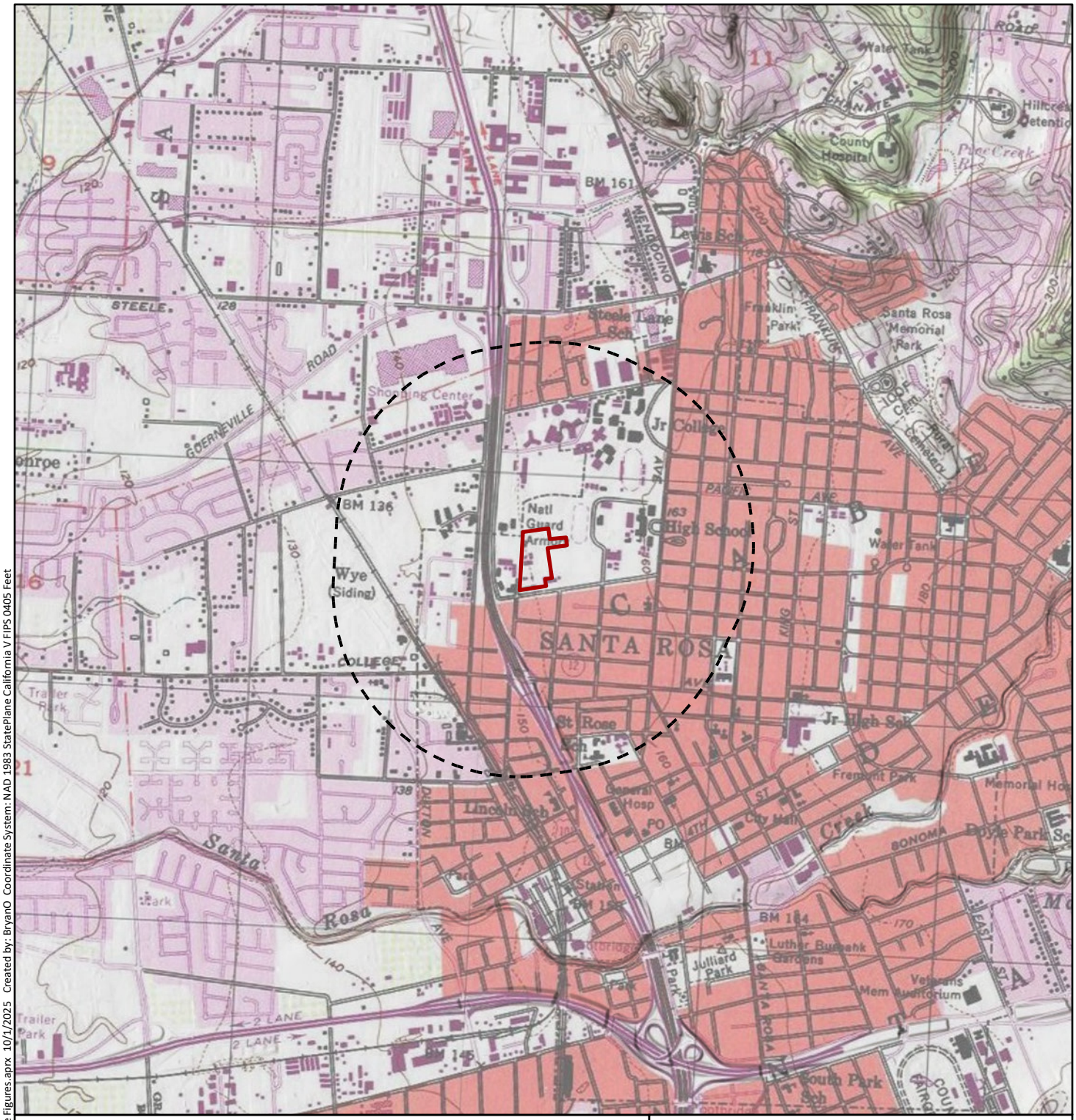
Human Remains

In the event human remains are discovered during construction, all ground-disturbing activity within 100 feet of the find shall halt, and the Sonoma County coroner shall be notified immediately. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours. Following the coroner's findings, the NAHC-designated Most Likely Descendant, if one is timely identified and steps forward, and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097. Compliance with existing laws and regulations will reduce impacts to human remains less than significant.

Attachment A

Figures



Legend

- Site Boundary
- Site Buffer - Half Mile

Base Map: USGS 7.5 Minute Topographic Quadrangle. Santa Rosa, CA (1994)

SAFETY FIRST

terraphase engineering

CLIENT: Santa Rosa City Schools

PROJECT: CEQA Review
211 Ridgway Ave, Santa Rosa, CA

PROJECT NUMBER: C102.001

Site Layout and Vicinity

FIGURE 1

File: N:\GIS\Prj\C102_Santa Rosa City Schools\Pro Project\Site Figures.aprx 10/1/2025 Created by: BryanO Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



	SAFETY FIRST	CLIENT: Santa Rosa City Schools	Site Plan
	terraphase engineering	PROJECT: District Office and Education Center	
Source: ARNTZ/PBK ; February 13, 2025		PROJECT NUMBER: C102	FIGURE 2

Attachment B

NWIC Records Search

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: 769.00 **IC FILE NO.:** _____

To: Northwest Information Center

Print Name: Charlane Gross Date: 10/01/2025

Affiliation: Terraphase Engineering

Address: 1415 L St, Suite 100

City: Sacramento State: CA Zip: 95814

Phone: (530) 919-1975 Fax: _____ Email: charlane.gross@terraphase.com

Billing Address (if different than above): 1300 Clay St, Suite 1000 Oakland, CA 94612

Billing Email: AP@terraphase.com Billing Phone: (510) 645-1850

Project Name / Reference: New District Office and Education Center Project - C102.001

Project Street Address: 211 Ridgway Avenue Santa Rosa, California 95401

County or Counties: Sonoma

Township/Range/UTMs: 7N 8W

USGS 7.5' Quad(s): Santa Rosa

PRIORITY RESPONSE (Additional Fee): yes ☐ / no ☐

TOTAL FEE NOT TO EXCEED: $_____
(If blank, the Information Center will contact you if the fee is expected to exceed $1,000.00)

Special Instructions:

Information Center Use Only

Date of CHRIS Data Provided for this Request: _____

Confidential Data Included in Response: yes ☐ / no ☐

Notes: _____

CHRIS Data Request Form

Mark the request form as needed. Attach a PDF of your project area (with the radius if applicable) mapped on a 7.5' USGS topographic quadrangle to scale 1:24000 ratio 1:1 neither enlarged nor reduced and include a shapefile of your project area, if available. Shapefiles are the current CHRIS standard for submitting digital spatial data for your project area or radius. **Check with the appropriate IC for current availability of digital data products.**

- Documents will be provided in PDF format. Paper copies will only be provided if PDFs are not available at the time of the request or under specially arranged circumstances.
- Location information will be provided as a digital map product (Custom Maps or GIS data) unless the area has not yet been digitized. In such circumstances, the IC may provide hand drawn maps.
- In addition to the $150/hr. staff time fee, client will be charged the Custom Map fee when GIS is required to complete the request [e.g., a map printout or map image/PDF is requested and no GIS Data is requested, or an electronic product is requested (derived from GIS data) but no mapping is requested].

For product fees, see the CHRIS IC Fee Structure on the OHP website.

1. Map Format Choice:

Select One: Custom GIS Maps ☐ GIS Data ☐ Custom GIS Maps **and** GIS Data ☒ No Maps ☐

Any selection below left unmarked will be considered a "no. "

Location Information:

	Within project area	Within 1/2 mi. radius
ARCHAEOLOGICAL Resource Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Locations	yes ☒ / no ☐	yes ☒ / no ☐
Report Locations[1]	yes ☒ / no ☐	yes ☒ / no ☐
"Other" Report Locations[2]	yes ☐ / no ☒	yes ☐ / no ☒

3. Database Information:
(contact the IC for product examples, or visit the SSJVIC website for examples)

	Within project area	Within 1/2 mi. radius
ARCHAEOLOGICAL Resource Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Database		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
Report Database[1]		
List (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Detail (PDF format)	yes ☐ / no ☒	yes ☐ / no ☒
Excel Spreadsheet	yes ☒ / no ☐	yes ☒ / no ☐
Include "Other" Reports [2]	yes ☐ / no ☒	yes ☐ / no ☒

4. Document PDFs (paper copy only upon request)**:**

	Within project area	Within 1/2 mi. radius
ARCHAEOLOGICAL Resource Records[1]	yes ☒ / no ☐	yes ☒ / no ☐
NON-ARCHAEOLOGICAL Resource Records	yes ☒ / no ☐	yes ☒ / no ☐
Reports[1]	yes ☐ / no ☒	yes ☐ / no ☒
"Other" Reports[2]	yes ☐ / no ☒	yes ☐ / no ☒

CHRIS Data Request Form

5. Eligibility Listings and Documentation:

	Within project area	Within 1/2 mi. radius
OHP Built Environment Resources Directory[3]:		
Directory listing only (Excel format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☐ / no ☒	yes ☐ / no ☒
OHP Archaeological Resources Directory[1,5]:		
Directory listing only (Excel format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☐ / no ☒	yes ☐ / no ☒
***California Inventory of Historic Resources* (1976):**		
Directory listing only (PDF format)	yes ☒ / no ☐	yes ☒ / no ☐
Associated documentation[4]	yes ☐ / no ☒	yes ☐ / no ☒

6. Additional Information:

The following sources of information may be available through the Information Center. However, several of these sources are now available on the OHP website and can be accessed directly. The Office of Historic Preservation makes no guarantees about the availability, completeness, or accuracy of the information provided through these sources. Indicate below if the Information Center should review and provide documentation (if available) of any of the following sources as part of this request.

Caltrans Bridge Survey	yes ☐ / no ☒
Ethnographic Information	yes ☐ / no ☒
Historical Literature	yes ☒ / no ☐
Historical Maps	yes ☒ / no ☐
Local Inventories	yes ☒ / no ☐
GLO and/or Rancho Plat Maps	yes ☐ / no ☒
Shipwreck Inventory	yes ☐ / no ☒
Soil Survey Maps	yes ☐ / no ☒

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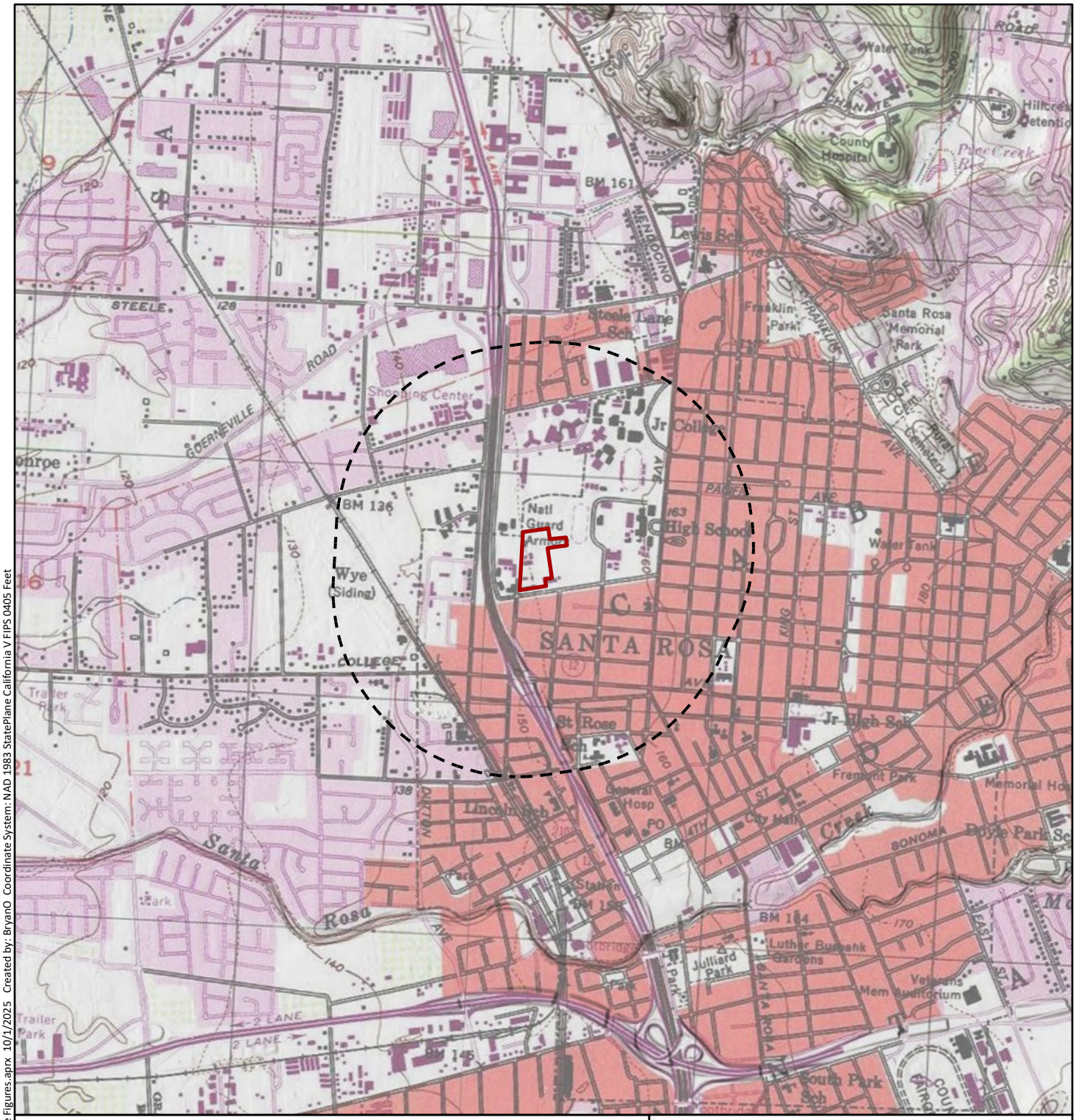
[1] In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User or Conditional User under an active CHRIS Access and Use Agreement.

[2] "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search.

[3] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Includes, but not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys. Previously known as the HRI and then as the HPD, it is now known as the Built Environment Resources Directory (BERD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

[4] Associated documentation will vary by resource. Contact the IC for further details.

[5] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Previously known as the Archaeological Determinations of Eligibility, now it is known as the Archaeological Resources Directory (ARD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.



0 1,000 2,000 4,000 Feet

1 inch = 2,000 feet

N

Legend

Site Boundary

Site Buffer - Half Mile

Base Map: USGS 7.5 Minute Topographic Quadrangle. Santa Rosa, CA (1994)

SAFETY FIRST

terraphase engineering

CLIENT: Santa Rosa City Schools

PROJECT: CEQA Review
211 Ridgway Ave, Santa Rosa, CA

PROJECT NUMBER: C102.001

Site Layout and Vicinity

FIGURE 2

File: N:\GIS\Prj\C102_Santa Rosa City Schools\Pro Project\Site Figures.aprx 10/1/2025 Created by: BryanO Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
https://nwic.sonoma.edu

11/3/2025 NWIC File No.: 25-0557

Charlane Gross
Terraphase Engineering
1415 L St, Suite 100
Sacramento, CA 95814

Re: New District Office and Education Center Project - C102.001

The Northwest Information Center received your record search request for the project area referenced above, located on the Santa Rosa USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a ½ mile radius:

Resources within project area:	None
Resources within ½ mile radius:	P-49-000134
Reports within project area:	S-048798
Reports within ½ mile radius:	11: See list below

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Archaeological Resources Directory:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☐ not requested	☒ nothing listed
Historical Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	☒ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed

Soil Survey Maps: ☐ enclosed ☒ not requested ☐ nothing listed

*Notes:

** Current versions of these resources are available on-line:

Caltrans Bridge Survey: https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Soil Survey: https://alabamamaps.ua.edu/historicalmaps/soilsurvey/California/california.html

Shipwreck Inventory: https://www.slc.ca.gov/shipwrecks/

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Justin Murazzo

Justin Murazzo, Researcher

Attachment C

NAHC Contact List, Native American Consultation

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Isaac Bojorquez
Ohlone-Costanoan

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Sara Dutschke
Miwok

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

COMMISSIONER
Vacant

COMMISSIONER
Vacant

ACTING EXECUTIVE SECRETARY
Michelle Carr

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

October 3, 2025

Charlane Gross
Terraphase Engineering

Via Email to: ***charlane.gross@terraphase.com***

Re: New District Office and Education Center Project, Sonoma County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were negative. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at my email address: melina.carlos@nahc.ca.gov

Sincerely,

Melina Carlos

Melina Carlos
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Sonoma County
10/3/2025

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Big Valley Band of Pomo Indians of the Big Valley Rancheria	F	Flaman McCloud, Jr., Chairperson	2726 Mission Rancheria Rd. Lakeport, CA, 95453	(707) 263-3924		Chairman@big-valley.net	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	8/21/2024
Cahto Tribe	F	Tasheena Sloan, Vice Chairperson	P.O. Box 1239 Laytonville, CA, 95454	(707) 984-6197		vicechair@cahtotribe-nsn.gov	Cahto Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/20/2023
Cahto Tribe	F	Kendra Campbell, Secretary-Treasurer	P.O. Box 1239 Laytonville, CA, 95454	(707) 984-6197	(707) 984-6201	secretary_treasurer@cahtotribe-nsn.gov	Cahto Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/20/2023
Cahto Tribe	F	Misty Davidson, Chairwoman	P.O Box 1239 300 Cahto Drive Laytonville, CA, 95454	(707) 984-6197		chair@cahtotribe-nsn.gov	Cahto Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/25/2025
Cahto Tribe	F	Rachael Phillips, Member-at-Large	P.O Box 1239 300 Cahto Drive Laytonville, CA, 95454	(707) 984-6197		ecmember@cahtotribe-nsn.gov	Cahto Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/25/2025
Cloverdale Rancheria of Pomo Indians	F	Patricia Hermosillo, Chairperson	555 S. Cloverdale Blvd., Suite A Cloverdale, CA, 95425	(707) 894-5775	(707) 894-5727		Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Coyote Valley Band of Pomo Indians	F	Richard Campbell, Acting Chairperson	P.O. Box 39/ 7901 Hwy 10, North Redwood Valley, CA, 95470	(707) 485-8723	(707) 485-1247	vc@coyotevalley-nsn.gov	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	6/26/2023
Dry Creek Rancheria of Pomo Indians	F	Sherrie Smith-Ferri, THPO	P.O. Box 607 Geyserville, CA, 95441	(707) 272-6767		sherries@drycreekrancheria.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/20/2023
Elem Indian Colony Pomo Tribe	F	Kim Cole, Tribal Administrator	16170 Main Street Lower Lake, CA, 95457	(707) 994-3400	(707) 994-3408		Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	7/8/2016
Elem Indian Colony Pomo Tribe	F	Thomas Brown, Cultural Resources Director	16170 Main Street Lower Lake, CA, 95457	(707) 994-3400			Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	1/15/2019
Elem Indian Colony Pomo Tribe	F	Agustin Garcia, Chairperson	P. O. Box 757 16170 Main Street Lower Lake, CA, 95457	(707) 994-3400	(707) 994-3408	Removed email address due to bounce back	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Estom Yumeka Maidu Tribe of the Enterprise Rancheria	F	Glenda Nelson, Chairperson	2133 Monte Vista Avenue Oroville, CA, 95966	(530) 532-9214	(530) 532-1768	info@enterpriserancheria.org	Maidu	Butte,Colusa,Del Norte,Glenn,Humboldt,Lake,Lassen,Mendocino,Plumas,Shasta,Sierra,Siskiyou,Sonoma,Teh	9/10/2024
Estom Yumeka Maidu Tribe of the Enterprise Rancheria	F	Nelson Smith, Tribal Historic Preservation Officer	2133 Monte Vista Avenue Oroville, CA, 95966	(530) 990-0063		nelsons@enterpriserancheria.org	Maidu	Butte,Colusa,Del Norte,Glenn,Humboldt,Lake,Lassen,Mendocino,Plumas,Shasta,Sierra,Siskiyou,Sonoma,Teh	9/10/2024
Federated Indians of Graton Rancheria	F	Greg Sarris, Chairperson	6400 Redwood Drive, Ste 300 Rohnert Park, CA, 94928	(707) 566-2288	(707) 566-2291	gbuvelot@gratonrancheria.com	Coast Miwok Pomo	Marin,Sonoma	11/1/2023
Federated Indians of Graton Rancheria	F	Gene Buvelot,	6400 Redwood Drive, Suite 300 Rohnert Park, CA, 94928	(707) 566-2288	(415) 279-4844	gbuvelot@gratonrancheria.com	Coast Miwok Pomo	Marin,Sonoma	11/1/2023
Guidiville Rancheria of California	F	Bunny Tarin, Tribal Administrator	PO Box 339 Talmage, CA, 95481	(707) 462-3682		admin@guidiville.net	Pomo	Alameda,Contra Costa,Lake,Marin,Mendocino,Napa,Sacramento,San Joaquin,Solano,Sonoma	6/21/2023
Guidiville Rancheria of California	F	Michael Derry, Historian	PO Box 339 Talmage, CA, 95481	(707) 391-1665			Pomo	Alameda,Contra Costa,Lake,Marin,Mendocino,Napa,Sacramento,San Joaquin,Solano,Sonoma	6/21/2023
Hopland Band of Pomo Indians	F	Ramon Billy, Tribal Historical Preservation Officer	3000 Shanel Road Hopland, CA, 95449	(707) 472-2100		thpo@hoplandtribe.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	4/30/2020
Hopland Band of Pomo Indians	F	Sonny Elliott, Chairperson	3000 Shanel Road Hopland, CA, 95449	(707) 472-2100	(707) 744-1506	sjelliott@hoplandtribe.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Koi Nation of Northern California	F	Darin Beltran, Chairperson	P.O. Box 3162 Santa Rosa, CA, 95402	(707) 575-5586	(707) 575-5506	kn@koination.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	7/7/2023

Koi Nation of Northern California	F	Dino Beltran, Vice Chairperson	P.O. Box 3162 Santa Rosa, CA, 95402	(707) 331-9788	(707) 575-5506	dbeltran@koination.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	7/7/2023
Koi Nation of Northern California	F	Robert Morgan, Tribal Historic Preservation Officer	P.O. Box 3162 Santa Rosa, CA, 95402	(707) 236-5271	(707) 575-5506	robmorgan@koination.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	7/7/2023
Lytton Rancheria	F	Brenda Tomaras, Attorney	10755-F Scripps Poway Parkway #281 San Diego, CA, 92131	(858) 554-0550		btomaras@mtowlaw.com	Pomo	Sonoma	3/11/2024
Lytton Rancheria	F	Andy Mejia, Chairperson	1500 Falling Oak Way Windsor, CA, 95492	(707) 575-5917		andymejia@lyttonrancheriaofcalifornia.com	Pomo	Sonoma	3/11/2024
Manchester Band of Pomo Indians of the Manchester Rancheria	F	Jaime Cobarrubia, Chairperson	P.O. Box 623 Point Arena, CA, 95468	(707) 882-2788	(707) 882-3417		Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Middletown Rancheria of Pomo Indians of California	F	Jose Simon III, Tribal Chairman	PO Box 1035 Middletown, CA, 95461	(707) 987-1303		jsimon@middletownrancheria.com	Lake Miwok Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	11/17/2023
Middletown Rancheria of Pomo Indians of California	F	Michael Rivera, Tribal Historic Preservation Officer	PO Box 1035 Middletown, CA, 95461	(707) 987-1315		mlrivera@middletownrancheria.com	Lake Miwok Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	11/17/2023
Middletown Rancheria of Pomo Indians of California	F	Tribal Historic Preservation Department,	PO Box 1035 Middletown, CA, 95461	(707) 987-1315		THPO@middletownrancheria.com	Lake Miwok Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	11/17/2023
Noyo River Indian Community	N	,	P. O. Box 91 Fort Bragg, CA, 95437				Pomo Yuki	Colusa,Glenn,Lake,Mendocino,Sonoma,Tehama,Trinity	6/7/2018
Pinoleville Pomo Nation	F	Erica Carson, Tribal Historic Preservation Officer	500 B Pinoleville Drive Ukiah, CA, 95482	(707) 463-1454	(707) 463-6601		Pomo	Lake,Mendocino,Napa,Sonoma	
Pinoleville Pomo Nation	F	Leona Willams, Chairperson	500 B Pinoleville Drive Ukiah, CA, 95482	(707) 463-1454	(707) 463-6601		Pomo	Lake,Mendocino,Napa,Sonoma	
Potter Valley Tribe	F	Salvador Rosales, Chairperson	2251 South State Street Ukiah, CA, 95482	(707) 462-1213	(707) 462-1240	pottervalleytribe@pottervalleytribe.com	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Redwood Valley or Little River Band of Pomo Indians	F	Debra Ramirez, Chairperson	3250 Road I Redwood Valley, CA, 95470	(707) 485-0361	(707) 485-5726	rvrsecretary@comcast.net	Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	
Robinson Rancheria of Pomo Indians	F	George Brenard, Environmental Director	1545 E Hwy 20 Nice, CA, 95464	(707) 382-1544		EPA.director@rrcbc-nsn.gov	Eastern Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/10/2025
Robinson Rancheria of Pomo Indians	F	Beniakem Cromwell, Chairperson	1545 E Hwy 20 Nice, CA, 95464	(707) 275-0527		Lduncan@rrcbc-nsn.gov	Eastern Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/10/2025
Robinson Rancheria of Pomo Indians	F	Stephanie Nix, Environmental Coordinator/ Acting THPO	1545 E Hwy 20 Nice, CA, 95464	(707) 530-9074		snix@rrcbc-nsn.gov	Eastern Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	3/10/2025
Round Valley Reservation/ Covelo Indian Community	F	James Russ, President	77826 Covelo Road Covelo, CA, 95428	(707) 983-6126	(707) 983-6128	tribalcouncil@rvit.org	ConCow Nomlaki Pit River Pomo Wailaki Wintun Yuki	Butte,Colusa,Glenn,Humboldt,Lake,Lassen,Mendocino,Modoc,Plumas,Shasta,Siskiyou,Sonoma,Sutter,Tehama,Trinity,Yuba	
Scotts Valley Band of Pomo	F	Shawn Davis, Chairperson	1005 Parallel Drive Lakeport, CA, 95453	(707) 263-4220	(707) 263-4345	shawn.davis@sv-nsn.gov	Pomo Wailaki	Colusa,Glenn,Humboldt,Lake,Mendocino,Sonoma,Trinity	
Yokayo Tribe	N	Yokayo Tribe, Chairperson	P.O. Box 362 Talmadge, CA, 95481				Pomo	Colusa,Glenn,Lake,Mendocino,Sonoma	

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed New District Office and Education Center Project, Sonoma County.

Record: PROJ-2025-005546
Report Type: List of Tribes
Counties: Sonoma
NAHC Group: All

SANTA ROSA CITY SCHOOLS

Erik Oden, Executive Director, Facilities,
Maintenance & Operations
110 Stony Point Rd. Suite 225
Santa Rosa, CA 95401
(707)890-3800 x80232
E-mail: eoden@srcs.k12.ca.us

November 14, 2025

To: Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive, Ste 300
Rohnert Park, CA, 94928

Subject: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

Dear Gene Buvelot,

This letter serves as notification of the Santa Rosa City School's proposed District Office and Education Center Project (Project), located at 211 Ridgway Avenue in Santa Rosa, Sonoma County (Proposed Project). The project involves constructing a new District Office and converting the existing District Warehouse for use by the Maintenance and Operations Department. The District would appreciate a response within 30 days if you have information on potential resources at the Project site.

The Project site encompasses approximately 8 acres within a larger 50-acre parcel (APN 180-470-007) owned by the District. The location is depicted on un-sectioned lands within Township 7 North, Range 8 west, as depicted on the Santa Rosa USGS quadrangle map.

- A record search was requested from the Northwest Information Center, Sonoma State University. The results, received in November 2025, indicate no archaeological resources reported within the Project site. The only find consists of an informal record from the early 20th century noting a prehistoric occupation site approximately 600 feet to the south.
- A search request submitted to the Native American Heritage Commission in October 2025 found that there are no listings in the Sacred Lands File. However, the NAHC identified your tribe as traditionally and culturally affiliated with the Project area.

The District would like to know if you have any knowledge of cultural resources in the vicinity of the project area or have any concerns with the Project. We would appreciate hearing from you. The District has retained Terraphase to conduct the cultural study for the Project. If you are aware of any cultural resources that may be affected, please contact Charlane Gross, M.A., RPA, Senior Archaeologist, at charlane.gross@terraphase.com or by phone at (530) 919-1975. You are also welcome to contact me directly at facilities@srcs.k12.ca.us or 707-890-3800 x80231.

Respectfully,

Erik Oden
Executive Director, Facilities, Maintenance & Operations

Attachments: Project Location Map

Erik Oden, Chief Operations Officer, Executive Director, Facilities, Maintenance & Operations
110 Stony Point Road, Suite 225
Santa Rosa, CA 95401
(707)890-3800 x80232
E-mail: eoden@srcs.k12.ca.us

Date: April 16, 2026

Via Email and U.S. Mail

Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Attn: Buffy McQuillen,
BMcQuillen@gratonrancheria.com

Subject: **Formal Notification Pursuant to AB 52 (Pub. Res. Code § 21080.3.1) – Santa Rosa City School's District Office and Education Center Project**

Dear Buffy McQuillen:

The Santa Rosa City School ("District"), as lead agency under the California Environmental Quality Act (CEQA), is providing this formal notification pursuant to Assembly Bill 52 (AB 52) (Public Resources Code section 21080.3.1) regarding the proposed District Office and Education Center Project ("Project").

This notice is being provided because the Federated Indians of Graton Rancheria ("Tribe") has been identified by the Native American Heritage Commission as a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Project.

The Project site encompasses approximately 8 acres within a larger approximately 50-acre parcel (APN 180-470-007) owned by the District, located at 211 Ridgway Avenue, Santa Rosa, Sonoma County, California 95401. The site is depicted on un-sectioned lands within Township 7 North, Range 8 West, as shown on the Santa Rosa USGS quadrangle map. A project location map is enclosed for reference.

The Project site is within a mixed residential/commercial neighborhood. The Project site is currently developed with maintenance and operations facilities, warehouse and service buildings, and associated improvements, including paved areas and storage uses. The District proposes to redevelop the Project site, by constructing a new District Office and Education Center. The Project would involve demolition of approximately 51,472 square feet of existing structures, and construction of approximately 44,804 square feet of new facilities, including a new warehouse building and a two-story District Office and Education Center, along with associated site

improvements. All services occupying the new structures would be relocated from buildings being demolished. No new uses or departments would be introduced, and the overall use of the site would remain consistent with existing conditions. Ground disturbance would occur throughout the Project site during demolition, grading, and construction activities.

Pursuant to Public Resources Code section 21080.3.1, the Tribe has the opportunity to request consultation with the District Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. If the Tribe wishes to request consultation, the Tribe must submit a written request for consultation within 30 days of receipt of this letter.

To assist the Tribe in evaluating whether to request consultation, the District provides the following background information. A cultural resources record search conducted by the Northwest Information Center at Sonoma State University in November 2025 identified no recorded archaeological resources within the Project site. One informal early 20th-century record notes a prehistoric occupation site approximately 600 feet south of the Project area. A Sacred Lands File search request submitted to the Native American Heritage Commission in October 2025 indicated no listings within the Project site. However, the Native American Heritage Commission identified the Tribe as traditionally and culturally affiliated with the Project area.

Any information provided by the Tribe during consultation regarding tribal cultural resources will be treated as confidential, to the extent permitted by law, consistent with Public Resources Code section 21082.3.

The District has retained Terraphase as the District's cultural resources consultant to assist with cultural resources analysis and coordination for the Project. Please direct any written request for consultation or other correspondence to the following contact:

Terraphase Engineering Inc.
Harlane Gross, M.A., RPA, Senior Archaeologist
(530)919-1975
Charlane.gross@terraphase.com

You may also contact the District directly at:

Santa Rosa City School
Erik Oden, Executive Director, Facilities, Maintenance & Operations
(707)890-3800 x 80231
facilities@srcs.k12.ca.us

The District values the Tribe's knowledge and expertise and looks forward to working collaboratively to identify and address any potential impacts to tribal cultural resources.

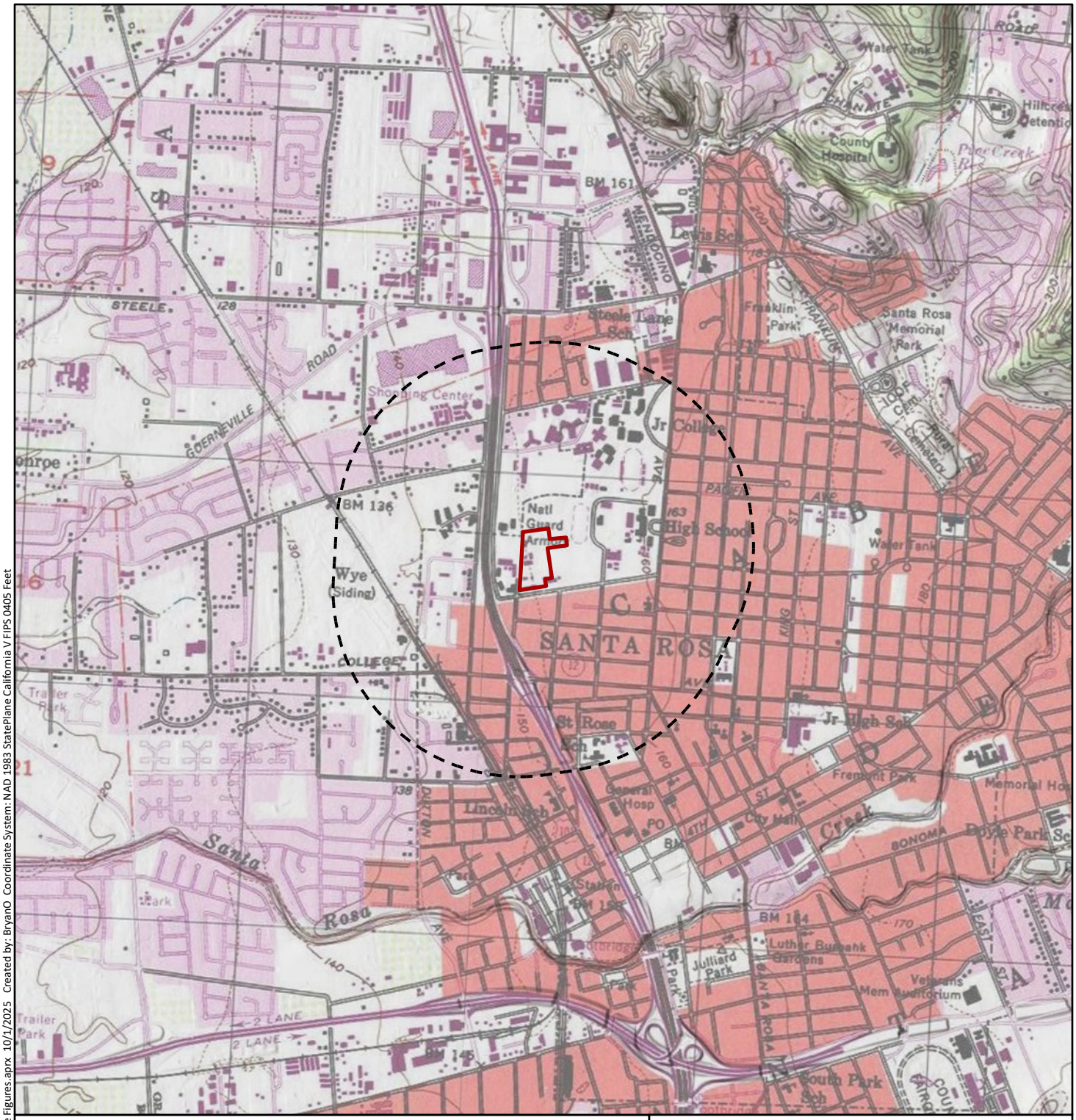
Sincerely,

Erik Oden

Erik Oden
Executive Director, Facilities, Maintenance & Operations
Santa Rosa City School

Attachments: Project Location Map

648-5/9314208.1



0 1,000 2,000 4,000 Feet

1 inch = 2,000 feet

N

Legend

Site Boundary

Site Buffer - Half Mile

Base Map: USGS 7.5 Minute Topographic Quadrangle. Santa Rosa, CA (1994)

SAFETY FIRST

terraphase engineering

CLIENT: Santa Rosa City Schools

PROJECT: CEQA Review
211 Ridgway Ave, Santa Rosa, CA

PROJECT NUMBER: C102.001

Site Layout and Vicinity

FIGURE 1

File: N:\GIS\Prj\C102_Santa Rosa City Schools\Pro Project\Site Figures.aprx 10/1/2025 Created by: BryanO Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



	SAFETY FIRST	CLIENT: Santa Rosa City Schools	Site Plan
	terraphase engineering	PROJECT: District Office and Education Center	
Source: ARNTZ/PBK ; February 13, 2025		PROJECT NUMBER: C102	FIGURE 2

Erik Oden, Chief Operations Officer, Executive Director, Facilities, Maintenance & Operations
110 Stony Point Road, Suite 225
Santa Rosa, CA 95401
(707)890-3800 x80232
E-mail: eoden@srcs.k12.ca.us

Date: April 16, 2026

Via Email and U.S. Mail

Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Attn: Hector Garcia Cabrales,
HGarcia@gratonrancheria.com

Subject: **Formal Notification Pursuant to AB 52 (Pub. Res. Code § 21080.3.1) – Santa Rosa City School's District Office and Education Center Project**

Dear Hector Garia Cabrales:

The Santa Rosa City School ("District"), as lead agency under the California Environmental Quality Act (CEQA), is providing this formal notification pursuant to Assembly Bill 52 (AB 52) (Public Resources Code section 21080.3.1) regarding the proposed District Office and Education Center Project ("Project").

This notice is being provided because the Federated Indians of Graton Rancheria ("Tribe") has been identified by the Native American Heritage Commission as a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Project.

The Project site encompasses approximately 8 acres within a larger approximately 50-acre parcel (APN 180-470-007) owned by the District, located at 211 Ridgway Avenue, Santa Rosa, Sonoma County, California 95401. The site is depicted on un-sectioned lands within Township 7 North, Range 8 West, as shown on the Santa Rosa USGS quadrangle map. A project location map is enclosed for reference.

The Project site is within a mixed residential/commercial neighborhood. The Project site is currently developed with maintenance and operations facilities, warehouse and service buildings, and associated improvements, including paved areas and storage uses. The District proposes to redevelop the Project site, by constructing a new District Office and Education Center. The Project would involve demolition of approximately 51,472 square feet of existing structures, and construction of approximately 44,804 square feet of new facilities, including a new warehouse building and a two-story District Office and Education Center, along with associated site

improvements. All services occupying the new structures would be relocated from buildings being demolished. No new uses or departments would be introduced, and the overall use of the site would remain consistent with existing conditions. Ground disturbance would occur throughout the Project site during demolition, grading, and construction activities.

Pursuant to Public Resources Code section 21080.3.1, the Tribe has the opportunity to request consultation with the District Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. If the Tribe wishes to request consultation, the Tribe must submit a written request for consultation within 30 days of receipt of this letter.

To assist the Tribe in evaluating whether to request consultation, the District provides the following background information. A cultural resources record search conducted by the Northwest Information Center at Sonoma State University in November 2025 identified no recorded archaeological resources within the Project site. One informal early 20th-century record notes a prehistoric occupation site approximately 600 feet south of the Project area. A Sacred Lands File search request submitted to the Native American Heritage Commission in October 2025 indicated no listings within the Project site. However, the Native American Heritage Commission identified the Tribe as traditionally and culturally affiliated with the Project area.

Any information provided by the Tribe during consultation regarding tribal cultural resources will be treated as confidential, to the extent permitted by law, consistent with Public Resources Code section 21082.3.

The District has retained Terraphase as the District's cultural resources consultant to assist with cultural resources analysis and coordination for the Project. Please direct any written request for consultation or other correspondence to the following contact:

Terraphase Engineering Inc.
Harlane Gross, M.A., RPA, Senior Archaeologist
(530)919-1975
Charlane.gross@terraphase.com

You may also contact the District directly at:

Santa Rosa City School
Erik Oden, Executive Director, Facilities, Maintenance & Operations
(707)890-3800 x 80231
facilities@srcs.k12.ca.us

The District values the Tribe's knowledge and expertise and looks forward to working collaboratively to identify and address any potential impacts to tribal cultural resources.

Sincerely,

Erik Oden

Erik Oden
Executive Director, Facilities, Maintenance & Operations
Santa Rosa City School

Attachments: Project Location Map

648-5/9314208.1

From:	Facilities Facilities
To:	THPO@gratonrancheria.com
Cc:	Erik Oden; Buffy McQuillen; Barbara Wu Heyman; Felicia Silveira; Brian Cameron; Daniel Stevens; Hector Garcia; Heather Torres; Ray Green
Subject:	Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
Date:	Friday, May 29, 2026 3:07:48 PM

Thank you for your correspondence requesting consultation regarding the District Office project.

The District values tribal input and recognizes the importance of identifying and addressing potential tribal cultural resources that may be associated with the project site. The District's records indicate that the request for formal AB 52 consultation was received after the 30-day response period identified in Public Resources Code section 21080.3.1.

While the formal AB 52 consultation request period has passed, the District remains committed to understanding any concerns the Tribe may have regarding potential tribal cultural resources. Accordingly, the District would welcome the opportunity to meet informally with the Tribe to discuss the project, better understand any concerns, and consider any information the Tribe wishes to provide.

Given the project schedule and the potential financial impacts associated with delay, the District would appreciate the opportunity to coordinate an informal meeting within the next seven (7) calendar days.

Please let us know if the Tribe would like to schedule an informal meeting, and we will make ourselves available to coordinate promptly.

Facilities Department
Santa Rosa City Schools
707-890-3800

On Tue, May 26, 2026 at 1:31 PM THPO@gratonrancheria.com <THPO@gratonrancheria.com> wrote:

> Good afternoon,
>
> The Tribe is interested in formal AB 52 consultation and will be sending a formal letter with dates for a meeting.
>
> Sincerely,
> Buffy McQuillen

Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Hector Garcia Cabrales
Cultural Resources Specialist
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 138
Mobile: 707.478.1737
Email: hgarcia@gratonrancheria.com

Federated Indians of Graton Rancheria: Proprietary and Confidential
Confidentiality Notice: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office and immediately delete this message and all its attachments, if any.

From: Facilities Facilities <facilities@srcs.k12.ca.us>
Sent: Thursday, April 23, 2026 12:20 PM
To: Hector Garcia <HGarcia@gratonrancheria.com>
Cc: THPO@gratonrancheria.com <THPO@gratonrancheria.com>; Erik Oden <eoden@srcs.k12.ca.us>; Buffy McQuillen <BMcQuillen@gratonrancheria.com>; Barbara Wu Heyman <barbara.heyman@terraphase.com>; Felicia Silveira <felicia.silveira@vpcsonline.com>; Brian Cameron <brian@vpcsonline.com>; Daniel Stevens <daniel.stevens@vpcsonline.com>
Subject: Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

Good Afternoon,

Following up on the email above.

Regarding Hector's previous correspondence about consultation interest, please confirm if the tribe wishes to proceed with scheduling a consultation. If so, what is your team's earliest availability?

Thank you,
Facilities Department
Santa Rosa City Schools
707-890-3800



On Thu, Apr 16, 2026 at 12:19 PM Facilities Facilities <facilities@srcs.k12.ca.us> wrote:

> Dear Hector and Buffy,
>
> Please find the attached Formal Notifications pursuant to AB 52.
>
> Regarding Hector's previous correspondence about consultation interest, please confirm if the tribe wishes to proceed with a formal request. If so, what is your team's earliest availability?
>
> Thank you,
> Jonette Johnson
> *Facilities Department*
> *Santa Rosa City Schools*
> *707-890-3800*
>
> On Thu, Apr 16, 2026 at 11:09 AM Facilities Facilities <facilities@srcs.k12.ca.us> wrote:
>
> > Dear Hector,
> >
> > We will be sending out the Formal Notification Pursuant to AB 52 today via email and U.S. Mail. Could you please confirm if you are the appropriate contact person for the Federated Indians of Graton Rancheria?
> >
> > I previously sent correspondence to Greg Sarris and Gene Buvelot, who were identified as the contacts on the Native American Heritage Commission's list for Sonoma County as of October 3, 2025.
> >
> > Additionally, we would like to schedule a meeting as soon as possible to discuss the "Santa Rosa City School's District Office and Education Center Project." Please let us know who we should coordinate with to arrange this meeting.
> >
> > Sincerely,
> > Jonette Johnson
> >
> > *Facilities Department*
> > *Santa Rosa City Schools*
> > *707-890-3800*
> >
> > On Mon, Apr 6, 2026 at 2:53 PM Hector Garcia <HGarcia@gratonrancheria.com> wrote:
> >
> > > Good afternoon,
> > >
> > > The letter is asking the Tribe for knowledge of cultural resources in the vicinity but

does not reference AB 52 consultation. The Tribe is interested in engaging in the project under AB 52 and recommends the School District to discuss with the hired CEQA consultant what a formal notification letter looks like. The formal letter is crucial to kick off consultation and allows the Tribe and School District to discuss the project in a confidential setting.

Sincerely,
Hector Garcia Cabrales
Cultural Resources Specialist
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 138
Mobile: 707.478.1737
Email: hgarcia@gratonrancheria.com

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From: Facilities Facilities <facilities@srcs.k12.ca.us>
Sent: Friday, March 27, 2026 10:20 AM
To: Hector Garcia <HGarcia@gratonrancheria.com>
Cc: THPO@gratonrancheria.com <THPO@gratonrancheria.com>; Erik Oden <eoden@srcs.k12.ca.us>; Buffy McQuillen <BMcQuillen@gratonrancheria.com>; Barbara Wu Heyman <barbara.heyman@terraphase.com>
Subject: Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

You don't often get email from facilities@srcs.k12.ca.us. Learn why this is important

Good Morning,

Please see attached email and attachments including formal notice letter sent on November 18, 2025.

Thank you,
Facilities Department
Santa Rosa City Schools
707-890-3800

On Fri, Mar 27, 2026 at 8:31 AM Hector Garcia <HGarcia@gratonrancheria.com> wrote:

> Hello,
>
> The Tribe is interested in the project and is recommending the School District to send a formal AB 52 notice letter.
>
> Sincerely,
> Hector Garcia Cabrales
> Cultural Resources Specialist
> Federated Indians of Graton Rancheria
> 6400 Redwood Drive, Suite 300
> Rohnert Park, CA 94928
> Office: 707.566.2288, ext. 138
> Mobile: 707.478.1737
> Email: hgarcia@gratonrancheria.com
>
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>
> ---
>
> **From:** Facilities Facilities <facilities@srcs.k12.ca.us>
> **Sent:** Thursday, March 26, 2026 4:43 PM
> **To:** THPO@gratonrancheria.com <THPO@gratonrancheria.com>
> **Cc:** Hector Garcia <HGarcia@gratonrancheria.com>; Erik Oden <eoden@srcs.k12.ca.us>
> **Subject:** Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
>
> > You don't often get email from facilities@srcs.k12.ca.us. Learn why this is important
>
> Good Afternoon,
>
> Attached is a draft technical memo outlining the results of our research thus far and recommendations for mitigation.
>
> We have hired a CEQA Consultant to assist us with navigating this process and are following the CEQA IS/MND process for this project.

Please let us know if you have any questions or would like a formal consultation with our facilities team.

Facilities Department
Santa Rosa City Schools
707-890-3800

On Tue, Dec 23, 2025 at 11:46 AM THPO@gratonrancheria.com <THPO@gratonrancheria.com> wrote:

> Dear Mr. Oden,
>
> Thank you for your outreach and request for identification of cultural resources from the Federated Indians of Graton Rancheria. The project area identified in your correspondence is within the Tribe's ancestral territory and there may be tribal cultural resource impacts. Please provide the Tribe with the results of your research efforts and recommendations. Also, for clarification, is this project going to go through CEQA?
>
> Sincerely,
>
> Buffy McQuillen
> Tribal Heritage Preservation Officer (THPO)
> Native American Graves Protection and Repatriation Act (NAGPRA)
> Office: 707.566.2288; ext. 137
> Cell: 707.318.0485
> FAX: 707.566.2291
>
> Hector Garcia Cabrales
> Cultural Resources Specialist
> Federated Indians of Graton Rancheria
> 6400 Redwood Drive, Suite 300
> Rohnert Park, CA 94928
> Office: 707.566.2288, ext. 138
> Mobile: 707.478.1737
> Email: hgarcia@gratonrancheria.com
>
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attachments, if any.

From: Gene Buvelot <GBuvelot@gratonrancheria.com>
Sent: Wednesday, November 19, 2025 8:37 AM
To: Hector Garcia <HGarcia@gratonrancheria.com>
Subject: Fw: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

Sent via the Samsung Galaxy S24 Ultra, an AT&T 5G smartphone
Get Outlook for Android

From: Facilities Facilities <facilities@srcs.k12.ca.us>
Sent: Tuesday, November 18, 2025 3:41:56 PM
To: Gene Buvelot <GBuvelot@gratonrancheria.com>
Subject: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

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Please see the letter and attachments below.

Thank you.

Office of Facilities, Maintenance, and Operations
Santa Rosa City Schools
707-890-3800

From:	Jonette Johnson
To:	Facilities Facilities; Barbara Wu Heyman; Brian Cameron; Ray Green
Subject:	Fwd: District Office Project
Date:	Thursday, January 8, 2026 3:40:57 PM

Here is a response that came in for the DO & Ed Center project.

Sincerely,

Jonette Johnson | Project Coordinator

Mobile: (707) 337-9399 | **Office:** (707) 438-3790

E-mail: jonette.johnson@vpcsonline.com

Address: 450 Chadbourne Road, Suite B., Fairfield, CA 94534

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---------- Forwarded message ---------
From: **Erik Oden** <eoden@srcs.k12.ca.us>
Date: Thu, Jan 8, 2026 at 1:42 PM
Subject: Fwd: District Office Project
To: Brian Cameron <brian@vpcsonline.com>, Felicia Silveira <felicia.silveira@vpcsonline.com>, Jonette Johnson <jonette.johnson@vpcsonline.com>, Ray Green <ray.green@vpcsonline.com>

Thank you,

Erik Oden
Executive Director, Facilities, Maintenance and Operations
Santa Rosa City Schools

---------- Forwarded message ---------
From: **Valerie Stanley** <noyoexists.24@gmail.com>
Date: Thu, Jan 8, 2026 at 3:07 PM
Subject: District Office Project
To: eoden@srcs.k12.ca.us <eoden@srcs.k12.ca.us>

Good Afternoon,
The Noyo River Indian Community has no further input.

We are a Mendocino County Tribe.
Thank you,

Valerie Stanley, Spokesperson
Noyo River Indian Community
P.O. Box 91
Fort Bragg, California 95490

From:	Facilities Facilities
To:	Barbara Wu Heyman
Cc:	Brian Cameron
Subject:	Fwd: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
Date:	Thursday, November 20, 2025 9:32:07 AM

Please see response from Middletown Rancheria below.

Thank you.
Jonette

Office of Facilities, Maintenance, and Operations
Santa Rosa City Schools
707-890-3800

---------- Forwarded message ---------
From: **Shane O'Riordan** <soriordan@middletownrancheria.com>
Date: Thu, Nov 20, 2025 at 8:32 AM
Subject: Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
To: Facilities Facilities <facilities@srcs.k12.ca.us>
Cc: <THPO@middletownrancheria.com>

Hello,

Thank you for reaching out to us regarding this project. After reviewing the project maps, Middletown Rancheria has determined the location to be outside of our ancestral area of concern. Therefore, we would like to defer to the **Federated Indians of Graton Rancheria** for any comments or concerns they may have in regards to this project.

Thank you,

Shane O'Riordan
Middletown Rancheria
Admin & Projects Coordinator
Tribal Historic Preservation Department
PO Box 1035 Middletown, CA 95461
Office: *(707) 987-1315*
Cell: *(415) 408-8460*
Email: ***soriordan@middletownrancheria.com***

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notify us immediately by telephone and destroy the original message. Thank you.

On Tue, Nov 18, 2025 at 5:08 PM 'Facilities Facilities' via THPO <THPO@middletownrancheria.com> wrote:

> Dear Tribal Historic Preservation Department,
> Please see the letter and attachments below.
>
> Thank you.
>
> *Office of Facilities, Maintenance, and Operations*
> *Santa Rosa City Schools*
> *707-890-3800*

From:	Facilities Facilities
To:	Barbara Wu Heyman
Cc:	Brian Cameron
Subject:	Fwd: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
Date:	Wednesday, December 3, 2025 1:26:40 PM

Dear Barbara,
Here is a response from Brenda with the Lytton Rancheria tribe.

Please let me know if you have any questions.

Facilities Department
Santa Rosa City Schools
707-890-3800

---------- Forwarded message ---------
From: **Facilities Facilities** <facilities@srcs.k12.ca.us>
Date: Wed, Dec 3, 2025 at 2:24 PM
Subject: Re: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County
To: Brenda L. Tomaras <btomaras@mtowlaw.com>

Thank you for letting us know.

Facilities Department
Santa Rosa City Schools
707-890-3800

On Wed, Dec 3, 2025 at 2:04 PM Brenda L. Tomaras <btomaras@mtowlaw.com> wrote:

> This shall serve as the Lytton Rancheria's response regarding the above-referenced project. Based on the materials provided, the Tribe is not seeking consultation on this project.
>
> Brenda L. Tomaras
> Tomaras & Ogas, LLP
> 10755-F Scripps Poway Parkway #281
> San Diego, CA 92131
> (858) 554-0550
> (858) 583-3482 Mobile
> (858) 777-5765 Facsimile

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From: Facilities Facilities <facilities@srcs.k12.ca.us>
Sent: Tuesday, November 18, 2025 4:57 PM
To: Brenda L. Tomaras <btomaras@mtowlaw.com>
Subject: Knowledge of Cultural Resources Near Santa Rosa City Schools' Proposed District Office and Education Center Project, Santa Rosa, Sonoma County

Dear Brenda Tomaras,

Please see the letter and attachments below.

Thank you.

Office of Facilities, Maintenance, and Operations

Santa Rosa City Schools

707-890-3800



Appendix D

Geotechnical Investigation

MILLER PACIFIC ENGINEERING GROUP

GEOTECHNICAL INVESTIGATION
SANTA ROSA CITY SCHOOLS
NEW DISTRICT OFFICE BUILDING AND
MAINTENANCE & OPERATIONS WAREHOUSE RENOVATION
211 RIDGWAY AVENUE
SANTA ROSA, SONOMA COUNTY, CALIFORNIA

November 17, 2025

Project 1079.122

Prepared For:
Santa Rosa City Schools
110 Stony Point Road, Suite 210
Santa Rosa, California 95401

Attn: Mr. Brian Cameron, Senior Project Manager
Van Pelt Construction Services

CERTIFICATION

This document is an instrument of service, prepared by or under the direction of the undersigned professionals, in accordance with the current ordinary standard of care. The service specifically excludes the investigation of radon, asbestos or other hazardous materials. The document is for the sole use of the client and consultants on this project. No other use is authorized. If the project changes, or more than two years have passed since issuance of this report, the findings and recommendations must be reviewed by the undersigned.

MILLER PACIFIC ENGINEERING GROUP
(a California corporation)



Benjamin S. Pappas
Geotechnical Engineer 2786
(Expires 9/30/26)

REVIEWED BY



Michael Jewett
Engineering Geologist 2610
(Expires 1/31/27)

MILLER PACIFIC ENGINEERING GROUP

GEOTECHNICAL INVESTIGATION
SANTA ROSA CITY SCHOOLS
NEW DISTRICT OFFICE BUILDING AND
MAINTENANCE & OPERATIONS WAREHOUSE RENOVATION
211 RIDGWAY AVENUE
SANTA ROSA, SONOMA COUNTY, CALIFORNIA

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GEOTECHNICAL INVESTIGATION
SANTA ROSA CITY SCHOOLS
NEW DISTRICT OFFICE BUILDING AND
MAINTENANCE & OPERATIONS WAREHOUSE RENOVATION
211 RIDGWAY AVENUE
SANTA ROSA, SONOMA COUNTY, CALIFORNIA

1.0 INTRODUCTION

This report summarizes our Geotechnical Investigation for the proposed new Santa Rosa City Schools District Office Building and Education Center, located at 211 Ridgway Avenue in Santa Rosa, California. A Site Location Map is shown on Figure 1. Our work has been performed in accordance with our Agreement dated August 6, 2025.

The purpose of our services is to investigate surface and subsurface site conditions, evaluate geologic hazards that may impact the project, and develop geotechnical recommendations for use in design and construction of the proposed improvements. The scope of our Investigation is intended to satisfy the requirements of California Geological Survey (CGS) Note 48, and includes:

- Review of readily available published geologic and geotechnical reference data.
- A site reconnaissance to observe and document existing conditions.
- Subsurface exploration with five soil borings and seven Cone Penetration Tests (CPTs).
- Geotechnical laboratory testing of select soil samples.
- Two-dimensional seismic refraction survey including two seismic lines.
- Evaluation of geologic hazards and development of conceptual mitigation measures.
- Development of geotechnical design recommendations for the project; and
- Preparation of this report summarizing our findings.

Issuance of this report concludes our Phase 1 services. Future phases of work are expected to include Geotechnical Consultation and Plan Review (Phase 2) and Geotechnical Observation and Testing During Construction (Phase 3).

2.0 PROJECT DESCRIPTION

Preliminary plans indicate that the project includes demolishing most of the existing structures at the old Ridgeway High School campus and constructing a new two-story, steel framed, 31,600 square-foot (footprint) office building (District office) in the southern part of the site along Ridgway Avenue. An 8,000 square-foot solar panel canopy structure will be constructed to the north of the office building. The existing 33,000 square-foot maintenance and operations warehouse at the north end of the site will also be renovated, although specific details regarding the extent of that work are unknown at this time. Ancillary improvements are expected to include site drainage improvements, underground utilities, exterior flatwork and pavements, landscaping, and other “typical” items. Relatively minor grading, consisting primarily of relatively shallow excavations for new foundations and utilities, is expected for the project. The approximate locations of the planned improvements are shown on the Site Plan (Figure 2).

We understand from the design team that plans for renovation of the Maintenance and Operations warehouse will not be reviewed by DSA/CGS. Regardless, the scope of this report and the geotechnical criteria and recommendations contained herein are intended to apply to all of the work items described above.

3.0 SITE SETTING

The site lies in the West Junior College neighborhood of north-central Santa Rosa, at the northeast corner of Ridgway Avenue and Ripley Street and about 500 feet east of Highway 101. The approximately 6.2-acre site is bounded to the north by Santa Rosa High School athletic facilities, to the east by the new Ridgeway High School campus, to the south by Ridgway Avenue, and to the west Ripley Street. Development to the south generally consists of single-family homes, while the west side of Ripley Street is occupied by a variety of commercial and light industrial structures.

3.1 Regional Geology

Sonoma County is located in the Coast Ranges geomorphic province of California, which is typified by generally northwest-trending ridges and intervening valleys formed as a result of movement along a group of northwest-trending fault systems, including the San Andreas Fault. Bedrock geology within Sonoma County is dominated by sedimentary, igneous, and metamorphic rocks of the Jurassic-Cretaceous age Franciscan Complex. Sandstone and shale comprise the majority of Franciscan rock types, while less common rocks include chert, serpentinite, basalt, greenstone, and exotic low- to high-grade metamorphic rocks, including phyllite, schist, and eclogite.

As shown on Figure 3, regional geologic mapping by CGS (McLaughlin et al, 2008) indicates that the project site is underlain by undifferentiated alluvial fan, stream terrace, and basin deposits of Holocene age (map symbol Qhf). These deposits typically consist of poorly- to moderately sorted gravel, sand, silt, and clay deposited by active streams where they emanate from adjacent uplands onto the valley floor. The active, northwest trending Rodgers Creek Fault passes just under 2 kilometers east of the site. No other faults or significant geologic features are mapped in the general site vicinity.

3.2 Seismicity

The project site is located within a seismically active region that includes the Central and Northern Coast Mountain Ranges. Several active faults are present east and west of the site including the San Andreas, San Gregorio, and Hayward Faults, among others. An “active” fault is defined as one that shows displacement within the last 11,000 years and thus considered more likely to generate a future earthquake than a fault that shows no sign of recent rupture. The 2010 Fault Activity Map of California (Jennings and Bryant, 2010) depicts various active and inactive faults in the region, which are shown in relation to the project site on Figure 4. The Rodgers Creek and Maacama Faults are the nearest known active faults to the site, located approximately 1.9-kilometers east and 8.6-kilometers northeast of the site, respectively.

3.2.1 Historic Fault Activity

Numerous earthquakes have occurred in the region within historic times. Earthquakes (magnitude 5.0 and greater) that have occurred in the San Francisco Bay Area between 1830 and 2025 have been plotted on a map shown on Figure 5. We reviewed the California Geological Survey Historic Earthquake Online Database (https://earthquake.usgs.gov/earthquakes/search/), we judge the most significant historic earthquakes to have impacted Santa Rosa and the greater Sonoma County area are outlined below:

1906 San Francisco Earthquake – The April 18, 1906, magnitude 7.9 earthquake occurred on the northern segment of the San Andreas Fault. The earthquake resulted in catastrophic damage throughout the greater Bay Area. Significant damage, including complete structural collapses, and 498 deaths were reported in San Francisco.

1969 Rodgers Creek/Healdsburg Fault Earthquakes – Two earthquakes of magnitudes 5.6 and 5.7 originated on the Rodgers Creek and Healdsburg Faults. The resulting damage was concentrated in Santa Rosa with partial and near structural collapses. No loss of life was reported.

1989 Loma Prieta Earthquake – The magnitude 6.9 earthquake was a result of a rupture along the San Andreas Fault in the Santa Cruz Mountains. Significant damage was reported throughout the Bay Area, with a majority occurring in San Francisco, Oakland, and Santa Cruz in the form of structural collapses and loss of life. Significant damage was not reported in the Santa Rosa area.

2014 South Napa Earthquake – The magnitude 6.0 earthquake was a result of a rupture along the West Napa Fault with the epicenter located in southern Napa. The earthquake resulted in moderate to significant damage in the City of Napa and neighboring cities. Effects included surface fault rupture, partial building collapse, and structural fires. Over 300 people were injured, and one fatality was reported.

3.2.2 Probability of Future Earthquakes

The site will likely experience moderate to strong ground shaking from future earthquakes originating on any of several active faults in the San Francisco Bay region. Historical records do not directly indicate either the maximum credible earthquake or the probability of such a future event. To evaluate earthquake probabilities in California, the USGS has assembled a group of researchers into the “Working Group on California Earthquake Probabilities” (Aagaard, et. al., 2016) to estimate the probabilities of earthquakes on active faults. These studies have been published cooperatively by the USGS, CGS, and Southern California Earthquake Center (SCEC) as the Uniform California Earthquake Rupture Forecast (UCERF). In these studies, potential seismic sources were analyzed considering fault geometry, geologic slip rates, geodetic strain rates, historic activity, micro-seismicity, and other factors to arrive at estimates of earthquakes of various magnitudes on a variety of faults in California.

The study specifically analyzed fault sources and earthquake probabilities for the seven major regional fault systems in the Bay Area region and the entire state of California and updated some of the analytical methods and models. The most recent study (UCERF3)(Field et al, 2015) further expanded the database of faults considered and allowed for consideration of multi-fault ruptures, among other features.

Conclusions from the most recent UCERF3 and USGS (Aagard et. al., 2016) studies indicate the highest probability of a M>6.7 earthquake on any of the active faults in the San Francisco Bay region by 2043 is assigned to the Hayward/Rodgers Creek Fault, located approximately 1.9-kilometers northeast of the site, at 33%. The second nearest known active fault, the Maacama Fault which is located 8.6-kilometers northeast of the site and is assigned an 8% probability of a M>6.7 earthquake by 2043. Additional studies by the USGS regarding the probability of large earthquakes in the Bay Area are ongoing. These current evaluations include data from additional active faults and updated geological data.

4.0 INVESTIGATIVE METHODS

Investigative methods utilized for this project included a surface geologic reconnaissance of the project site and surrounding area, review of regional geologic bedrock and hazards mapping, subsurface exploration with five soil borings and seven CPTs, a seismic refraction survey with two seismic lines, and laboratory testing of select soil samples. Our review of regional geologic fault mapping is discussed above in Section 3. Summaries of our site reconnaissance, subsurface exploration, laboratory testing, and seismic refraction surveying are presented in the following sections. Our review of pertinent geologic hazards mapping is discussed in detail in Section 6.

4.1 Site Reconnaissance

We performed a site reconnaissance on September 9, 2025, to observe existing conditions at the site. The campus is mostly level with surface elevations ranging from about 151- to 153-feet above sea level. The site was formerly used as a high school campus and is developed with several single- and two-story buildings, asphalt and concrete walkways, and parking lots. Some of the former school buildings on the southern end of the site have already been demolished, and only portions of the concrete foundation elements remain.

During our reconnaissance, we observed that existing improvements within the work area generally appear to have performed well, and we did not observe significant evidence of distress related to expansive soils, settlement, or other geotechnical conditions. Where exposed, surface soils included various silts, sands, and gravels. No bedrock outcrops were noted in the general site vicinity

4.2 Soil Borings

Five soil borings were drilled between September 24th through the 26th, 2025 at the approximate locations shown on Figure 2. The borings were excavated using a truck-mounted drill rig, equipped with 6-inch hollow-stem and 4-inch solid flight augers and were extended to maximum explored depths between 25- and 56.5 feet below the ground surface. Soil and rock materials encountered were examined and logged in the field by our geologist, who collected disturbed and relatively “undisturbed” samples at select intervals for laboratory testing. Upon completion, the borings were backfilled with neat cement grout in accordance with County permit requirements. Soil boring equipment and sampling methods are described in more detail in Appendix A. Brief explanations of the terms and methodology used in classifying earth materials are provided on the attached Soil Classification Chart, Figure A-1. Boring Logs are shown on Figures A-2 through A-13.
Sampler bow counts were typically recorded in 6-inch increments, over a total of 18-inches. Because these blow counts can be skewed in soils containing a significant proportion of coarse clasts (i.e., gravel and cobbles, sampler blows were counted in 1-inch intervals in gravelly soils. Field blow counts per inch were then corrected using methods developed by Idriss and Boulanger (2008), as shown on Figures A-14 through A-18.

4.3 Laboratory Testing

Geotechnical laboratory testing of select samples recovered from our soil borings included determination of moisture content, dry density, unconfined compressive strength, percent material finer than the #200 sieve, sieve analysis, plasticity index, expansion index and corrosion potential in general accordance with ASTM, Caltrans, EPA, and/or other applicable standards. The results of the moisture content, dry density, material finer than the #200 sieve, unconfined compressive strength, plasticity index and expansion index tests are presented on the boring logs. Results of plasticity index, expansion index and corrosion potential tests are presented on Figures A-19 through A-23. The laboratory testing program is discussed in further detail in Appendix A.

4.4 Cone Penetration Tests

We performed seven Cone Penetration Tests (CPTs) on September 22nd and 23rd, 2025 at the approximate locations shown on Figure 2. The Cone Penetration Test (CPT) is a special exploration technique which records continuous data throughout the depth of exploration. The CPT exploration process is described in more detail in Appendix B. Using a truck-mounted 25-ton capacity instrument, our CPTs were pushed to maximum depths between roughly 50- and 80-feet below the ground surface. A schematic diagram of the CPT instrument and a CPT Soil Interpretation Chart are shown on Figure B-1, and the CPT logs are shown on Figures B-2 through B-8.

In addition to continuous measurement of soil properties under “static” conditions, shear wave velocity measurements were taken at selected intervals via use of an incorporated tri-axial geophone. For this study, shear-wave velocity measurements were recorded on 5-foot intervals at the locations of CPT-01 and CPT-04 in order to calculate the average shear wave velocity in the upper 100-feet of the subsurface (Vs_{30}). The resulting velocity profile shown on Figure B-9 indicates a V_{S30} value of 845 ft/sec (258 m/s).

4.5 Seismic Refraction Survey

Geophysical surveying was conducted in the field by our geologist and included performance of two subsurface seismic refraction (SR) surveys along the alignments shown on Figure 2. This work was performed for the purpose of supplementing the boring and CPT data and evaluate Vs_{30} across the site. Field data collection was performed using a 24-channel seismic array and both active and passive sources, and data reduction and analysis was performed by Terēan, Inc. of Reno, Nevada.

Survey results indicate an average shear wave velocity of 865 ft/sec (264 m/s), which is in good agreement with measurements recorded during our CPTs. Graphic survey plots and more detailed discussion regarding field data collection techniques, equipment used, and analytic methods are provided as part of Terēan’s report in Appendix C.

5.0 SITE GEOLOGIC CONDITIONS

The results of our subsurface exploration generally confirm regionally mapped geologic conditions as discussed in Section 3.1. The project site is underlain by relatively flat-lying Holocene and probable Pleistocene alluvial deposits which are interpreted to be correlative to geologic map unit "Qhf" as shown on Figure 3.

Soils generally include a variety of interbedded clayey to gravelly materials deposited in alluvial channel, terrace, fan, and /or floodplain environments. As shown on Figure 6, many of these deposits are laterally continuous across portions of the site, while others occur as seams and lenses. The results of our seismic surveying generally corroborate conditions interpreted from our borings and CPTs and indicate that the upper 35 to 40 feet of the subsurface have shear wave velocities less than about 650 feet per second. Surveys indicate a sharp boundary at that depth which marks the upper surface of high-velocity materials with velocities greater than 1,000 feet per second, which is interpreted as a probable contact between Holocene and Pleistocene alluvium. Geologic cross-sections derived from our subsurface exploration are shown on Figure 6.

Groundwater was encountered at depths between 9.0- and 23.0-feet below the ground surface in our soil borings. However, the borings were not left open for an extended period of time, and a stabilized groundwater depth may not have been recorded. Pore pressure dissipation tests were conducted in each of our CPTs and indicate groundwater levels between 10.1- and 21.6-feet below the ground surface.

We reviewed the California Department of Water Resources (DWR) Water Data Library (https://wdl.water.ca.gov/) and the California State Water Resources Control Board's Geotracker website (https://geotracker.waterboards.ca.gov/) for additional local groundwater data. Water level data from five wells on the Cal Fire property west of the project site show the highest historic groundwater depth of 5.25-feet below the ground surface.

Groundwater levels will typically fluctuate seasonally, with higher levels generally expected during and following the rainy season. Based on our subsurface exploration and review of existing groundwater data, we estimate the highest historic groundwater level of 5.0-feet below the ground surface.

6.0 GEOLOGIC HAZARDS EVALUATION

The principal geologic hazards which could potentially affect the project site are strong seismic shaking from future earthquakes in the San Francisco Bay Region, liquefaction and post liquefaction settlement. Other geologic hazards are not considered significant with respect to the proposed project. A summary of individual hazards considered, their potential impacts, and recommended conceptual mitigation measures are provided in the following sections.

6.1 Fault Surface Rupture

Under the Alquist-Priolo Earthquake Fault Zoning Act (1972), the California Geological Survey produces 1:24,000 scale maps showing all known active faults and defining zones within which special fault studies are required. We reviewed digitized versions of these maps made available through the California Geological Survey (CGS) Earthquake Hazards Zone Application (EQZAPP, (https://maps.conservation.ca.gov/cgs/EQZApp/app/). The site is not located within an Alquist-Priolo Earthquake Fault Zone, and we did not observe any indications of active or historic faulting during our site reconnaissance. The Rodgers Creek Fault is the nearest known active fault and is located approximately 1.9 kilometers northeast of the site. The likelihood of fault surface rupture at the site is low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.2 Seismic Shaking

The site will likely experience seismic ground shaking from future earthquakes in the San Francisco Bay Area. Earthquakes may occur along any of several active faults in the region, as shown on Figure 4, and could cause moderate to strong ground shaking at the site. Data collected during our CPTs and refraction survey indicates a Vs30 value of 845 ft/sec, it is our opinion that “Site Class D” is an appropriate classification for the purpose of project analysis and seismic design.

6.2.1 Deterministic Seismic Hazard Analysis

Deterministic Seismic Hazard Analysis (DSHA) predicts the intensity of earthquake ground motions by analyzing the various characteristics of nearby faults, including distance, estimated earthquake magnitudes and shaking duration, and site-specific geologic conditions. Empirical relations (Abrahamson, Silva & Kamai, Boore, Stewart, Seyhan & Atkinson, Campbell & Borzognia, and Chiou & Youngs, (2014)) were utilized to develop estimates of median peak ground accelerations based on interpreted subsurface conditions. A summary of the principal active faults affecting the site, their closest distance, moment magnitude of characteristic earthquake, probable median accelerations and plus one standard deviation (+1σ), peak ground accelerations (PGA) for earthquakes on faults near the site are shown in Table A.

Table A: DSHA Peak Ground Accelerations

Fault Rupture Scenario	*Fault Distance[1]*	*Moment Magnitude[2]*	*Median PGA[3,4]*	*+1σ PGA[3,4]*
Rodgers Creek Fault: RC+HN+HS+HE	1.9 km	7.6	0.50 g	0.83 g
Maacama Fault	8.6 km	7.6	0.37 g	0.62 g
San Andreas Fault: SAO+SAN+SAP+SAS	30.9 km	8.0	0.22 g	0.38 g
West Napa	31.5 km	7.0	0.14 g	0.25 g
Collayomi Fault	35.5 km	6.7	0.11 g	0.19 g

Notes:

1. *Fault locations and distances measured from USGS Quaternary Fault and Fold Database, https://www.usgs.gov/programs/earthquake-hazards/faults, accessed 2025.*
2. *Values determined using USGS Earthquake Scenario Map (BSSC 2014), https://usgs.maps.arcgis.com/apps/webappviewer/index.html, accessed 2025.*
3. *Values determined using V_{S30} = 260 m/s for "Site Class D". See Section 7.1 of this report for additional discussion regarding site classification.*
4. *Abrahamson, Silva and Kamai (2014); Boore, Stewart, Seyhan and Atkinson (2014); Campbell and Borzognia (2014); and Chiou and Youngs (2014).*

Key:

RC – Rodgers Creek – Healdsburg Fault
HN – Hayward Fault, Northern Section
HS – Hayward Fault, Southern Section
HE – Hayward Fault, Southern Extension
SAO – San Andreas Fault, Offshore
SAN – San Andreas Fault, North Coast
SAP – San Andreas Fault, Peninsula
SAS – San Andreas Fault, Santa Cruz Mountains

6.2.2 Probabilistic Seismic Hazard Analysis

Probabilistic Seismic Hazard Analysis (PSHA) analyzes all possible earthquake scenarios and considers the probability of each individual event to occur. The probability is expressed in the form of the recurrence interval, which is the average time for a specific earthquake acceleration to be exceeded. The design earthquake is not solely dependent on the fault with the closest distance to the site and/or the largest magnitude, but rather the probability of given seismic events occurring on both known and unknown faults.

We calculated the PGA for two separate probabilistic conditions, the 2% chance of exceedance in 50 years (2,475-year statistical return period), and the 10% chance of exceedance in 50 years (475-year statistical return period), utilizing the USGS Unified Hazard Tool (USGS, accessed 2025). The results of the probabilistic analyses are presented below in Table B.

Table B: PSHA Peak Ground Accelerations

	Statistical Return Period	*Moment Magnitude*	*PGA*
2% in 50 years	2,475 years	7.1	0.99 g
10% in 50 years	475 years	7.0	0.56 g

Reference:

USGS Unified Hazard Tool, https://earthquake.usgs.gov/hazards/interactive/, "Dynamic: Conterminous U.S. 2014 (update), Version 4.2.0, accessed 2025.

The potential for strong seismic shaking at the project site is high. Due to their proximity and probability of future rupture, the Rodgers Creek and Maacama Faults present the highest potential for strong ground shaking. The most significant adverse impact associated with strong seismic shaking is potential damage to structures and improvements.

Evaluation: *Less than significant with mitigation.*
Recommendations: *Minimum mitigation measures should include designing the structures and foundations in accordance with the most recent edition of the California Building Code.*

6.3 Liquefaction and Related Impacts

Liquefaction refers to the sudden, temporary loss of soil shear strength that typically occurs when loose and saturated granular deposits are subjected to strong seismic ground shaking. Recent advances in liquefaction studies (Idriss & Boulanger; 2008, 2010 and 2014) indicate that liquefaction can occur in granular materials with a high fines content (35 to 50% clay and silt particles that pass the #200 sieve) provided the fines exhibit a plasticity index (PI) less than 7. Liquefaction-related phenomena include liquefaction-induced settlement, bearing capacity loss, flow failure, and lateral spreading.

The project site has not been evaluated for liquefaction or other seismic hazards by CGS (https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed 2025). As shown on Figure 7, the site is mapped in a zone of moderate liquefaction susceptibility by the USGS (Witter et al, 2006).

6.3.1 Liquefaction Occurrence

To evaluate soil liquefaction, the seismic energy from an earthquake is compared with the ability of the soil to resist pore pressure generation, known as the Cyclic Resistance Ratio (CRR). The earthquake energy is termed the cyclic stress ratio (CSR) and is a function of the maximum considered earthquake peak ground acceleration (PGA) and depth. Soil resistance to liquefaction is based on its relative density, and the amount and plasticity of fine-grained material (silts and clays). The relative density of cohesionless soil is correlated with the Standard Penetration Test (SPT) blow count data measured in the field and corrected for hammer efficiency, overburden and percent fines to determine the $(N_1)_{60,CS}$ value.

We analyzed the potential for liquefaction using data obtained from our borings and CPTs and procedures outlined by Idriss and Boulanger (2008, 2010 and 2014). The design seismic event consisted of a magnitude 7.6 earthquake producing a PGA of 1.02 g, which corresponds to the PGA_M value as defined in ASCE 7-16 for “Site Class D”. T

Input parameters, calculations, and results of our SPT-based analyses are shown on Figures 8 through 13. Results are plotted on Figure 14 and indicate several individual horizons of liquefiable materials, each ranging between about 2- and 7 feet thick and lying at depths between about 10 and 25, and between 45 and 50 feet underlie the southern part of the site where they were encountered in Borings 1 through 3. Analysis of data from Borings 4 and 5 in the northern part of the site does not indicate any liquefaction potential.

The CPT data was analyzed using the computer program CLiq 3.0 (v.3.5.3.10, GeoLogismiki, 2006). The results of the CPT-based liquefaction analyses are presented on Figures 14 through 20 and indicate that several zones of liquefiable material occur at varying depths, typically between about 10 and 50 feet below the ground surface, with individual layers ranging from a few inches to several feet thick.

The results of our SPT- and CPT-based results are in relatively good agreement. However, it is our opinion that the CPT-based analysis is more realistic based on the increased precision with which the CPT instrument is capable of identifying discrete soil layer thickness versus examination of drill cutting and non-continuous soil samples.

In order to further refine our analysis and confirm CPT soil interpretations, we compared laboratory test results from soil samples at Boring 1 with data from CPT-01.Lab testing of samples collected at depths between 10 and 15 feet in Boring 1 indicate that soils in that interval consist predominantly of clay, and are not liquefiable even though that horizon was interpreted as liquefiable by CPT analyses. Based on our lab testing, we modified the Ic cut-off value, which is the parameter the CPT utilizes to distinguish between granular and non-granular soils, from 2.60 to 2.50 in CPT-01 to more closely match the SPT analysis in Boring 1. The modified Ic value was also applied to the remaining CPTs. The results of the modified CPT-based liquefaction analysis is presented on Figures 21 through 27.

Additionally, we utilized the procedures outlined by Ozocak and Sert (2010) to calculate the Liquefaction Potential Index (LPI). LPI is a function of the thickness, depth, and factor of safety of liquefiable layers within a soil column and corresponds to a relative potential for effects at the ground surface, such as ground deformation, sand boils, and other phenomena. Typically, an LPI lower than 5 indicates a minor probability of surface effects, an LPI between 5 and 15 indicates a moderate probability, and an LPI greater than 15 indicates a high probability. The results of our analyses indicate LPI values at the site range from about 3 to 20, indicating locally variable susceptibility to surface impacts, with higher LPI values generally concentrated around the southern part of the proposed office building near Borings 1 through 3.

6.3.2 Post-Liquefaction Settlement

We predicted the amount of post-liquefaction settlement utilizing the procedures outlined by Idriss and Boulanger (2008, 2010 & 2014), which indicate post liquefaction settlement can occur in soils that exhibit a factor of safety against liquefaction of 2.0 or less. The results of our analyses indicate that total settlements between 0.2- and 1.5-inches are possible throughout the site. However, the predicted liquefaction and post liquefaction settlements vary across the site as outlined below:

- District Office Building – Analyses indicate that total settlements between about 0.2 and 3.7 inches may be possible. We estimate that differential settlements of up to about 2 inches over a 30-foot span could be expected
- Solar Panel Canopy – The liquefaction analyses performed from the CPT data obtained in the vicinity of the planned solar canopy structure, CPTs 4 and 5, indicate post liquefaction total and differential settlements up to 0.3-inches may occur during a strong seismic event.
- Existing Warehouse Structure – The liquefaction analyses performed from the CPT data obtained in the vicinity of the existing warehouse building, CPTs 5 through 7, indicate total post liquefaction settlements between 0.5-inches and 1.3-inches may occur, with differential settlements up to about 0.5 inches over a 30-foot span.

6.3.3 Bearing Capacity Loss

Based on the stress distribution theory developed by Boussinesq, 90% of the foundation stress of an isolated footing will extend roughly 2.0 times the foundation width, or roughly 6.0 times the foundation width for continuous footings. The shallowest liquefiable layers identified within the office building footprint were located roughly 7- to 10-feet below the ground surface. Therefore, if shallow foundations are utilized to support the District Office building some bearing capacity loss may occur during a strong seismic event, depending on the size of the foundation elements. We judge that loss of bearing capacity is also possible in the northeastern part of the warehouse building where liquefiable soils are interpreted at depths between 5 and 10 feet.

Liquefiable soils in the area of the solar canopy are deeper, and we do not anticipate bearing capacity loss in that area, or in the southern part of the warehouse building. There is a 5-foot-thick layer of liquefiable soil near the northeastern corner of the warehouse building, and we judge loss of bearing capacity is also possible

6.3.4 Flow Failure and Lateral Spreading

Flow failure and lateral spreading may occur where liquefied soils flow laterally toward a "free face", such as a slope or channel bank. Such conditions generally do not exist at or in close proximity to the site.

Based on our analyses described above, we judge there is a high risk of liquefaction during a seismic event, which may result total and differential settlements and loss of bearing capacity.

Evaluation: *No significant impact with special engineering measures.*
Recommendations: *Foundations and structures should be designed to withstand the predicted total and differential post-liquefaction settlements and potential loss of bearing capacity. Deep foundations which derive their capacity from firm, non-liquefiable soils at depths of 50 feet or more, such as drilled piers, driven piles, or others, could be considered. Alternatively, shallow foundations could be considered provided they are designed with a reduced bearing capacity under seismic conditions or are supported on a stabilized gravel raft. Additional discussion and recommendations for site grading, gravel raft design, and foundation design are provided in Section 7 of this report.*

6.4 Cyclic Softening and Related Impacts

Cyclic softening refers to a loss of shear strength within a sensitive, cohesive, fine-grained soil (silt and clay) as excess pore pressures are generated during a seismic event. The effects of cyclic softening can reduce the soil's undrained shear strength and result in significant loss of bearing capacity and reduction of slope stability. We performed analyses based on the procedures outlined by Idriss & Boulanger (2008) to evaluate cyclic softening potential of the thick interbeds of medium-stiff to stiff clays underlying the site. The results of our analyses are presented on Figures 28 through 32 and indicate that the risk of cyclic softening at the project site is low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.5 Seismically Induced Ground Settlement

Seismic ground shaking can induce settlement of unsaturated, loose, clean, granular soils. Settlement occurs as the loose soil particles rearrange into a denser configuration when subjected to seismic ground shaking. Varying degrees of settlement can occur throughout a deposit, resulting in differential settlement of structures founded on such deposits. Loose, granular soils were not encountered above the historic high groundwater level; therefore, the risk of seismically induced ground settlement is low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.6 Lurching and Ground Cracking

Lurching and associated ground cracking can occur during strong ground shaking. The ground cracking generally occurs along the tops of slopes where stiff soils are underlain by soft deposits, or along steep slopes or channel banks. Such conditions generally do not exist at the project site, and the risk of lurching or ground cracking is therefore low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.7 Consolidation Settlement and Ground Subsidence

Significant settlement can occur when new loads are placed at sites due to consolidation of soft compressible clays (i.e., Bay Mud) or compression of loose granular soils. As previously discussed, soft, compressible soils were not encountered during our exploration. Therefore, we judge there is a low risk of consolidation settlement and subsidence at the site.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.8 Expansive Soil

Expansive soils will shrink and swell with fluctuations in moisture content and are capable of exerting significant expansion pressures on building foundations, interior floor slabs and exterior flatwork. Distress from expansive soil movement can include cracking of brittle wall coverings (stucco, plaster, drywall, etc.), racked door and/or window frames, and uneven floors and cracked slabs. Flatwork, pavements, and concrete slabs-on-grade are particularly vulnerable to distress due to their low bearing pressures. Expansive soils at depth may also impose downdrag loads on deep foundation systems. Laboratory testing indicates that clay soils underlying the site at various depths the site are generally of moderate to high plasticity and moderate expansion potential. We judge that the risk of expansive soil affecting the proposed improvements is moderate.

Evaluation: *No significant impact with special engineering measures.*
Recommendations: *Expansive soils mitigation could be provided via subgrade lime treatment or via over-excavation and replacement with non-expensive materials, such as would occur if gravel rafts are specified in conjunction with shallow foundations. Additional discussion regarding site preparation/grading and foundation design is provided in Section 7 of this report.*

6.9 Long-Term Differential Foundation Settlement

Shallow foundations can settle differentially when the structure straddles two distinct geologic conditions. Typically, this phenomenon occurs where a structure spans across a transition from weathered bedrock to fill, or native soil or very soft soils to firm soils. No significant differential support conditions are expected to exist at the site under static conditions, and the risk of long-term differential settlement is generally low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.10 Slope Instability and Landslides

Slope instability generally occurs on relatively steep slopes and/or on slopes underlain by weak materials. The project site is relatively flat therefore, “traditional” landsliding and large-scale slope instability are not considered significant hazards at the project site.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures required.*

6.11 Erosion

Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated water runoff. The site is relatively level and almost entirely developed with buildings and hardscape with limited/no soil exposure. Therefore, the risk of erosion is judged to be low.

Evaluation: *Less than significant with mitigation.*
Recommendations: *The project Civil Engineer is typically responsible for site drainage design. Erosion control during and after construction should conform to a site-specific Stormwater Pollution Prevention Plan (SWPPP) prepared by the project Civil Engineer.*

6.12 Flooding

The project site is not mapped within a FEMA 100- or 500-year flood zone. However, as with all development sites, localized ponding/flooding is possible due to changes in the natural drainage patterns. Therefore, we judge there is a low risk of inundation by floodwaters.

Evaluation: *Less than significant with mitigation.*
Recommendations: *The project Civil Engineer should specify finished floor elevations above flood levels and provide appropriate storm drain design for the maximum credible rainfall event.*

6.13 Dam Failure Inundation

Based on our review of the Department of Water Resources, Division of Safety of Dams, Dam Breach Inundation Map Web Publisher (https://fmds.water.ca.gov/webgis/200b?appid=dam_prototype_v2, accessed 2025), the site is not located within a dam failure inundation zone. Therefore, the risk of inundation of the site from dam failure is judged to be low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.14 Seiche and Tsunami

Seiche and tsunami are short duration earthquake-generated water waves in large, enclosed bodies of water and the open ocean, respectively. The extent and severity of a seiche or tsunami would be dependent upon ground motions and fault offset from nearby active faults. The project site is not mapped by CGS within a Tsunami Inundation Zone (CalEMA and CGS, 2009), nor is the site shown within an inundation zone in the ASCE's Tsunami Design Geodatabase (https://asce7tsunami.online/, accessed 2025).

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.15 Soil Corrosion

Corrosive soil can damage buried metallic structures, cause concrete spalling, and deteriorate rebar reinforcement. Laboratory testing was performed on representative samples of the near-surface site soils to evaluate pH, electrical resistivity, chloride, and sulfate contents.

The results of our corrosivity testing are shown on Figure A-23 and indicate the upper soil layers have a pH of 7.00, a chloride concentration of 150 parts per million (ppm), and sulfate concentration of 93 ppm. Per Caltrans Corrosion Guidelines (2003) a soil is considered corrosive if the pH level is less than 5.5, the chloride concentration is greater than 500 ppm, and/or the sulfate concentration is 2,000 ppm or greater. Based on laboratory test results, we judge there is a relatively low risk of damage due to corrosive soils.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.16 Radon-222 Gas

Radon-222 is a product of the radioactive decay of uranium-238 and raduim-226, which occur naturally in a variety of rock types, mainly phosphatic shales, but also in other igneous, metamorphic, and sedimentary rocks. While low levels of radon gas are common, very high levels, which are typically caused by a combination of poor ventilation and high concentrations of uranium and radium in the underlying geologic materials, can be hazardous to human health.

The project site is located in Sonoma County, California, which is mapped in radon gas Zone 3 by the United States Environmental Protection Agency (USEPA and USGS, 1993). Zone 3 is classified by the EPA as exhibiting a "low" potential for Radon-222 gas with average predicted indoor screening levels less than 2 pCi/L. Therefore, the potential for hazardous levels of radon at the project site is low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.17 Volcanic Eruption

Several active volcanoes with the potential for future eruptions exist within northern California, including Mount Shasta, Lassen Peak, and Medicine Lake in extreme northern California, the Mono Lake-Long Valley Caldera complex in east-central California, and the Clear Lake Volcanic Field, located in Lake County approximately 36-miles north of the project site. The most recent volcanic eruption in northern California was at Lassen Peak in 1917, while the most recent eruption at the nearest volcanic center to the project site, the Clear Lake Volcanic Field, was about 10,000 years ago. All of northern California's volcanic centers are currently listed under "normal" volcanic alert levels by the USGS California Volcano Observatory (https://www.usgs.gov/programs/VHP/volcano-updates#calvo, accessed 2025). While the aforementioned volcanic centers are considered "active" by the USGS, the likelihood of damage to the proposed improvements due to volcanic eruption is generally low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.18 Naturally Occurring Asbestos (NOA)

Naturally occurring asbestos is commonly found in association with serpentinite and associated ultramafic rock types. These rocks are a major constituent of the Franciscan Complex, which underlies vast portions of the greater San Francisco Bay Area. The site is underlain by relatively thick native alluvial soils, and while it lies in a region dominated in part by Franciscan Complex bedrock, no evidence suggesting the presence of serpentinite or related rock types was observed during our exploration. Therefore, the likelihood that significant deposits of naturally occurring asbestos will be encountered at the site is low.

Evaluation: *No significant impact.*
Recommendations: *No special engineering measures are required.*

6.19 Hazardous Materials

Hazardous materials were not observed during our subsurface exploration. While environmental testing for hazardous materials was beyond the scope of our services, we assume that HVAC units and other industrial equipment that has the potential for creating hazardous materials are present on the site. Therefore, we judge the potential for hazardous materials to exist at the project site, currently or in the future, is moderate.

Evaluation: *Less than significant with mitigation.*
Recommendations: *The campus should comply with all local, state, and federal guidelines to minimize the exposure to hazardous materials. If a possible hazardous material spill occurs on campus, a qualified environmental specialist should be consulted.*

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our exploration, testing, and analysis, we judge that the project is feasible from a geotechnical standpoint. The primary geotechnical issues to be considered during project development and design include providing appropriate seismic design, providing adequate mitigation for liquefaction, loss or bearing capacity, and associated settlements. Geotechnical recommendations and development guidelines to address these and other issues are discussed in more detail below.

7.1 Seismic Design

The project site is located in a seismically active area. Therefore, structures should be designed in conformance with the seismic provisions of the California Building Code (CBC, 2022) and ASCE 7-16 to mitigate the potential effects of strong seismic ground shaking to the proposed improvements. The goal of the building code is protection of life safety, some structural damage may still occur during strong ground shaking.

Based our subsurface exploration and calculated Vs_{30} value of 845 ft/sec, it is our opinion the project site may be classified as a stiff soil site or "Site Class D". Per ASCE 7-16 a Site-Specific Ground Motion Hazard Analysis shall be performed in accordance with ASCE 7-16 Section 21.2 on sites classified as "Site Class D" if the S_1 value is greater than or equal to 0.2 g. The S_1 value for the site conditions and location is 0.85 g; therefore, we performed a Site-Specific Ground Motion Hazard Analysis as described in Appendix D, the results of which are summarized in Table C below.

Table C: ASCE 7-16 Seismic Design Parameters

Factor Name	*Coefficient*	*ASCE 7-16 Site Specific Value*
Site Class[1]	$S_{A,B,C,D,E, or F}$	S_D
Spectral Acc. (short)	S_S	2.20 g
Spectral Acc. (1-sec)	S_1	0.85 g
Spectral Response (short)	S_{MS}	2.30 g
Spectral Response (1-sec)	S_{M1}	2.57 g
Design Spectral Response (short)	S_{DS}	1.53 g
Design Spectral Response (1-sec)	S_{D1}	1.71 g
MCE_G[2] PGA adjusted for Site Class	PGA_M	1.02 g

Notes:

1. *Site Class D Description: Stiff soil profile with shear wave velocities between 600 ft/sec (180 m/s) and 1,200 ft/sec (365 m/s), standard blow counts between 15 and 50 blows per foot, and undrained shear strengths between than 1,000 psf and 2,000 psf.*
2. *Maximum Considered Earthquake Geometric Mean.*

We note that, per ASCE 7-16 Supplement 3, Ground Motion Hazard Analysis is not required if the S_{M1} and S_{D1} values have been increased by 50%. If the project Structural Engineer elects to utilize this exception, then the values shown in Table D below should be used for project seismic design.

Table D: ASCE 7-16 Seismic Design Parameters (Supplement 3)

Factor Name	*Coefficient*	*ASCE 7-16 Site Specific Value*
Site Class[1]	$S_{A,B,C,D,E, or F}$	S_D
Spectral Acc. (short)	S_S	2.20 g
Spectral Acc. (1-sec)	S_1	0.85 g
Spectral Response (short)	S_{MS}	2.20 g
Spectral Response (1-sec)	S_{M1}	1.45 g
Spectral Response (1-sec) +50%	S_{M1}	2.17 g
Design Spectral Response (short)	S_{DS}	1.47 g
Design Spectral Response (1-sec)	S_{D1}	0.97 g
Design Spectral Response (1-sec) +50%	S_{D1}	1.45 g

Note:

1. *Site Class D Description: Stiff soil profile with shear wave velocities between 600 ft/sec (180 m/s) and 1,200 ft/sec (365 m/s), standard blow counts between 15 and 50 blows per foot, and undrained shear strengths between than 1,000 psf and 2,000 psf.*

7.2 Site Preparation and Grading

The general grading recommendations presented below are appropriate for construction in the late spring through fall months. From winter through the early spring months, on-site soils may be saturated due to rainfall and may be difficult to compact without drying by aeration or the addition of lime and/or cement (or a similar product) to dry the soils. Site preparation and grading should conform to the recommendations and criteria outlined below. General recommendations for wintertime construction are provided later in this report.

7.2.1 Site Preparation

Clear pavements, foundations, over-sized debris, and organic material from areas to be graded. Excavated areas (i.e., excavations for foundation removal) should be restored with properly moisture conditioned and compacted fill as described in the following sections. Any loose soil or rock at subgrade will need to be excavated to expose firm natural soils or bedrock. Debris, rocks larger than six inches and vegetation are not suitable for structural fill and should be removed from the site. Alternatively, vegetation strippings may be used in landscape areas.

Where fills or other structural improvements are planned on level ground, the subgrade surface should be scarified to a depth of about eight inches, moisture conditioned to near the optimum moisture content, and compacted to a minimum of 90% relative compaction (ASTM D-1557) and should be increased to a minimum of 95% where new asphalt pavements are planned. Relative compaction refers to the ratio, in percent, of the in-situ

dry density to the maximum laboratory density of the soil. If soft, wet, or otherwise unsuitable materials are encountered at the subgrade elevation during construction, we will provide supplemental recommendations/field directives to address the specific condition.

7.2.2 Expansive Soils

As previously discussed, the project site is underlain by surficial clay soils with moderate expansive potential. Expansive soils mitigation could include subgrade lime treatment or excavation and replacement with non-expansive materials. If and where mitigation via lime treatment or removal/replacement is not planned, we recommend that expansive soils be moisture conditioned to at least 3% over the optimum moisture content and compacted to between 88% and 92% relative compaction.

7.2.3 Materials

Based on our laboratory testing, onsite fill soils may be suitable for use as fill. On-site and, if required, imported fill shall consist of soil and rock mixtures that: (1) are free of organic material, (2) have a Liquid Limit less than 40 and a Plasticity Index of less than 20, (3) consist of at least 50% material retained on the #200 sieve, and (4) have a maximum particle size of 6-inches. Any imported fill material needs to be tested to determine its suitability for use as fill material.

7.2.4 Excavations

The subsurface conditions will likely consist of granular alluvial deposits. We anticipate the soil may be excavated with standard equipment (i.e., excavators, dozers, scrapers, etc.) and should be considered Cal OSHA Type C. Excavations having a depth of five feet or more, and will be entered by workers must be sloped, braced, or shored in accordance with current Cal/OSHA regulations. All excavations can result in collapse of sidewalls, slopes and/or bottom that could result in injury or death of workers. Therefore, excavations should be evaluated by the Contractor's safety officer and designated competent person prior to workers entering in accordance with current Cal/OSHA regulations.

7.3 Shallow Foundation Design

We judge that shallow foundations are generally appropriate for the new office building and solar canopy structures provided that they are designed to withstand the predicted total and differential settlements. Because of the potential for loss of bearing capacity in the event of soil liquefaction, the foundations should be designed with a reduced bearing capacity under seismic conditions. Shallow foundations may also be appropriate for the warehouse, although we generally recommend that new foundations be of similar type and bear on similar strata as the existing foundations to encourage more uniform future performance.

If designing foundations to lower seismic bearing capacities is not desirable, then the underlying soils may be improved by constructing a stabilized gravel raft under the proposed foundations. A stabilized gravel raft is constructed by over-excavating below the bottom of the foundation elevation. The over-excavation is then backfilled with compacted Caltrans Class 2 aggregate baserock with rigid geogrids installed on 1-foot vertical intervals (i.e., Tensar InterAX or approved equivalent). The foundation dimensions and the depth of the gravel raft will determine the allowable bearing capacity.

A stabilized gravel raft will reduce the predicted post liquefaction settlements to less than 2.0 inches total settlement and less than 1 inch differential settlement, over a 30-foot span, it would also prevent a loss of significant bearing capacity in the event of soil liquefaction and increase the static bearing capacity, potentially reducing the size of the foundation system. In addition to providing mitigation for loss of bearing capacity, the over-excavation and replacement with aggregate baserock will also provide effective mitigation for expansive subgrade soils.

We used Tensar's online design tool (https://www.tensarplus.com/software/foundation/lqf/) and determined that allowable static and seismic bearing capacities of 4,500 psf and 2,500 psf (factor of safety = 3.0) may be realized provided that the foundations bear on a 3.0-thick stabilized gravel raft. Calculation outputs and schematic details for reinforced gravel raft , considering both static and seismic conditions, are provided on Figures 33 and 34, respectively. If selected as the "preferred" foundation option, we recommend that shallow foundations be designed using the preliminary values summarized in Table D. As project design advances, we should be consulted to refine these criteria based on the actual foundation dimensions and loading.

Table D: Shallow Foundation Design Criteria

Minimum embedment below existing grade:	18 inches
Minimum width[1]:	
One-story:	12 inches
Two-stories:	15 inches
Allowable bearing capacity	
Static:	2,000 psf
Seismic:	750 psf
Base friction coefficient:	0.30
Lateral passive resistance[2]:	200 pcf
Allowable stabilized gravel raft bearing capacity	
Static:	4,500 psf
Seismic:	2,500 psf
Base friction coefficient:	0.40
Lateral passive resistance[2]:	300 pcf

Notes:

1. *Design shallow foundations to similar bearing pressures, i.e., size footing widths to maintain uniform bearing loads*
2. *Neglect upper 6-inches unless confined by concrete. Equivalent Fluid Pressure, not to exceed ten times the lateral passive resistance value in psf.*

7.4 Deep Foundation Design

There are several alternative deep foundation systems which may be considered to support the new structures, including “traditional” cast in drilled hole (CIDH) piers, auger-cast concrete piers (ACP), driven concrete or steel piles, helical piles and “torque-down” piles (TDP). While each system should provide comparable performance and liquefaction mitigation, ACPs, driven piles and TDPs all require specialized equipment which, from our experience, may be cost prohibitive for a project of this size and scope. “Traditional” drilled piers may be challenging to construct given the potential for shallow groundwater and loose, caving soils. Helical piles could be a relatively simple and cost-effective alternative, as they can be installed with relatively common equipment and do not require the drilling of open shafts of off-haul of excavated material. If a deep foundation system is preferred, we should perform further lateral analysis and develop specific recommendations based on anticipated structural loads.

Based on our experience with solar array projects we anticipate drilled piers, based on a DSA Pre-Check (PC) calculation package and plan set, are most often utilized to support the solar canopies. However, per Section 5.9 of DSA IR PC-7 (2024), PC designs will not be approved "on sites with liquefiable soil and/or categorized as Site Class F". Although liquefiable soils were identified during our subsurface exploration, total predicted settlements are on the order of 0.3 inches or less. Therefore, we judge cast-in-drilled-hole (CIDH) concrete piers may be suitable to support the planned solar canopy structures provided the structures themselves are suitably rigid as to accommodate differential settlements up to 0.3 inches. We anticipate that appropriately selected DSA PC plans and calculations may be utilized for design. The Structural Engineer should utilize the design criteria on Table E below to design the reinforced concrete CIDH piers for the solar canopy structure. The values provided in Table E were determined utilizing the procedures outlined by Reese & O'Neill (1988).

Table E: CIDH Foundation Design Criteria

Minimum diameter:	18 inches
Minimum Depth	10 feet
Allowable skin friction[1,2]:	500 psf
Lateral passive resistance[3,4,5]:	250 pcf

Notes:

1. *Calculated utilizing the procedures outlined by Reese & O'Neil 1988 and FS = 2.0.*
2. *Uplift capacity is equal to 80% of the skin friction resistance.*
3. *Neglect the upper 3-feet unless the ground surface is covered with asphalt flatwork or concrete pavement.*
4. *Equivalent Fluid Pressure, not to exceed 10 times the lateral passive resistance in psf.*
5. *Apply over 1.5-pier diameters.*

7.5 Site and Foundation Drainage

The site is relatively flat and there is a possibility that new grading could result in adverse drainage patterns and water ponding around buildings. Careful consideration should therefore be given to design of finished grades at the site. We recommend that landscaped areas adjoining new structures be sloped downward at least 0.25 feet for 5 feet (5%) from the perimeter of building foundations. Where hard surfaces, such as concrete or asphalt adjoin foundations, slope these surfaces at least 0.10 feet in the first 5 feet (2%). Roof gutter downspouts may discharge onto the pavements but should not discharge onto any landscaped areas. Provide area drains for landscape planters adjacent to buildings and parking areas and collect downspout discharges into a tight pipe collection system. Site drainage improvements should be connected into the existing campus storm drainage system.

7.6 Concrete Slabs-On-Grade

We generally recommend that interior concrete slabs have a minimum thickness of 5-inches and be reinforced with steel reinforcing bars (not mesh). Slabs should be placed on a moist subgrade as previously described above. To reduce (i.e., improve) interior moisture conditions, a minimum of four inches of clean, free draining, ¾-inch angular gravel should be placed beneath interior concrete slabs to form a capillary moisture break. The drain rock must be placed on a properly moisture conditioned and compacted subgrade that has been approved by the Geotechnical Engineer. A 15-mil, or thicker, vapor barrier should be placed over the compacted drain rock. The vapor barrier shall meet the ASTM E 1745 Class A requirements and be installed per ASTM E 1643. Eliminating the capillary moisture break and/or plastic visqueen may result in excess moisture intrusion through the floor slabs resulting in poor performance of floor coverings, mold growth, or other adverse conditions.

The industry standard approach to floor slab moisture control, as discussed above, does not assure that floor slab moisture transmission rates will meet the building use requirements or that indoor humidity levels will be low enough to inhibit mold growth. Building design, construction, and intended use have a significant role in moisture problems and should be carefully evaluated by the owner, designer, and builder in order to meet the project requirements.

Exterior concrete slabs should be at least 5-inches thick and reinforced with steel bars (not wire mesh). Additionally, contraction joints should be incorporated in the concrete slab in both directions, no greater than 10 feet on center and the reinforcing bars should extend through these control joints. For improved performance, exterior concrete slabs may be underlain with at least 4-inches of Caltrans Class 2 Aggregate Base compacted to at least 92% relative compaction.

7.7 Asphalt Pavement

Typically, asphalt pavement sections are designed utilizing two variables, the R-Value (a measure of the subgrade resistance) and the Traffic Index (a measure of the amount of daily traffic). Based on the subsurface conditions we judge an R-Value of 5 is appropriate for the site. The project Civil Engineer should select an appropriate Traffic Index for asphalt-paved areas based on expected traffic loading and truck traffic, or the existing section could be “matched”. Based on this assumed R-value, we calculated pavement sections for a range of Traffic Indexes in accordance with Caltrans procedures for flexible pavement design (2006). The results of our analyses are presented on Table F.

Table F: Asphalt Pavement Design

Traffic Index	*Asphalt Concrete*	*Aggregate Baserock*
4.0	2.5 inches	8.0 inches
5.0	3.0 inches	10.0 inches
6.0	3.5 inches	13.0 inches

Note:

1. *To reduce the section thickness,1 inch of asphalt may be substituted for 2 inches of aggregate baserock.*

Preparation of the existing subgrade soils should be performed per the recommendations in Section 7.2, including removal of existing vegetation, scarifying to a depth of about eight inches, moisture conditioning to above optimum, and compacting the finished subgrade to at least 95% relative compaction (ASTM D1557). The base rock should consist of Class 2 Aggregate Base (Caltrans, 2016), compacted to at least 95 percent relative compaction. Asphalt concrete should be placed to conform to the 2016 Caltrans Standard Specifications.

7.8 Utility Trench Excavations and Backfills

Excavations for utilities will most likely extend into medium dense to dense granular soils. Trench excavations having a depth of five feet or more that will be entered by workers must be sloped, braced, or shored in accordance with current Cal/OSHA regulations. On-site soils appear to be Type C. All excavations where collapse of excavation sidewall, slope or bottom could result in injury or death of workers, should be evaluated by the contractor's safety officer and designated competent person prior to entering in accordance with current Cal/OSHA regulations.

Bedding materials for utility pipes should be well graded sand with 90 to 100% of particles passing the No. 4 sieve and no more than 5% finer than the No. 200 sieve. Provide the minimum bedding beneath the pipe in accordance with the manufacturer's recommendation, typically 3 to 6 inches. Trench backfill may consist of on-site soils, moisture conditioned to within 2% of the optimum moisture content, placed in thin lifts and compacted to a minimum of 90% relative compaction. Backfill for trenches within pavement areas should consist of non-expansive granular fill. Use equipment and methods that are suitable for work in confined areas without damaging utility conduits. Where utility lines cross under or through perimeter footings, they should be sealed to reduce moisture intrusion into the areas under the slabs and/or footings.

7.9 Wintertime Construction

Wintertime/wet weather site work is feasible during the construction phase of this project, provided that weather conditions do not adversely impact the planned grading and proper erosion control measures are implemented to prevent excessive silt and mud from entering the storm drain system. High soil moisture contents and muddy site conditions may impact placing fills, compacting subgrades, and excavating foundation trenches. Several alternatives may be considered to improve the site conditions to allow site work to proceed in rainy conditions:

- Prior to the onset of winter rains, maintain a drier site by covering the work area and any stockpiled materials with plastic visqueen sheeting or other impermeable membrane. Where asphalt pavements, other hardscape or drainage improvements currently exist in work areas, consider leaving these improvements in place until the last possible moment to maintain a drier subgrade condition.

- Cement treat the subgrade soils when site work commences to "weatherproof" the site. The disadvantage to this alternative is that future landscaping will likely require excavation and replacement of the treated soils for acceptable plant growth.

- Finally, imported, drier fill materials could be used to stabilize the site. Soft or wet on-site materials could be excavated to firm materials and drier (preferably granular) soils with good drainage characteristics would be imported to restore site grades. This alternative might also require future excavation and replacement of landscaping soils.

If construction occurs relatively early in the winter, we judge the first option (covering the site prior to winter rains) could be an effective method of maintaining a workable site. When the construction schedule and weather conditions are known, we can meet with the project team to further discuss alternatives to continuing wintertime construction.

8.0 SUPPLEMENTAL GEOTECHNICAL SERVICES

We should review the plans and specifications for the structures when they are nearing completion to confirm that the intent of our geotechnical recommendations has been incorporated and to provide supplemental recommendations, if needed. During construction, we must observe the site preparation, grading, and foundation preparation to confirm that the subsurface conditions are as expected and to adjust foundation depths, if required. We also must test compaction of new fill, backfill, pavement subgrade and aggregate baserock.

9.0 LIMITATIONS

We believe this report has been prepared in accordance with generally accepted geotechnical engineering practices in the San Francisco Bay Area at the time the report was prepared. This report has been prepared for the exclusive use of Santa Rosa City Schools and/or their assignees specifically for this project. No other warranty, expressed or implied, is made. Our evaluations and recommendations are based on the data obtained during our subsurface exploration program and our experience with soils in this geographic area.

Our approved scope of work did not include an environmental assessment of the site. Consequently, this report does not contain information regarding the presence or absence of toxic or hazardous wastes.

The evaluations and recommendations do not reflect variations in subsurface conditions that may exist between boring locations or in unexplored portions of the site. Should such variations become apparent during construction, the general recommendations contained within this report will not be considered valid unless MPEG is given the opportunity to review such variations and revise or modify our recommendations accordingly. No changes may be made to the general recommendations contained herein without the written consent of MPEG.

We recommend that this report, in its entirety, be made available to project team members, contractors, and subcontractors for informational purposes and discussion. We intend that the information presented within this report be interpreted only within the context of the report as a whole. No portion of this report should be separated from the rest of the information presented herein. No single portion of this report shall be considered valid unless it is presented with and as an integral part of the entire report.

10.0 LIST OF REFERENCES

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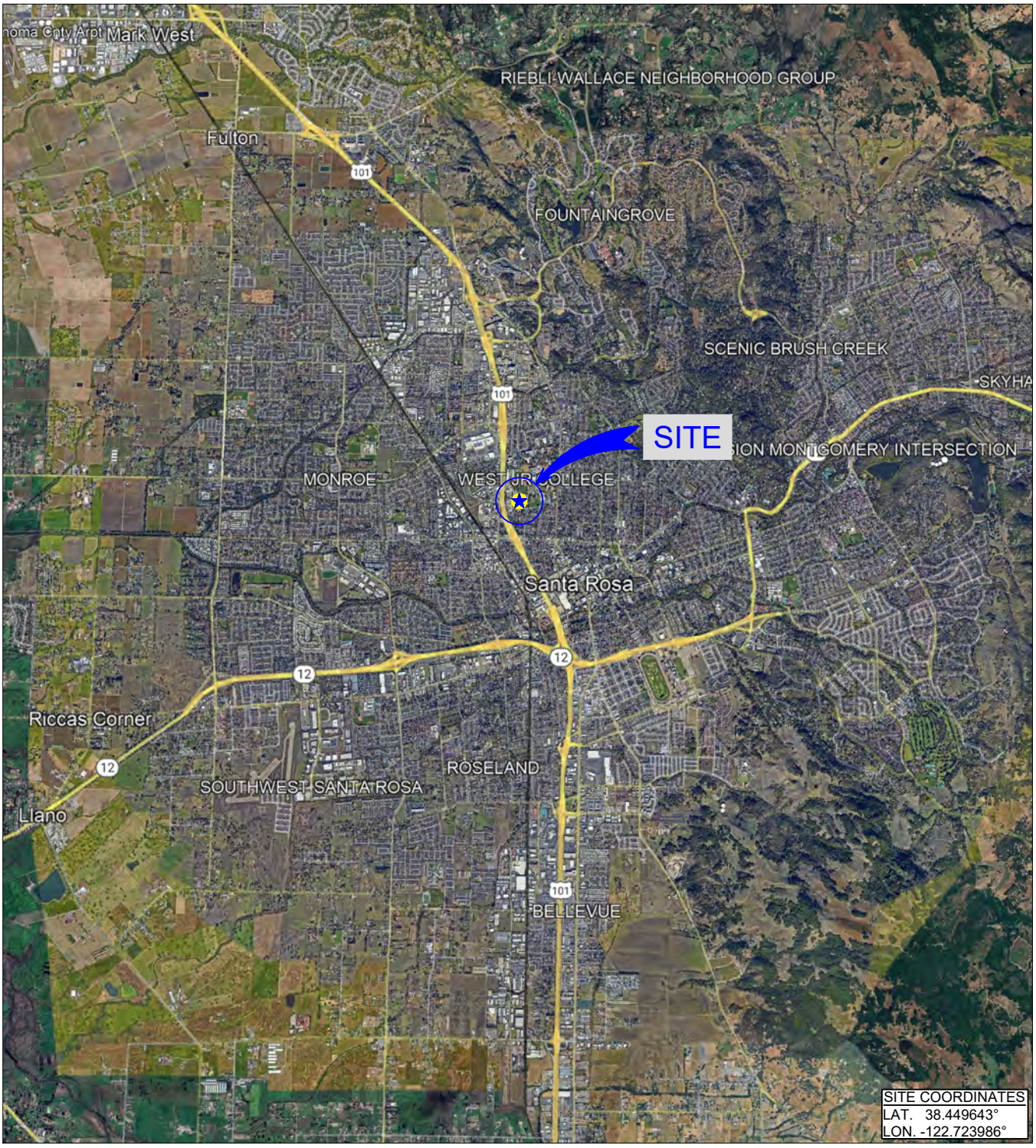
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REFERENCE: Google Earth, 2025

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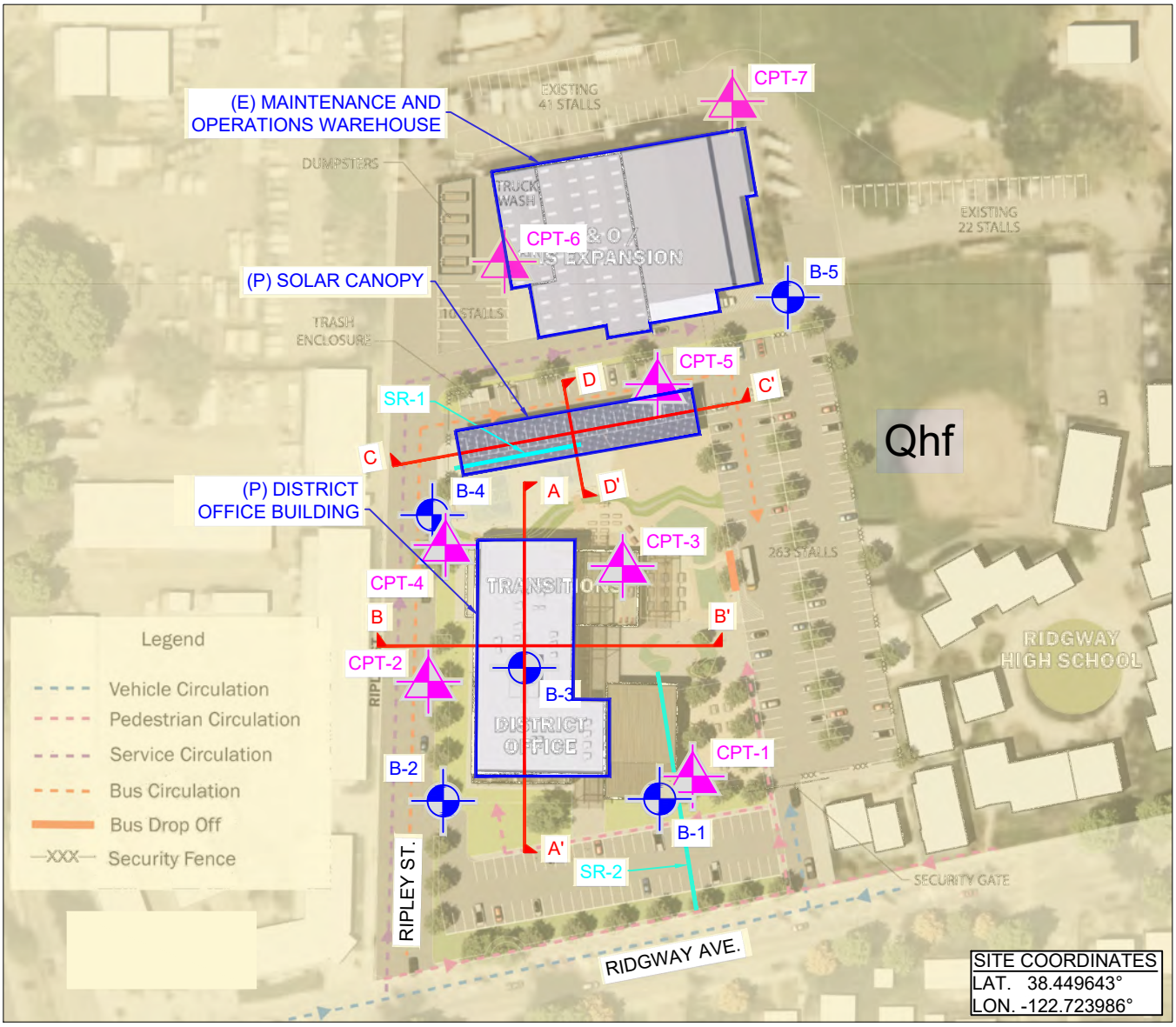
SITE LOCATION MAP

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

1
FIGURE



SCALE

0 75 150 300 FEET

N

Approximate location of boring completed by MPEG, 2025

Approximate location of CPT completed by MPEG, 2025

Simplified geologic cross sections, see Figure 6

Approximate location of seismic refraction line, see Appendix C

Geologic Legend:

Qhf **Alluvial fan deposits** - Gravel, sand, silt, and clay

REFERENCE: Arntz Builders, Inc. & PBK Architects, "Santa Rosa City Schools, District Office & Education Center Design Build", 2/13/25.

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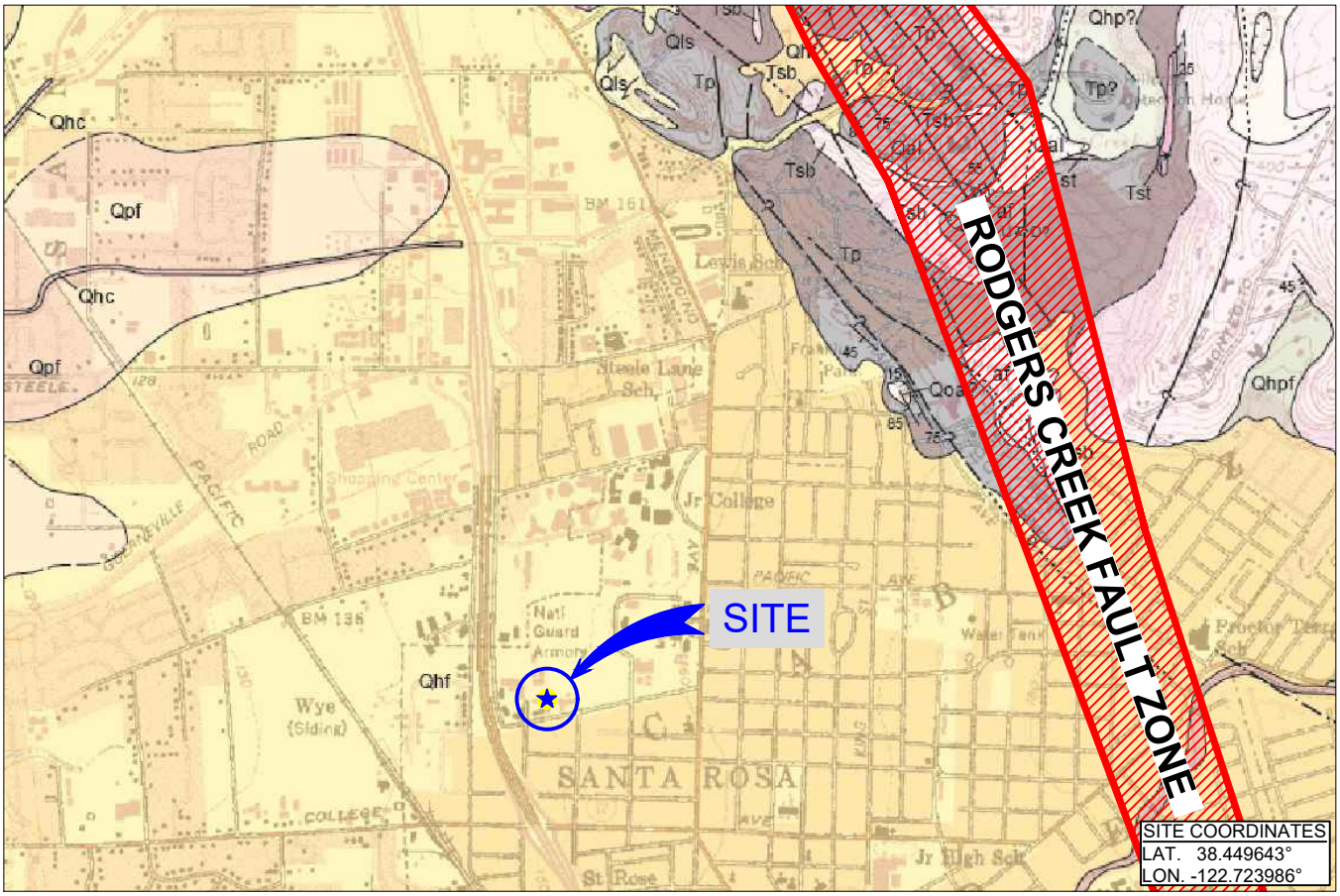
SITE PLAN AND GEOLOGIC MAP

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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Checked

2
FIGURE



REGIONAL GEOLOGIC MAP

N

(N.T.S)

LEGEND

Qhc — CHANNELS (HOLOCENE) - Incise older deposits.

Qhf — ALLUVIAL FAN AND FLUVIAL TERRACE DEPOSITS, UNDIVIDED (HOLOCENE)
Gravel, sand and silt, derived primarily from Pleistocene and older sedimentary and igneous units.

Qpf — ALLUVIAL FAN AND FLUVIAL TERRACE DEPOSITS, UNDIVIDED (PLEISTOCENE)
Gravel, sand and silt, characterized by unsorted character, a relict fan-like morphology.

Tp — PETALUMA FORMATION - Dominantly sandy to silty gravel, silty sandstone, siltstone, and mudstone.

\- CONTACT - Dashed where approximately located; dotted where concealed; queried where uncertain.

\- FAULT - Dashed where approximately located or inferred; dotted where concealed; queried where uncertain

\- LIMITS OF ALQUIST-PRIOLO EARTHQUAKE FAULT ZONE

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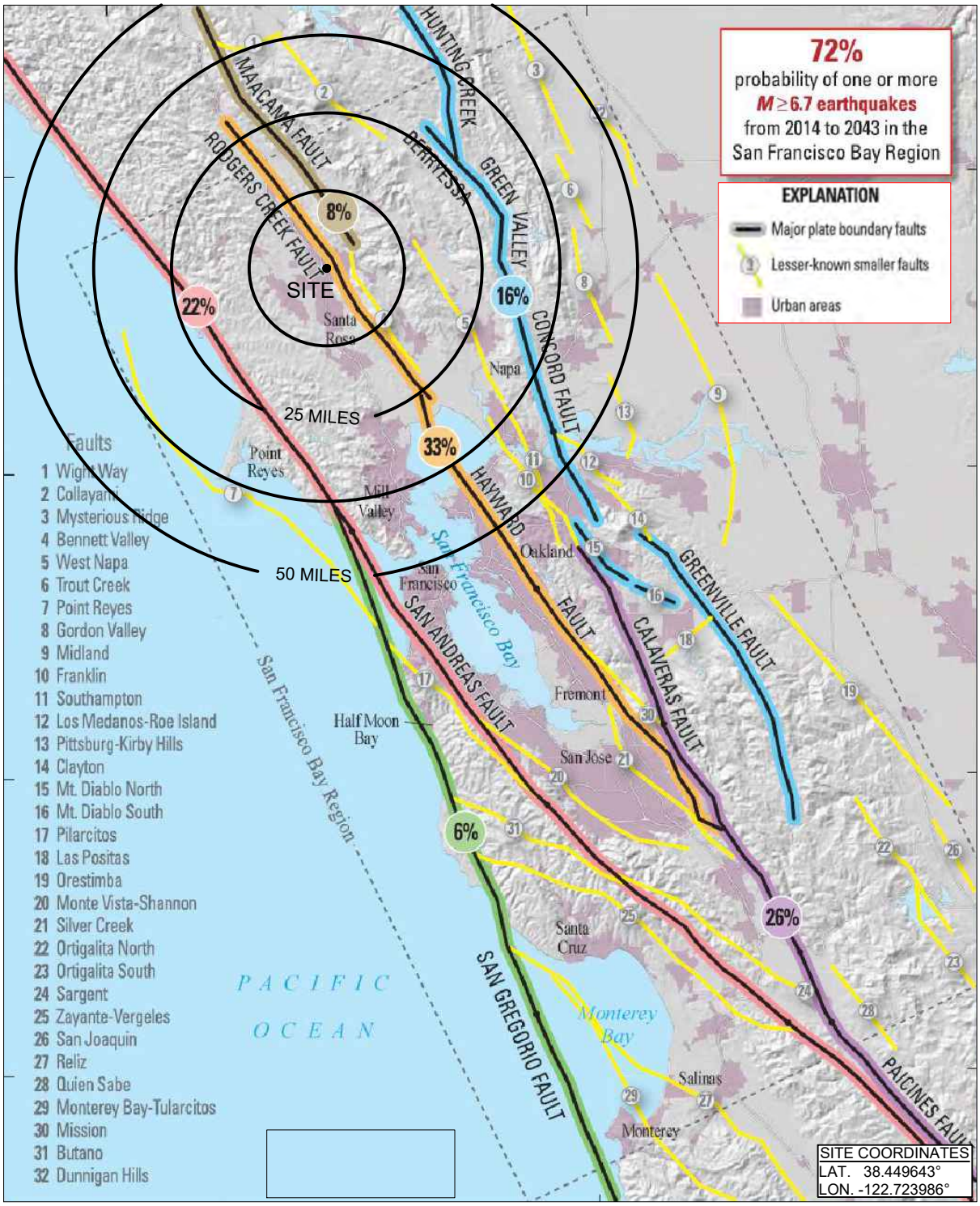
REGIONAL GEOLOGIC MAP

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

3
FIGURE



REFERENCE: U.S. Geological Survey, U.S. Department of the Interior, "Earthquake Outlook for the San Francisco Bay Region 2014-2043", Map of Known Active Faults in the San Francisco Bay Region, Fact Sheet 2016-3020, Revised August 2016 (ver. 1.1).

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ACTIVE FAULT MAP

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District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

4
FIGURE



REFERENCE: 1) U.S. Geological Survey, U.S. Department of the Interior, "Earthquake Outlook for the San Francisco Bay Region 2014-2043", Map of Known Active Faults in the San Francisco Bay Region, Fact Sheet 2016-3020, Revised August 2016 (ver. 1.1).
2) U.S. Geological Survey, Earthquake Catalog Search, https://earthquake.usgs.gov/earthquakes/search/. Earthquakes between 1830 and 2025.

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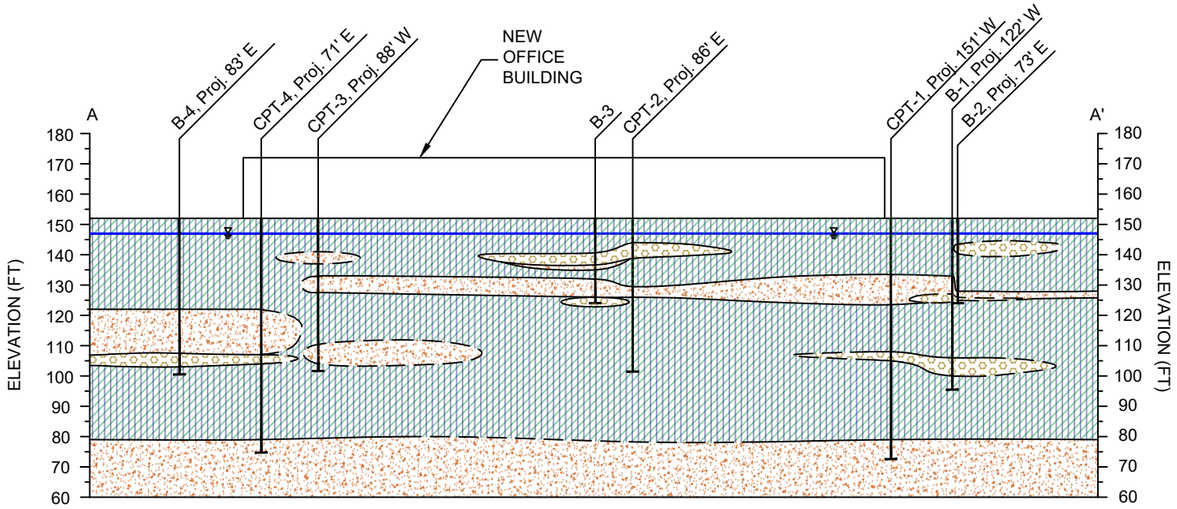
HISTORIC EARTHQUAKE MAP

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Santa Rosa, California

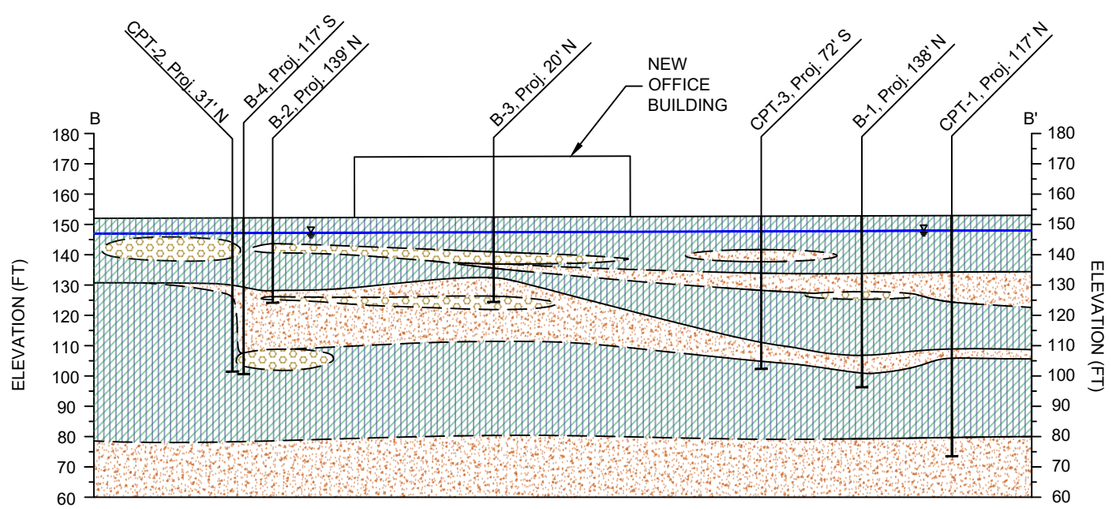
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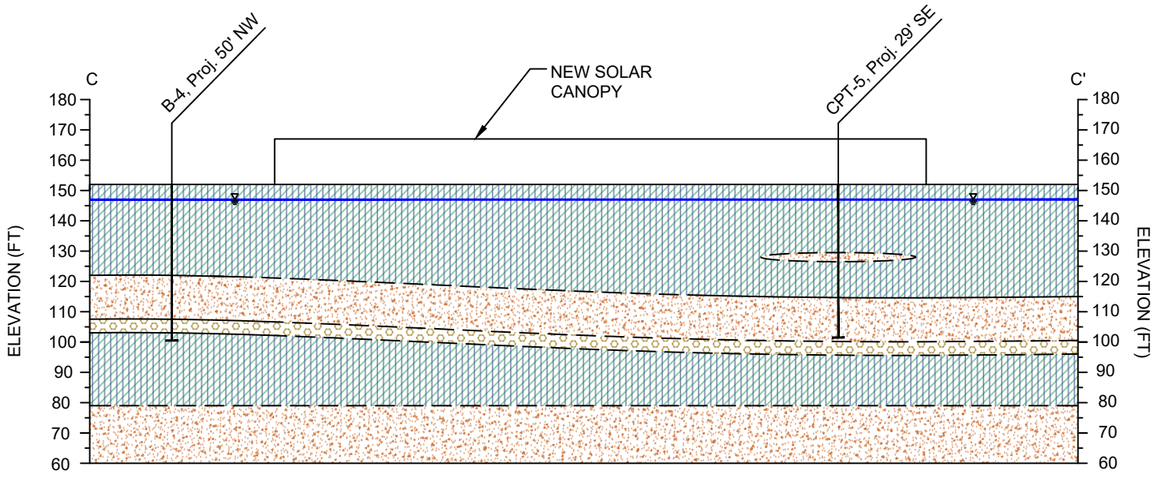
5
FIGURE



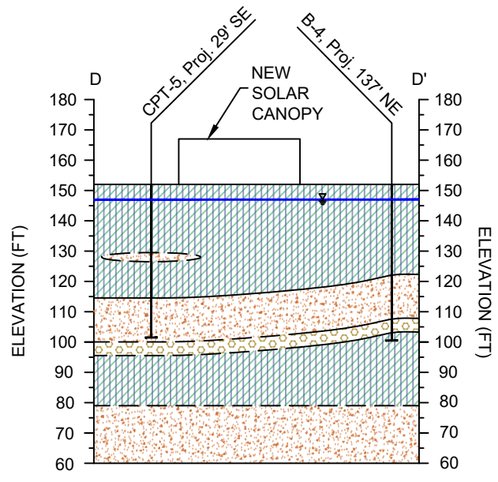
SECTION A to A'



SECTION B to B'



SECTION C to C'



SECTION D to D'

LEGEND

- CLAY (CL/CH) / SILT (ML)
- SAND (SC/SM)
- GRAVEL (GC/GW)
- SOIL CONTACT, DASHED WHERE INFERRED
- ASSUMED HIGHEST HISTORICAL GROUNDWATER

SCALE

0 25 50 100 FEET

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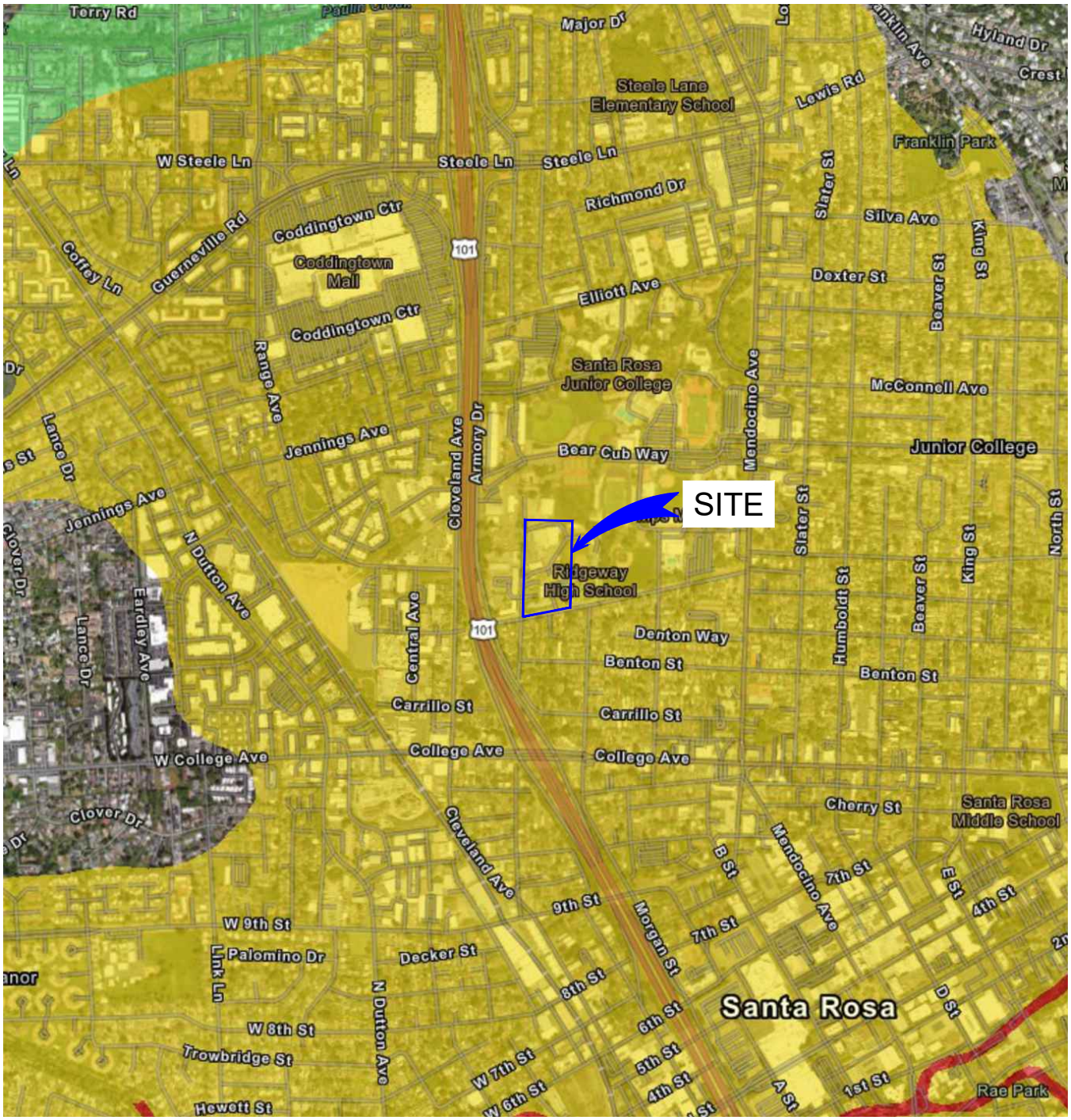
SIMPLIFIED GEOLOGIC CROSS SECTIONS

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Designed
Drawn CMS
Checked

6
FIGURE



LEGEND

Very Low	Moderate	Very High
Low	High	

N

(N.T.S)

REFERENCE: USGS, 2006. "Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California." Open File Report 2006-1037. Updated for ESRI ArcGIS Digital Database 2018. Accessed 2025.

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LIQUEFACTION SUSCEPTIBILITY MAP

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

7
FIGURE

Project: SRCS - District Office
Job No: 1079.122

Analyzed by: BSP
Date: 11/6/2025

Soil & Seismic Properties

Magnitude, M_w: 7.6
PGA, g: 1.02
GW Depth, ft: 5.0

Layer	UCS Type	γ_d, pcf	ω%	Depth, ft Upper	Depth, ft Lower	γ_t, pcf	Thickness, ft
1	CL	100	25%	0	19	125	19
2	SC/GC	130	10%	19	27	143	8
3	CL	100	30%	27	46	130	19
4	SM	100	25%	46	52	125	6

Cyclic Resistance Ratio (CRR)

MC to SPT: 0.6
Borehole Dia: 6.0
Hammer Eff: 0.8

Sample	Depth, ft	N_{FIELD}, bpf	Fines Cont., %	Sampler Type	Liner Correction	UCS Type	σ, psf	σ', psf	Sampler Corr.	$N_{COR.}$, bpf
B1	20.0	35	36	SPT	NO	SC/GC	2518	1582	1.0	35.0
B1	25.0	63	16	MC	NO	SC/GC	3233	1985	0.6	37.8
B1	50.0	22	34	SPT	NO	SM	6489	3681	1.0	22.0

Sample	Depth (ft)	C_E	C_B	C_R	C_S	C_N	N_{60}, bpf	$(N_1)_{60}$, bpf	$\Delta(N_1)_{60}$, bpf	$(N_1)_{60CS}$, bpf	$CRR_{M=7.5,\sigma'=1}$
B1	20.0	1.33	1.05	0.95	1.00	1.05	**46.7**	**49.0**	**5.5**	**55**	**2.53E+04**
B1	25.0	1.33	1.05	0.95	1.00	1.00	**50.4**	**50.4**	**3.6**	**54**	**1.48E+04**
B1	50.0	1.33	1.05	1.00	1.00	0.80	**29.3**	**24.7**	**5.5**	**30**	**0.50**

Cyclic Stress Ratio Induced by Earthquake (CSR)

Sample	Depth, ft	σ, psf	σ', psf	r_d	C_σ	K_σ	MSF_{MAX}	MSF	$CSR_{M,\sigma'}$	$CSR_{M=7.5,\sigma'=1}$	F.S.
B1	20	2518	1582	0.95	0.30	1.07	2.20	0.97	**1.00**	**0.96**	**3.00+**
B1	25	3233	1985	0.93	0.30	1.00	2.20	0.97	**1.01**	**1.03**	**3.00+**
B1	50	6489	3681	0.83	0.20	0.88	2.01	0.97	**0.97**	**1.14**	**0.44**

Post Liquefaction Settlement Analysis

Sample	Depth, ft	$(N_1)_{60CS}$, bpf	F.S.	γ_{LIM}	F_α	γ_{MAX}	ε_v	Thickness, ft	Settlement, in
B1	20	55	3.00+	0.00	-1.96	0.00	**0.0%**	5.0	**0.0**
B1	25	54	3.00+	0.00	-1.91	0.00	**0.0%**	3.0	**0.0**
B1	50	30	0.44	0.05	-0.10	0.05	**0.9%**	6.0	**0.6**

Liquefaction Potential Index (LPI)

Boring	Depth (ft)	Depth (m)	F.S.	Fi	Thickness (ft)	Thickness (m)	w(i)	LPI(i)	LPI
B1	20	6.10	3.00+	0.00	5.0	1.52	6.95	**0.0**	
B1	25	7.62	3.00+	0.00	3.0	0.91	6.19	**0.0**	**2.5**
B1	50	15.24	0.44	0.56	6.0	1.83	2.38	**2.5**	

Liquefaction Severity asa function of Liquefaction Potential Index (LPI)

Severity	Little to none	Minor	Moderate	Major
LPI	LPI = 0	0 < LPI < 5	5 < LPI < 15	15 < LPI

Liquefaction damage appears typically when LPI > 5

Soil Liquefaction During Earthquakes, Idriss, I.M. & Boulanger, R.W., Earthquake Engineering Research Institute, MNO-12, 2008
SPT-Based Liquefaction Triggering Procedures, Idriss, I.M. & Boulanger, R.W., UC Davis, UCD/CGM-10/02, 2010
CPT and SPT Based Liquefaction Triggering Procedures, Boulanger, R.W. & Idriss, I.M., UC Davis, UCD/CGM-14/01, 2014
Dixit, Dewaikar, & Jangid 2012 and Ozocak & Sert 2010

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SPT LIQUEFACTION ANALYSIS - BORING 1

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
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8
FIGURE

Project: SRCS - District Office
Job No: 1079.122

Analyzed by: BSP
Date: 11/6/2025

Soil & Seismic Properties

Magnitude, M_w: 7.6
PGA, g: 1.02
GW Depth, ft: 5.0

Layer	UCS Type	γ_d, pcf	ω%	Depth, ft Upper	Depth, ft Lower	γ_t, pcf	Thickness, ft
1	CL	105	15%	0	9	121	9
2	GW	120	10%	9	12	132	3
3	CL/CH	100	30%	12	24	130	12
4	GW-GC	125	15%	24	27	144	3

Cyclic Resistance Ratio (CRR)

MC to SPT: 0.6
Borehole Dia: 6.0
Hammer Eff: 0.8

Sample	Depth, ft	N_{FIELD}, bpf	Fines Cont., %	Sampler Type	Liner Correction	UCS Type	σ, psf	σ', psf	Sampler Corr.	N_{COR}, bpf
B2	10.0	29	5	MC	NO	GW	1219	907	0.6	17.4
B2	25.0	12	12	MC	NO	GW-GC	3187	1939	0.6	7.2

Sample	Depth (ft)	C_E	C_B	C_R	C_S	C_N	N_{60}, bpf	$(N_1)_{60}$, bpf	$\Delta(N_1)_{60}$, bpf	$(N_1)_{60CS}$, bpf	$CRR_{M=7.5,\sigma'=1}$
B2	10.0	1.33	1.05	0.80	1.00	1.36	**23.2**	**26.5**	**0.0**	**27**	**0.33**
B2	25.0	1.33	1.05	0.95	1.00	1.02	**9.6**	**9.7**	**2.1**	**12**	**0.13**

Cyclic Stress Ratio Induced by Earthquake (CSR)

Sample	Depth, ft	σ, psf	σ', psf	r_d	C_σ	K_σ	MSF_{MAX}	MSF	$CSR_{M,\sigma'}$	$CSR_{M=7.5,\sigma'=1}$	F.S.
B2	10	1219	907	0.98	0.17	1.10	1.80	0.97	**0.88**	**0.82**	**0.40**
B2	25	3187	1939	0.93	0.10	1.00	1.23	0.97	**1.02**	**1.04**	**0.13**

Post Liquefaction Settlement Analysis

Sample	Depth, ft	$(N_1)_{60CS}$, bpf	F.S.	γ_{LIM}	F_α	γ_{MAX}	ε_v	Thickness, ft	Settlement, in
B2	10	27	0.40	0.07	0.14	0.07	**1.7%**	**3.0**	**0.6**
B2	25	12	0.13	0.39	0.87	0.39	**3.4%**	**3.0**	**1.2**

Liquefaction Potential Index (LPI)

Boring	Depth (ft)	Depth (m)	F.S.	Fi	Thickness (ft)	Thickness (m)	w(i)	LPI(i)	LPI
B2	10	3.05	0.40	0.60	3.0	0.91	8.48	**4.6**	**9.6**
B2	25	7.62	0.13	0.87	3.0	0.91	6.19	**4.9**	

Liquefaction Severity asa function of Liquefaction Potential Index (LPI)

Severity	Little to none	Minor	Moderate	Major
LPI	LPI = 0	0 < LPI < 5	5 < LPI < 15	15 < LPI

Liquefaction damage appears typically when LPI > 5

Soil Liquefaction During Earthquakes, Idriss, I.M. & Boulanger, R.W., Earthquake Engineering Research Institute, MNO-12, 2008
SPT-Based Liquefaction Triggering Procedures, Idriss, I.M. & Boulanger, R.W., UC Davis, UCD/CGM-10/02, 2010
CPT and SPT Based Liquefaction Triggering Procedures, Boulanger, R.W. & Idriss, I.M., UC Davis, UCD/CGM-14/01, 2014
Dixit, Dewaikar, & Jangid 2012 and Ozocak & Sert 2010

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SPT LIQUEFACTION ANALYSIS - BORING 2

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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9
FIGURE

Project: SRCS - District Office
Job No: 1079.122

Analyzed by: BSP
Date: 11/6/2025

Soil & Seismic Properties

Magnitude, M_w: 7.6
PGA, g: 1.02
GW Depth, ft: 5.0

Layer	UCS Type	γ_d, pcf	ω%	Depth, ft Upper	Depth, ft Lower	γ_t, pcf	Thickness, ft
1	CL	100	20%	0	11	120	11
2	GC/SC	90	30%	11	16	117	5
3	CL	100	30%	16	20	130	4
4	SC/GW	110	20%	20	28	132	8

Cyclic Resistance Ratio (CRR)

MC to SPT: 0.6
Borehole Dia: 6.0
Hammer Eff: 0.8

Sample	Depth, ft	N_{FIELD}, bpf	Fines Cont., %	Sampler Type	Liner Correction	UCS Type	σ, psf	σ', psf	Sampler Corr.	$N_{COR.}$, bpf
B3	15.0	10	26	MC	NO	GC/SC	1788	1164	0.6	6.0
B3	20.0	19	20	MC	NO	CL	2425	1489	0.6	11.4
B3	26.5	24	9	SPT	NO	SC/GW	3283	1941	1.0	24.0

Sample	Depth (ft)	C_E	C_B	C_R	C_S	C_N	N_{60}, bpf	$(N_1)_{60}$, bpf	$\Delta(N_1)_{60}$, bpf	$(N_1)_{60CS}$, bpf	$CRR_{M=7.5,\sigma'=1}$
B3	15.0	1.33	1.05	0.85	1.00	1.31	8.0	9.3	5.1	14	0.15
B3	20.0	1.33	1.05	0.95	1.00	1.13	15.2	17.2	4.5	22	0.23
B3	26.5	1.33	1.05	0.95	1.00	1.01	32.0	32.2	0.7	33	0.75

Cyclic Stress Ratio Induced by Earthquake (CSR)

Sample	Depth, ft	σ, psf	σ', psf	r_d	C_σ	K_σ	MSF_{MAX}	MSF	$CSR_{M,\sigma'}$	$CSR_{M=7.5,\sigma'=1}$	F.S.
B3	15	1788	1164	0.97	0.11	1.06	1.30	0.97	0.99	0.96	0.16
B3	20	2425	1489	0.95	0.14	1.04	1.56	0.97	1.03	1.01	0.23
B3	26.5	3283	1941	0.93	0.23	1.01	2.19	0.97	1.04	1.06	0.71

Post Liquefaction Settlement Analysis

Sample	Depth, ft	$(N_1)_{60CS}$, bpf	F.S.	γ_{LIM}	F_α	γ_{MAX}	ε_v	Thickness, ft	Settlement, in
B3	15	14	0.16	0.29	0.78	0.29	2.9%	5.0	1.8
B3	20	22	0.23	0.13	0.43	0.13	2.2%	7.0	1.8
B3	26.5	33	0.71	0.03	-0.29	0.03	0.5%	2.0	0.1

Liquefaction Potential Index (LPI)

Boring	Depth (ft)	Depth (m)	F.S.	Fi	Thickness (ft)	Thickness (m)	w(i)	LPI(i)	LPI
B3	15	4.57	0.16	0.84	5.0	1.52	7.71	9.9	
B3	20	6.10	0.23	0.77	7.0	2.13	6.95	11.5	22.4
B3	26.5	8.08	0.71	0.29	2.0	0.61	5.96	1.0	

Liquefaction Severity asa function of Liquefaction Potential Index (LPI)

Severity	Little to none	Minor	Moderate	Major
LPI	LPI = 0	0 < LPI < 5	5 < LPI < 15	15 < LPI

Liquefaction damage appears typically when LPI > 5

Soil Liquefaction During Earthquakes, Idriss, I.M. & Boulanger, R.W., Earthquake Engineering Research Institute, MNO-12, 2008
SPT-Based Liquefaction Triggering Procedures, Idriss, I.M. & Boulanger, R.W., UC Davis, UCD/CGM-10/02, 2010
CPT and SPT Based Liquefaction Triggering Procedures, Boulanger, R.W. & Idriss, I.M., UC Davis, UCD/CGM-14/01, 2014
Dixit, Dewaikar, & Jangid 2012 and Ozocak & Sert 2010

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SPT LIQUEFACTION ANALYSIS - BORING 3

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

10
FIGURE

Project: SRCS - District Office
Job No: 1079.122

Analyzed by: BSP
Date: 11/6/2025

Soil & Seismic Properties

Magnitude, M_w: 7.6
PGA, g: 1.02
GW Depth, ft: 5.0

Layer	UCS Type	γ_d, pcf	ω%	Depth, ft Upper	Depth, ft Lower	γ_t, pcf	Thickness, ft
1	CL	105	25%	0	30	131	30
2	SC	105	25%	30	45	131	15
3	GC	110	25%	45	50	138	5

Cyclic Resistance Ratio (CRR)

MC to SPT: 0.6
Borehole Dia: 6.0
Hammer Eff: 0.8

Sample	Depth, ft	N_{FIELD}, bpf	Fines Cont., %	Sampler Type	Liner Correction	UCS Type	σ, psf	σ', psf	Sampler Corr.	$N_{COR.}$, bpf
B4	45.0	40	17	SPT	NO	SC	5906	3410	1.0	40.0

Sample	Depth (ft)	C_E	C_B	C_R	C_S	C_N	N_{60}, bpf	$(N_1)_{60}$, bpf	$\Delta(N_1)_{60}$, bpf	$(N_1)_{60CS}$, bpf	$CRR_{M=7.5,\sigma'=1}$
B4	45.0	1.33	1.05	1.00	1.00	0.89	**53.3**	**49.8**	**3.9**	**54**	**1.09E+04**

Cyclic Stress Ratio Induced by Earthquake (CSR)

Sample	Depth, ft	σ, psf	σ', psf	r_d	C_σ	K_σ	MSF	$CSR_{M,\sigma'}$	$CSR_{M=7.5,\sigma'=1}$	F.S.
B4	45	5906	3410	0.85	0.30	0.84	0.97	**0.98**	**1.19**	**3.00+**

Post Liquefaction Settlement Analysis

Sample	Depth, ft	$(N_1)_{60CS}$, bpf	F.S.	γ_{LIM}	F_α	γ_{MAX}	ε_v	Thickness, ft	Settlement, in
B4	45	54	3.00+	0.00	-1.88	0.00	**0.0%**	5.0	**0.0**

Liquefaction Potential Index (LPI)

Boring	Depth (ft)	Depth (m)	F.S.	Fi	Thickness (ft)	Thickness (m)	w(i)	LPI(i)	LPI
B4	45	13.72	3.00+	0.00	5.0	1.52	3.14	**0.0**	**0.0**

Liquefaction Severity asa function of Liquefaction Potential Index (LPI)

Severity	Little to none	Minor	Moderate	Major
LPI	LPI = 0	0 < LPI < 5	5 < LPI < 15	15 < LPI

Liquefaction damage appears typically when LPI > 5

Soil Liquefaction During Earthquakes, Idriss, I.M. & Boulanger, R.W., Earthquake Engineering Research Institute, MNO-12, 2008
SPT-Based Liquefaction Triggering Procedures, Idriss, I.M. & Boulanger, R.W., UC Davis, UCD/CGM-10/02, 2010
Dixit, Dewaikar, & Jangid 2012 and Ozocak & Sert 2010

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SPT LIQUEFACTION ANALYSIS - BORING 4

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

11
FIGURE

Project: SRCS - District Office
Job No: 1079.122

Analyzed by: BSP
Date: 11/6/2025

Soil & Seismic Properties

Magnitude, M_w: 7.6
PGA, g: 1.0
GW Depth, ft: 5.0

Layer	UCS Type	γ_d, pcf	ω%	Depth, ft Upper	Depth, ft Lower	γ_t, pcf	Thickness, ft
1	CL	110	20%	0	5	132	5
2	ML	100	25%	5	15	125	10
3	CL	105	20%	15	22	126	7
4	GC	110	10%	22	25	121	3

Cyclic Resistance Ratio (CRR)

MC to SPT: 0.6
Borehole Dia: 6
Hammer Eff: 0.8

Sample	Depth, ft	N_{FIELD}, bpf	Fines Cont., %	Sampler Type	Liner Correction	UCS Type	σ, psf	σ', psf	Sampler Corr.	N_{COR}, bpf
B5	23.5	50	14	SPT	NO	GC	2974	1819	1.0	50.0

Sample	Depth (ft)	C_E	C_B	C_R	C_S	C_N	N_{60}, bpf	$(N_1)_{60}$, bpf	$\Delta(N_1)_{60}$, bpf	$(N_1)_{60CS}$, bpf	$CRR_{M=7.5,\sigma'=1}$
B5	23.5	1.33	1.05	0.95	1.00	1.01	**66.7**	**67.4**	**2.9**	**70**	**1.21E+15**

Cyclic Stress Ratio Induced by Earthquake (CSR)

Sample	Depth, ft	σ, psf	σ', psf	r_d	C_σ	K_σ	MSF	$CSR_{M,\sigma'}$	$CSR_{M=7.5,\sigma'=1}$	F.S.
B5	23.5	2974	1819	0.94	0.30	1.03	0.97	**1.02**	**1.02**	**3.00+**

Post Liquefaction Settlement Analysis

Sample	Depth, ft	$(N_1)_{60CS}$, bpf	F.S.	γ_{LIM}	F_α	γ_{MAX}	ε_v	Thickness, ft	Settlement, in
B5	23.5	70	3.00+	0.00	-3.32	0.00	**0.0%**	**5.0**	**0.0**

Liquefaction Potential Index (LPI)

Boring	Depth (ft)	Depth (m)	F.S.	Fi	Thickness (ft)	Thickness (m)	w(i)	LPI(i)	LPI
B5	23.5	7.16	3.00+	0.00	1	0.30	6.42	**0.0**	**0.0**

Liquefaction Severity asa function of Liquefaction Potential Index (LPI)

Severity	Little to none	Minor	Moderate	Major
LPI	LPI = 0	0 < LPI < 5	5 < LPI < 15	15 < LPI

Liquefaction damage appears typically when LPI > 5

Soil Liquefaction During Earthquakes, Idriss, I.M. & Boulanger, R.W., Earthquake Engineering Research Institute, MNO-12, 2008
SPT-Based Liquefaction Triggering Procedures, Idriss, I.M. & Boulanger, R.W., UC Davis, UCD/CGM-10/02, 2010
Dixit, Dewaikar, & Jangid 2012 and Ozocak & Sert 2010

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SPT LIQUEFACTION ANALYSIS - BORING 5

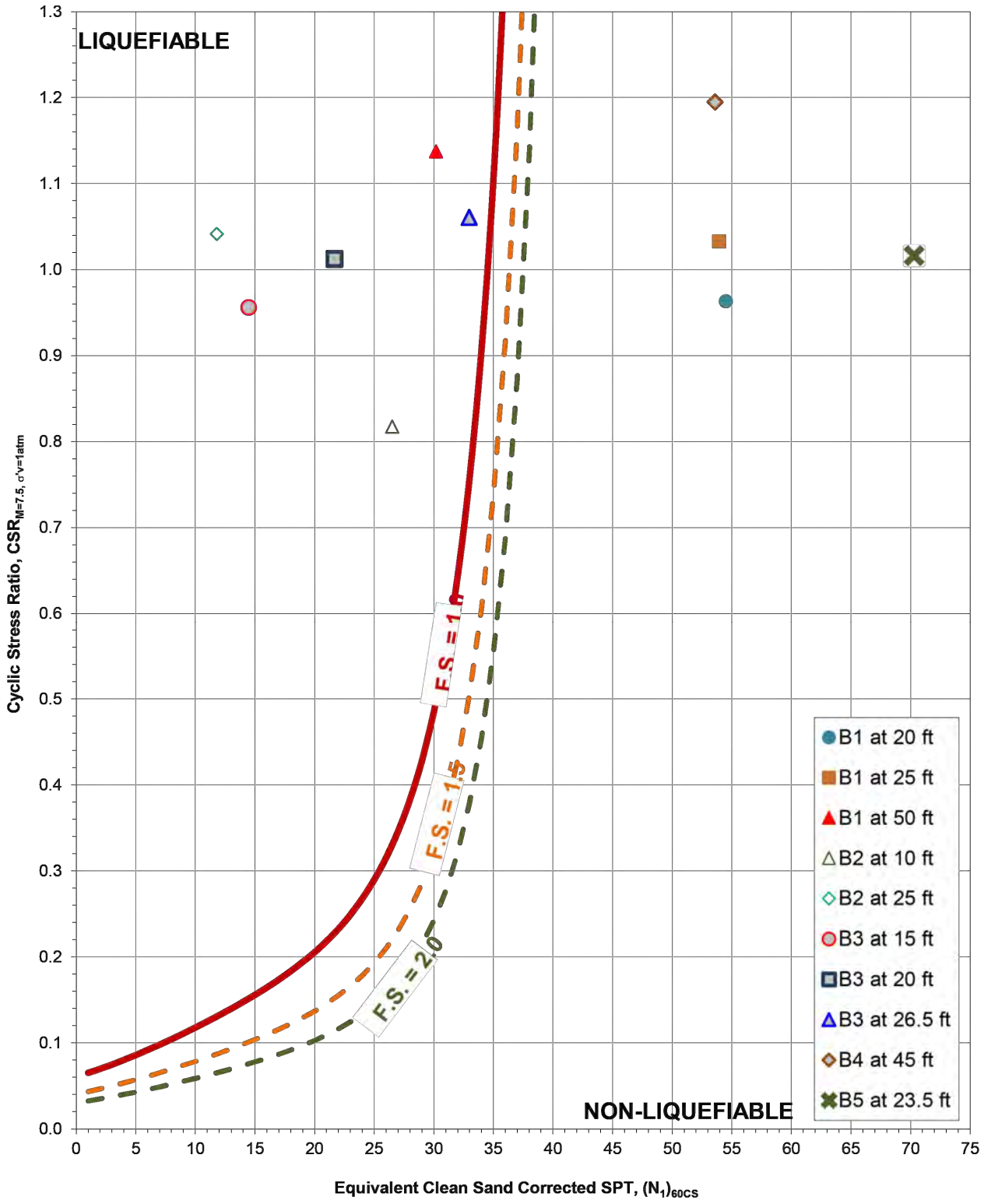
Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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12
FIGURE

Liquefaction Analysis
(Idriss, I.M.& Boulanger, R.W., 2008 & 2010)



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SPT LIQUEFACTION ANALYSIS PLOT

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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13
FIGURE

MILLER PACIFIC ENGINEERING GROUP
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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-01
Total depth: 79.40 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	12.40 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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LIQUEFACTION ANALYSIS (Ic=2.60) - CPT-01

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122
Date: 11/17/2025

Drawn: CMS
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14
FIGURE

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-02
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	21.60 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_o applied:	Yes	MSF method:	Method based

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LIQUEFACTION ANALYSIS (Ic=2.60) - CPT-02

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LIQUEFACTION ANALYSIS (Ic=2.60) - CPT-03

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-03
Total depth: 50.36 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	10.10 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-04
Total depth: 77.26 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	16.90 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_o applied:	Yes		

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LIQUEFACTION ANALYSIS (Ic=2.60) - CPT-04

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-05
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	13.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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LIQUEFACTION ANALYSIS (Ic=2.60) - CPT-05

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FIGURE 18

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-06
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	14.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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FIGURE 19

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-07
Total depth: 81.04 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	12.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-01
Total depth: 79.40 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	12.40 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_o applied:	Yes		

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LIQUEFACTION ANALYSIS (Ic=2.50) - CPT-01

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-02
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	21.60 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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FIGURE 22

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-03
Total depth: 50.36 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	10.10 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_o applied:	Yes	MSF method:	Method based

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LIQUEFACTION ANALYSIS (Ic=2.50) - CPT-04

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24 FIGURE

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-04
Total depth: 77.26 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	16.90 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-05
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	13.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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FIGURE 26

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Project: 1079.122
Location: Santa Rosa, California

CPT: CPT-06
Total depth: 50.52 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	14.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

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FIGURE 27

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Project: **1079.122**
Location: **Santa Rosa, California**

CPT: CPT-07
Total depth: 81.04 ft

Analysis method:	B&I (2014)	G.W.T. (in-situ):	12.20 ft	Use fill:	No	Clay like behavior applied:	.
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A		
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth applied:	Yes
Earthquake magnitude M_w:	7.60	Ic cut-off value:	2.50	Trans. detect. applied:	Yes	Limit depth:	50.00 ft
Peak ground acceleration:	1.02	Unit weight calculation:	Based on SBT	K_σ applied:	Yes	MSF method:	Method based

Post Cyclic Softening Undrained Shear Strength
Analysis Utilizing
Standard Penetration Test Data

Project: **SRCS - District Office**
Job No: **1079.122**

Analyzed by: **BSP**
Date: **11/7/2025**

Soil & Seismic Properties

Magnitude, M_w: **7.6**
PGA, g: **1.02**
Sa(1.0), g: **2.20**
Sa(0.2), g: **0.85**
S1, g: **2.59**

Layer	UCS Type	γ_d, pcf	ω%	PL	LL	Depth, ft Upper	Depth, ft Lower	Thickness, ft	γ_t, pcf	LI
1	CL	100	25%	24.0	44.0	0	19	19	125	0.05
2	SC/GC	130	10%	25.0	44.0	19	27	8	143	-0.79
3	CL	100	30%	-	-	27	46	19	130	-
4	SM	100	25%	25.0	33.0	46	52	6	125	0.00

GW Depth: **5.0** feet

Undrained Shear Strength

MC to SPT: **0.6**
Hammer Eff: **0.8**

Sample	Depth, ft	UCS Type	N_{FIELD}, bpf	Sampler Type	Sampler Corr.	$N_{COR.}$, bpf	C_E	N_{60}, bpf	S_{uLAB}, psf	S_{uCorr}, psf	LI
B1	1.0	CL	14	MC	0.6	8	1.33	11	1500	-	0.05
B1	3.0	CL	21	MC	0.6	13	1.33	17	2700	-	0.05
B1	5.0	CL	22	MC	0.6	13	1.33	18	2550	-	0.05
B1	10.0	CL	8	MC	0.6	5	1.33	6	900	-	0.05
B1	15.0	CL	9	MC	0.6	5	1.33	7	750	-	0.05
B1	30.0	CL	16	SPT	1.0	16	1.33	21	-	1749	-
B1	35.0	CL	29	MC	0.6	17	1.33	23	-	1902	-
B1	40.0	CL	46	MC	0.6	28	1.33	37	-	3018	-
B1	45.0	CL	21	MC	0.6	13	1.33	17	-	1378	-
B1	50.0	SM	27	SPT	1.0	27	1.33	36	-	2952	0.00

Cyclic Softening

Sample	Depth, ft	σ, psf	σ', psf	r_d	CSR_M	MSF	CRR_M	F.S.	S_t	S_{ur}
B1	1.0	125	125	1.00	0.66	1.00	9.56	14.41	-	-
B1	3.0	375	375	1.00	0.66	1.00	5.73	8.65	-	-
B1	5.0	625	625	1.00	0.66	1.00	3.25	4.90	-	-
B1	10.0	1250	938	0.98	0.87	1.00	0.76	0.88	0.5	1800
B1	15.0	1875	1251	0.97	0.96	1.00	0.48	0.50	0.8	1000
B1	30.0	3909	2349	0.91	1.00	1.00	0.59	0.59	1.0	1749
B1	35.0	4559	2687	0.89	1.00	1.00	0.56	0.56	1.0	1902
B1	40.0	5209	3025	1.89	2.16	1.00	0.79	0.37	1.0	3018
B1	45.0	5859	3363	2.89	3.34	1.00	0.33	0.10	1.0	1378
B1	50.0	6489	3681	3.89	4.55	1.00	0.64	0.14	1.0	2952

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CYCLIC SOFTENING ANALYSIS - BORING 1

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Project No. 1079.122 Date: 11/17/2025

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FIGURE

Post Cyclic Softening Undrained Shear Strength Analysis Utilizing Standard Penetration Test Data

Project: **SRCS - District Office**
Job No: **1079.122**

Analyzed by:
Date:

Soil & Seismic Properties

Magnitude, M_w: **7.6**
PGA, g: **1.02**
Sa(1.0), g: **2.20**
Sa(0.2), g: **0.85**
S1, g: **2.59**

Layer	UCS Type	γ_d, pcf	ω%	PL	LL	Depth, ft Upper	Depth, ft Lower	Thickness, ft	γ_t, pcf	LI
1	CL	105	15%	23.0	44.0	0	9	9	121	-0.38
2	GW	120	10%	-	-	9	12	3	132	-
3	CL/CH	100	30%	-	-	12	24	12	130	-
4	GW-GC	125	15%	-	-	24	27	3	144	-

GW Depth: **5.0** feet

Undrained Shear Strength

MC to SPT: **0.6**
Hammer Eff: **0.8**

Sample	Depth, ft	UCS Type	N_{FIELD}, bpf	Sampler Type	Sampler Corr.	$N_{COR.}$, bpf	C_E	N_{60}, bpf	S_{uLAB}, psf	S_{uCorr}, psf
B2	0.5	CL	14	MC	0.6	8	1.33	11	-	918
B2	2.0	CL	16	MC	0.6	10	1.33	13	2400	-
B2	4.0	CL	23	MC	0.6	14	1.33	18	2750	-
B2	15.0	CL/CH	29	MC	0.6	17	1.33	23	850	-
B2	20.0	CL/CH	11	MC	0.6	7	1.33	9	-	722
B2	27.0	GW-GC	20	SPT	1.0	20	1.33	27	-	2187

Cyclic Softening

Sample	Depth, ft	σ, psf	σ', psf	r_d	CSR_M	MSF	CRR_M	F.S.	S_t	S_{ur}
B2	0.5	63	63	1.00	0.66	1.00	11.70	17.65	-	-
B2	2.0	250	250	1.00	0.66	1.00	7.65	11.53	-	-
B2	4.0	500	500	1.00	0.66	1.00	4.38	6.61	-	-
B2	15.0	1875	1251	0.97	0.96	1.00	0.54	0.56	0.7	1214
B2	20.0	2518	1582	0.91	0.96	1.00	0.36	0.38	0.8	902
B2	27.0	3519	2146	0.89	0.97	1.00	0.81	0.84	0.9	2430

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CYCLIC SOFTENING ANALYSIS - BORING 2

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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FIGURE

Post Cyclic Softening Undrained Shear Strength Analysis Utilizing Standard Penetration Test Data

Project: **SRCS - District Office**
Job No: **1079.122**

Analyzed by: **BSP**
Date: **11/7/2025**

Soil & Seismic Properties

Magnitude, M_w: **7.6**
PGA, g: **1.02**
Sa(1.0), g: **2.20**
Sa(0.2), g: **0.85**
S1, g: **2.59**

Layer	UCS Type	γ_d, pcf	ω%	PL	LL	Depth, ft Upper	Depth, ft Lower	Thickness, ft	γ_t, pcf	LI
1	CL	100	20%	-	-	0	11	11	120	-
2	GC/SC	90	30%	-	-	11	16	5	117	-
3	CL	100	30%	-	-	16	20	4	130	-
4	SC/GW	110	20%	-	-	20	28	8	132	-

GW Depth: **5.0** feet

Undrained Shear Strength

MC to SPT: **0.6**
Hammer Eff: **0.8**

Sample	Depth, ft	UCS Type	N_{FIELD}, bpf	Sampler Type	Sampler Corr.	N_{COR}, bpf	C_E	N_{60}, bpf	S_{uLAB}, psf	S_{uCorr}, psf	LI
B3	2.0	CL	14	MC	0.6	8	1.33	11	2200	-	-
B3	4.0	CL	21	MC	0.6	13	1.33	17	750	-	-
B3	7.0	CL	22	MC	0.6	13	1.33	18	1050	-	-
B3	10.0	CL	8	MC	0.6	5	1.33	6	400	-	-

Cyclic Softening

Sample	Depth, ft	σ, psf	σ', psf	r_d	CSR_M	MSF	CRR_M	F.S.	S_t	S_{ur}
B3	2.0	250	250	1.00	**0.66**	1.00	**7.01**	**10.57**	-	-
B3	4.0	500	500	1.00	**0.66**	1.00	**1.19**	**1.80**	-	-
B3	7.0	875	750	1.00	**0.77**	1.00	**1.11**	**1.44**	-	-
B3	10.0	1250	938	0.98	**0.87**	1.00	**0.34**	**0.39**	**1.0**	**400**

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CYCLIC SOFTENING ANALYSIS - BORING 3

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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FIGURE

Post Cyclic Softening Undrained Shear Strength
Analysis Utilizing
Standard Penetration Test Data

Project: **SRCS - District Office**
Job No: **1079.122**

Analyzed by: **BSP**
Date: **11/7/2025**

Soil & Seismic Properties

Magnitude, M_w: **7.6**
PGA, g: **1.02**
Sa(1.0), g: **2.20**
Sa(0.2), g: **0.85**
S1, g: **2.59**

Layer	UCS Type	γ_d, pcf	ω%	PL	LL	Depth, ft Upper	Depth, ft Lower	Thickness, ft	γ_t, pcf	LI
1	CL/ML	105	25%	26.0	52.0	0	30	30	131	-0.04
2	SC	105	25%	22.0	48.0	30	45	15	131	0.12
3	GC	110	25%	24.0	37.0	45	49	4	138	0.08
4	CL	-	30%	-	-	49	51.5	2.5	-	-

GW Depth: **5.0** feet

Undrained Shear Strength

MC to SPT: **0.6**
Hammer Eff: **0.8**

Sample	Depth, ft	UCS Type	N_{FIELD}, bpf	Sampler Type	Sampler Corr.	N_{COR}, bpf	C_E	N_{60}, bpf	S_{uLAB}, psf	S_{uCorr}, psf	LI
B4	1.0	CL/ML	21	MC	0.6	13	1.33	17	1500	-	-0.04
B4	3.0	CL/ML	26	MC	0.6	16	1.33	21	2700	-	-0.04
B4	5.0	CL/ML	16	MC	0.6	10	1.33	13	2550	-	-0.04
B4	10.0	CL/ML	8	MC	0.6	5	1.33	6	900	-	-0.04
B4	15.0	CL/ML	20	MC	0.6	12	1.33	16	750	-	-0.04
B4	20.0	CL/ML	26	SPT	1.0	26	1.33	35	-	2843	-0.04
B4	25.0	CL/ML	29	MC	0.6	17	1.33	23	-	1902	-0.04
B4	50.0	CL	8	SPT	1.0	8	1.33	11	-	875	-

Cyclic Softening

Sample	Depth, ft	σ, psf	σ', psf	r_d	CSR_M	MSF	CRR_M	F.S.	S_t	S_{ur}
B4	1.0	125	125	1.00	0.66	1.00	9.56	14.41	-	-
B4	3.0	375	375	1.00	0.66	1.00	5.73	8.65	-	-
B4	5.0	625	625	1.00	0.66	1.00	3.25	4.90	-	-
B4	10.0	1250	938	0.98	0.87	1.00	0.76	0.88	0.5	1800
B4	15.0	1875	1251	0.97	0.96	1.00	0.48	0.50	0.8	1000
B4	20.0	2518	1582	0.91	0.96	1.00	1.43	1.49	-	-
B4	25.0	3233	1985	0.89	0.96	1.00	0.76	0.79	0.9	2114

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CYCLIC SOFTENING ANALYSIS - BORING 4

Santa Rosa City Schools
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Project No. 1079.122 Date: 11/17/2025

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FIGURE

Post Cyclic Softening Undrained Shear Strength
Analysis Utilizing
Standard Penetration Test Data

Project: **SRCS - District Office**
Job No: **1079.122**

Analyzed by: **BSP**
Date: **11/7/2025**

Soil & Seismic Properties

Magnitude, M_w: **7.6**
PGA, g: **1.02**
Sa(1.0), g: **2.20**
Sa(0.2), g: **0.85**
S1, g: **2.59**

						Depth, ft				
Layer	UCS Type	γ_d, pcf	ω%	PL	LL	Upper	Lower	Thickness, ft	γ_t, pcf	LI
1	CL	110	20%	25.0	47.0	0	5	5	132	-0.23
2	ML	100	25%	26.0	38.0	5	45	40	125	-0.08
3	CL	105	20%	-	-	45	22	-23	126	-
4	GC	110	10%	25.0	33.0	22	25	3	121	-1.88

GW Depth: **5.0** feet

Undrained Shear Strength

MC to SPT: **0.6**
Hammer Eff: **0.8**

Sample	Depth, ft	UCS Type	N_{FIELD}, bpf	Sampler Type	Sampler Corr.	$N_{COR.}$, bpf	C_E	N_{60}, bpf	S_{uLAB}, psf	S_{uCorr}, psf	LI
B5	2	CL	14	MC	0.6	8	1.33	11	2250	-	-0.23
B5	4.0	CL	21	MC	0.6	13	1.33	17	2400	-	-0.23
B5	6.0	ML	22	MC	0.6	13	1.33	18	-	1443	-0.08
B5	10.0	ML	8	MC	0.6	5	1.33	6	-	525	-0.08
B5	12.5	ML	9	SPT	1.0	9	1.33	12	-	984	-0.08
B5	20.0	ML	16	SPT	1.0	16	1.33	21	3250	-	-0.08

Cyclic Softening

Sample	Depth, ft	σ, psf	σ', psf	r_d	CSR_M	MSF	CRR_M	F.S.	S_t	S_{ur}
B5	2.0	250	250	1.00	0.66	1.00	7.17	10.81	-	-
B5	4.0	500	500	1.00	0.66	1.00	3.82	5.77	-	-
B5	6.0	750	688	1.00	0.72	1.00	1.67	2.31	-	-
B5	10.0	1250	938	0.98	0.87	1.00	0.45	0.51	0.8	700
B5	12.5	1563	1095	0.97	0.92	1.00	0.72	0.78	0.8	1312
B5	20.0	2518	1582	0.91	0.96	1.00	1.64	1.70	-	-

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CYCLIC SOFTENING ANALYSIS - BORING 5

Santa Rosa City Schools
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Project No. 1079.122 Date: 11/17/2025

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32
FIGURE

Shallow Foundation

Application Suggestion Summary

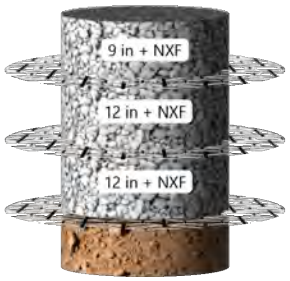
Tensar
A Division of CMC

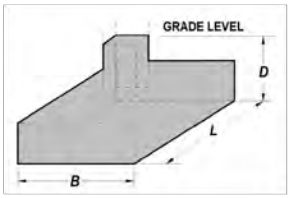
Design	Static Stabilized Gravel Raft	**Reference**	1079.122
Project		**Location**	Santa Rosa, CA, USA
Customer	SRCS	**Designer**	Ben Pappas
Company	Miller Pacific Engineering Group	**Date**	October 17, 2025

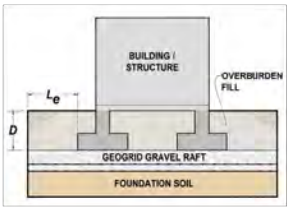
Design Methodology
A design approach using the T-value method for bearing capacity calculations and various settlement approaches for the design of cost effective shallow foundation support with mechanically stabilized aggregate layers.

Results

Stabilized







	Stabilized
Required thickness	33 in
Settlement	2.9 in
InterAx Foundation geogrid type	NXF
Bearing capacity factor of safety	3.03
Ultimate bearing capacity, q_u	13,637 psf
Lateral extents beyond footing, L_e	≥ 12.7 ft

Notes
a. Surface and/or subsurface groundwater are unique to each site and can vary seasonally. The presence of groundwater below the stabilized aggregate layer can affect foundation bearing resistance or global stability. The surface water may cause erosion and lead to poor performance or even failure of the stabilized aggregate layer. Impact of surface and subsurface water should be assessed by the client or client's engineer.
b. No alternate geogrids will be accepted without demonstrating the load spread efficiency of the mechanically stabilized layer through large scale triaxial testing, numerical modeling and full-scale validation. No products, including all TriAx and Biaxial geogrids should be considered equivalent to the specified geogrid based on index properties or in-air testing. Substitution of the specified product will invalidate the design and may result in failure.

Parameters

Footing

Length	30 ft
Width	2 ft
Depth	1.5 ft
Max. bearing pressure	4,500 psf
Bearing capacity FS	3
Overburden unit weight	125 pcf

Aggregate

Bulk unit weight	130 pcf
Friction angle	40 deg

Groundwater

Depth	5 ft

Foundation Soil

Cohesion	Cohesive
Undrained shear strength	500 psf

Dimensions

Building length	500 ft
Building width	50 ft

Material Costs (Installed)

Aggregate	$25.00/ton

Geosynthetic Costs (Installed)

NXF	$9.01/yd^2

Soil strata

Material	Thickness	Bulk unit weight	SPT	OCR	Cc/(1+e0)	Cr/Cc
Clay	100 ft	120 pcf		1	0.1	0

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STABILIZED GRAVEL RAFT CALCULATIONS - STATIC

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Project No. 1079.122 Date: 11/17/2025

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33
FIGURE

Liquefaction Effect Mitigation

Application Suggestion Summary

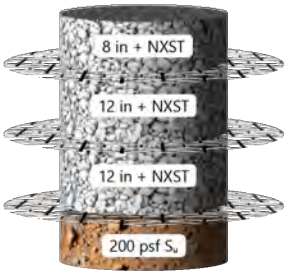
Design	SRCS - District Office	**Reference**	1079.122
Project		**Location**	211 Ridgway Ave, Santa Rosa, CA 95401, USA
Customer	SRCS	**Designer**	Ben Pappas
Company	Miller Pacific Engineering Group	**Date**	October 17, 2025

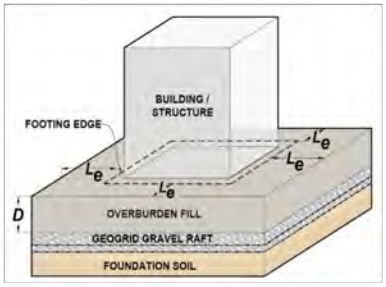
Design Methodology

A design approach using the T-Value bearing capacity method for the design of cost effective and technically proven stabilized geogrid gravel rafts to reduce the potential loss of bearing support for low height structures due to liquefaction.

Results

Stabilized





Notes

a. The recommended solution assumes high quality crushed rock or high quality recycled aggregate with maximum particle size of 3.5" and not more than 15% passing No. 200 sieve.
b. No alternate geogrids will be accepted without demonstrating the load spread efficiency of the mechanically stabilized layer through large scale triaxial testing, numerical modeling and full-scale validation. No products, including all TriAx and Biaxial geogrids should be considered equivalent to the specified geogrid based on index properties or in-air testing. Substitution of the specified product will invalidate the design and may result in failure.

Required gravel raft thickness	32 in
Post-liquefaction total settlement	2 in
InterAx Foundation geogrid type	NXST
Bearing capacity factor of safety	3.08
Ultimate bearing capacity, q_u	7,694 psf
Lateral extents beyond footing, Le	≥ 10 ft

Gravel raft dimensions	525 ft x 72 ft
Geosynthetic quantity	13,812 yd²
Construction cost	$265,607
Construction time	7.2 days

Parameters

Footing

Length, L	30 ft
Width, B	2 ft
Depth, D	1.5 ft
Max. bearing pressure	2,500 psf
Post-liquefaction total settlement	2 in
Post-liquefaction bearing capacity FS	3
Overburden unit weight	125 pcf

Aggregate

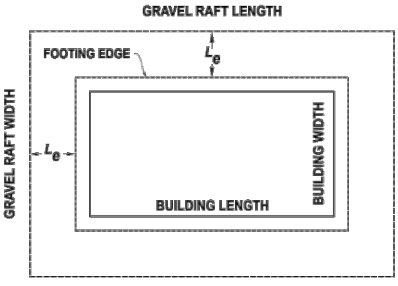
Unit weight	130 pcf
Peak friction angle	45 deg

Foundation Soil

Post-liquefaction residual strength	200 psf

Groundwater

Condition	At or below bottom of gravel raft



Dimensions

Building length	500 ft
Building width	50 ft
Gravel raft dimensions	520 x 70 ft

Material Costs (Installed)

Aggregate	$25.00/ton

Geosynthetic Costs (Installed)

NXST	$9.01/yd²
Geosynthetic quantity	12,134 yd²

Distances

Aggregate source	20 mi
Tensar distributor	20 mi

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STABILIZED GRAVEL RAFT CALCULATIONS - SEISMIC

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Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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FIGURE

APPENDIX A
SOIL BORINGS & LABORATORY TESTING

We explored subsurface conditions at the site with five exploratory borings drilled with truck mounted drilling equipment on September 24th and 25th, 2025. The approximate boring locations are shown on Figure 2. The borings were drilled to a maximum depth of 51.0-feet below the ground surface. The samples obtained were examined in the field, sealed to prevent moisture loss, and transported to our laboratory.

The soils encountered were logged and identified in the field in general accordance with ASTM Standard D 2487, "Field Identification and Description of Soils (Visual-Manual Procedure)." This standard is briefly explained on Figures A-1, Soil Classification Chart. The boring logs are presented on Figures A-2 through A-13.

1.0 Laboratory Testing

We conducted laboratory tests on selected intact samples to verify field identifications and to evaluate engineering properties. The following laboratory tests were conducted in accordance with the ASTM standard test method cited:

- Laboratory Determination of Water (Moisture Content) of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216;
- Density of Soil in Place by the Drive-Cylinder Method, ASTM D 2937;
- Unconfined Compressive Strength of Cohesive Soil, ASTM D 1140;
- Particle Size Analysis of Soils, ASTM D 6913;
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D 4829;
- Expansion Index od Soils, ASTM D 4829;
- pH in soil, EPA 9040;
- Resistivity in Soil, SM 2510; and
- Anions in soil (sulfate and chloride), EPA 300.

The moisture content, dry density, unconfined compressive strength, plasticity index, expansion index test results are shown on the exploratory Boring Logs, Figures A-2 through A-13. Results of our plasticity index, expansion index, sieve analyses and corrosion resistance test results are presented on Figures A-19 through A-23. The exploratory boring logs, description of soils encountered, and the laboratory test data reflect conditions only at the location of the boring at the time they were excavated or retrieved. Conditions may differ at other locations and may change with the passage of time due to a variety of causes including natural weathering, climate, and changes in surface and subsurface drainage.

MAJOR DIVISIONS		SYMBOL	DESCRIPTION
COARSE GRAINED SOILS over 50% sand and gravel	CLEAN GRAVEL	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
	GRAVEL with fines	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	CLEAN SAND	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
	SAND with fines	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS over 50% silt and clay	SILT AND CLAY liquid limit <50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	SILT AND CLAY liquid limit >50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity
HIGHLY ORGANIC SOILS		PT	Peat, muck, and other highly organic soils
ROCK			Undifferentiated as to type or composition

KEY TO BORING AND TEST PIT SYMBOLS

CLASSIFICATION TESTS

PI	PLASTICITY INDEX
LL	LIQUID LIMIT
SA	SIEVE ANALYSIS
HYD	HYDROMETER ANALYSIS
P200	PERCENT PASSING NO. 200 SIEVE
P4	PERCENT PASSING NO. 4 SIEVE

SAMPLER TYPE

- MODIFIED CALIFORNIA
- STANDARD PENETRATION TEST
- THIN-WALLED / FIXED PISTON
- HAND SAMPLER
- ROCK CORE
- X DISTURBED OR BULK SAMPLE

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the excavation location during the time of exploration. Subsurface rock, soil or water conditions may vary in different locations within the project site and with the passage of time. Boundaries between differing soil or rock descriptions are approximate and may indicate a gradual transition.

STRENGTH TESTS

UC	LABORATORY UNCONFINED COMPRESSION
TXCU	CONSOLIDATED UNDRAINED TRIAXIAL
TXUU	UNCONSOLIDATED UNDRAINED TRIAXIAL
	UC, CU, UU = 1/2 Deviator Stress
DS (2.0)	DRAINED DIRECT SHEAR (NORMAL PRESSURE, ksf)

SAMPLER DRIVING RESISTANCE

Modified California and Standard Penetration Test samplers are driven 18 inches with a 140-pound hammer falling 30 inches per blow. Blows for the initial 6-inch drive seat the sampler. Blows for the final 12-inch drive are recorded onto the logs. Sampler refusal is defined as 50 blows during a 6-inch drive. Examples of blow records are as follows:

25	sampler driven 12 inches with 25 blows after initial 6-inch drive
85/7"	sampler driven 7 inches with 85 blows after initial 6-inch drive
50/3"	sampler driven 3 inches with 50 blows during initial 6-inch drive or beginning of final 12-inch drive
12*	blow count of 12 after gravel correction

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SOIL CLASSIFICATION CHART

Santa Rosa City Schools
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Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn DMS
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A-1
FIGURE

BORING 1

EQUIPMENT: Track Mounted B57 Drill Rig with 6.0-inch Hollow Stem Auger
DATE: 09/15/25
ELEVATION: 122 - feet*
*REFERENCE: Google Earth, 2025

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
0	0			2.0" Asphalt Concrete over 3.0" Aggregate Base						
				CLAY with Sand (CL) Dark brown, moist, stiff, low to medium plasticity, 15% to 25% fine to medium grained sand, trace gravel [Fill]	14	104	21.6	UC 1500		LL:44 PI:20
	1				21	108	20.1	UC 2700		
	5			CLAY with Sand (CL) Medium-dark brown, moist, stiff, low plasticity, 15% to 25% very fine to fine grained sand [Alluvium]	22	104	23.4	UC 2550		
3	10			Grades medium stiff <1" Sand lens at 10.0 feet	8	84	37.1	UC 900		
4				Sandy CLAY (CL) Medium-dark brown, moist, medium stiff, low plasticity, 35% to 45% very fine to fine grained sand [Alluvium]						
	15				9	90	33.1	UC 750		
5										
				Clayey SAND with Gravel (SC) Medium-dark brown, moist, medium dense, very fine to coarse grained, 30% to 40% low plasticity clay, 15% to 25% gravel up to ¾" [Alluvium]						
6	20									

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(4) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG

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Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn DMS
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A-2
FIGURE

BORING 1 (CONTINUED)

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
	20			Clayey SAND with Gravel (SC) Medium-dark brown, moist, medium dense, very fine to coarse grained, 30% to 40% low to medium plasticity clay, 15% to 25% gravel up to 3/4" [Alluvium]	35	136	9.1		P200 36.0%	LL:44 PI:19
	7									
	25			Clayey GRAVEL with Sand (GC) Medium-dark brown, saturated, dense, gravel up to 2", 10% to 20% low plasticity clay, 25% to 35% fine to coarse grained sand [Alluvium] Blow counts corrected for gravel influence See Figure A-14	63*	136 125	9.1 12.4		P200 15.9%	
	8									
	9			Clay (CL) Medium-dark brown, moist, medium stiff, low plasticity, 5% to 15% very fine to fine grained sand [Alluvium]						
	30				16		35.8		P200 90.3%	
	10									
	35									
	11			Grades dark gray	29	95	29.2			
	12									
	40									

▽ Water level encountered during drilling

▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-3
FIGURE

BORING 1 (CONTINUED)

DEPTH meters / feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
40			Clay (CL) Medium-dark brown, moist, very stiff, low plasticity, 10% to 20% very fine to fine grained sand [Alluvium]	46	107	21.8	UC 5300		
13									
45			Grades stiff						
14			Silty SAND (SM) Medium brown, moist, medium dense, very fine to fine grained, 30% to 40% low plasticity silt [Alluvium]	21	102	24.6	UC 1450		
15									
50				22		24.5		P200 33.5%	
16			SILT with Sand (ML) Medium-dark brown, moist, very stiff, low plasticity, 10% to 20% very fine to fine grained sand [Alluvium]						
55				27		35.6			LL:33 PI: 8
17			Boring terminated at 56.5 feet. Groundwater encountered at 19.0 feet.						
18									
60									

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(4) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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A-4
FIGURE

BORING 2

EQUIPMENT: Track Mounted B57 Drill Rig with 4.0-inch Solid Flight Auger
DATE: 09/26/25
ELEVATION: 122 - feet*
*REFERENCE: Google Earth, 2025

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
0	0			2.0" Asphalt Concrete over 3.0" Aggregate Base						LL:44 PI:21 EI:74
				CLAY with Sand (CL) Dark brown, moist, stiff, low to medium plasticity, 20% to 30% very fine to fine grained sand [Fill]	14	106	15.1			
					16	108	18.6	UC 2400		
1				CLAY with Sand (CL) Medium-dark brown, moist, stiff, low plasticity, 15% to 25% fine to coarse grained sand [Alluvium]						
	5				23	104	21.9	UC 2750		
2										
		▼		Gravel with Sand (GW) Dark brown, moist, medium dense, gravel up to 2.5", 25% to 35% fine to coarse grained sand [Alluvium]						
3	10				29	121	8.9		P200 4.7%	
				CLAY (CL) Medium-dark brown, moist, low plasticity [Alluvium]						
4										
	15									
5				Sandy CLAY (CL) Medium-dark brown, moist, medium stiff, low plasticity, 25% to 35% fine to medium grained sand [Alluvium]	11	87	35.2	UC 850		
6	20			Clay (CH) Medium-dark gray, moist, stiff, high plasticity [Alluvium]						

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-5
FIGURE

BORING 2 (CONTINUED)

DEPTH meters / feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
20			Clay (CH) Medium-dark gray, moist, stiff, high plasticity [Alluvium]	24	104	22.7	UC 2750		
7			Sand with Clay (SC) Medium-dark brown, moist, fine to medium grained, 15% to 25% low plasticity clay [Alluvium]						
25			Gravel with Clay and Sand (GW-GC) Medium-dark brown, moist, medium dense, gravel up to 2", 10% to 20% low plasticity clay, 25% to 35% fine to medium grained sand [Alluvium]	49	127	13.2		P200 11.8%	
8			Sandy CLAY (CL) Medium brown, moist, medium stiff, low plasticity, 35% to 45% fine to medium grained sand [Alluvium]	12*		21.2			
			Blow counts corrected for gravel influence See Figure A-15						
9 30			Boring terminated at 28.0 feet. Groundwater measured at 9.0 feet after drilling.						
10									
35									
11									
12 40									

▽ Water level encountered during drilling

▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-6
FIGURE

BORING 3

EQUIPMENT: Track Mounted B57 Drill Rig with 6.0-inch Hollow Stem Auger
DATE: 09/25/25
ELEVATION: 122 - feet*
*REFERENCE: Google Earth, 2025

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
0	0			2.0" Asphalt Concrete over 3.0" Aggregate Base						
				Sandy CLAY (CL) Dark brown, moist, stiff, low plasticity, 10% to 20% fine to coarse grained sand, 20% to 30% gravel up to ¾" [Fill]	13	110	17.2	UC 2200		
1	5			Grades 25% to 35% fine to coarse grained sand, 10% to 20% gravel up to ½"	14	92	31.9	UC 750		
2				CLAY with Sand (CL) Medium-dark brown, moist, medium stiff, low plasticity, 15% to 25% fine to medium grained sand, trace gravel [Alluvium]	12	88	33.2	UC 1050		
3	10			Sandy CLAY (CL) Medium-dark brown, moist, soft, low plasticity, 25% to 35% fine to medium grained sand, trace gravel [Alluvium]	9	115	15	UC 400		
4				Clayey GRAVEL with Sand (GC) Medium-dark brown, saturated, loose, rounded gravel up to ¾", 10% to 20% low plasticity clay, 30% to 40% fine to coarse grained sand [Alluvium]						
5	15			Clayey SAND (SC) Gray-brown, saturated, loose, fine to medium grained, 20% to 30% low plasticity clay [Alluvium]	10	89	30.3		P200 26.0%	
				Clay with Sand (CL) Medium-dark brown, moist, low plasticity, 15% to 25% fine to medium grained sand [Alluvium]						
6	20			Clayey SAND (SC) Medium gray-brown, saturated, medium dense, fine to medium grained, 10% to 20% low plasticity clay [Alluvium]						

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-7
FIGURE

BORING 3 (CONTINUED)

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
	20			Clayey SAND (SC) Medium gray-brown, saturated, medium dense, fine to medium grained, 10% to 20% low plasticity clay [Alluvium]	23	94	29.7		P200 14.3%	
7										
	25			Grades dense, 20% to 30% low plasticity clay						
				GRAVEL with Sand and Clay (GW-GC) Tan-brown, saturated, medium dense, gravel up to 1", 25% to 35% fine to coarse grained sand, less than 10% low plasticity clay [Alluvium]	79	117	17.5		P200 26.9%	
8					24*		13		P200 8.6%	
				Blow counts corrected for gravel influence See Figure A-16						
9	30			Boring terminated at 28.0 feet. Groundwater encountered at 11.0 feet while drilling. Groundwater measured at 9.0 feet after drilling.						
10										
	35									
11										
12										
	40									

▽ Water level encountered during drilling

▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(4) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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A-8
FIGURE

BORING 4

EQUIPMENT: Track Mounted B57 Drill Rig with 6.0-inch Hollow Stem Auger
DATE: 09/24/25
ELEVATION: 122 - feet*
*REFERENCE: Google Earth, 2025

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
0	0			2.75" Asphalt Concrete over 4.0" Aggregate Base						
				SILT with Sand (ML) Dark brown, moist, stiff, low plasticity, 15 to 25% fine to medium grained sand, 5 to 15% gravel, up to ½" Ø [Fill]	21	109	16.3	UC 3400		
1				Sandy SILT (ML) Medium-dark brown, moist, very stiff, low plasticity, 25 to 35% fine to medium grained sand, trace gravel, up to ½" Ø [Alluvium]	26	117	14.9	UC 3400		
	5			Sandy CLAY (CH) Medium brown, moist, stiff, medium to high plasticity, 15 to 25% very fine to fine grained sand [Alluvium]	16	107	24.2	UC 2600	P200 69.6%	LL:52 PI:26
2										
3	10			Grades wet, medium stiff	8	87	30.2	UC 300		
4										
	15			CLAY (CL) Dark gray, moist, stiff, low plasticity, 5 to 15% very fine to fine grained sand [Alluvium]	20	93	30.2	UC 1250		
5										
6	20			Grades medium-dark brown, stiff to very stiff						

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-9
FIGURE

BORING 4 (CONTINUED)

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
	20			Sand and gravel lenses at 10.5 feet	26	102	23.6	UC 3450		
	25			Sand and gravel lenses at 26.0 feet Blow counts corrected for gravel influence See Figure A-17	12*	99	25.7			
	30			Clayey SAND (SC) Medium-dark brown, moist, medium dense, medium grained sand, 35-45% low to medium plasticity clay [Alluvium]	17		20.7		P200 39.7%	LL:48 PI:26
	35			Grades fine to medium grained sand	24	106	22.3	UC 950		
7										
8										
9										
10										
11										
12	40									

▽ Water level encountered during drilling

▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-10
FIGURE

BORING 4 (CONTINUED)

DEPTH meters / feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
40			Grades dark gray, dense, 5 to 15% fine to coarse grained sand, 5 to 15% gravel up to ½" Ø	67	108	20.5	UC 1450		
13									
45			Clayey GRAVEL with Sand (GC) Medium-dark brown, moist, dense, up to ¾" Ø, 25 to 35% sand, 15 to 20% low plasticity clay, [Alluvium]	40		11.1		P200 17.4%	
14									
15			CLAY (CL) Medium brown, moist, medium stiff to stiff, low plasticity, 35 to 45% very fine to fine grained sand, trace gravel [Alluvium]						
50				8		29.9		P200 59.5%	LL:37 PI:13
			Boring terminated at 51.5 feet. Groundwater measured at 23.0 feet after drilling.						
16									
55									
17									
18									
60									

▽ Water level encountered during drilling

▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-11
FIGURE

BORING 5

EQUIPMENT: Track Mounted B57 Drill Rig with 4.0-inch Solid Flight Auger
DATE: 09/24/25
ELEVATION: 122 - feet*
*REFERENCE: Google Earth, 2025

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
0	0			2.0" Asphalt Concrete over 3.5" Aggregate Base						
				Sandy CLAY (CL) Dark brown, moist, stiff, low to medium plasticity, 25 to 35% fine to medium grained sand, trace gravel [Fill]	17	110	19.5	UC 2250		LL:47 PI:22
	5			Sandy SILT (ML) Medium-dark brown, moist, stiff, low plasticity, 30 to 40% fine to medium grained sand [Alluvium]	21	106	21.4	UC 2400		
2				Grades medium stiff to stiff; gravel lens at 7.5 feet	13					
				Grades 10 to 20% very fine to fine grained sand, soft						
3	10				6	86	36.3		P200 65.1%	LL:38 PI:12
4					6		33.4		P200 50.5%	LL:36 PI: 9
	15			Sand lens from 14.5 to 15.5 feet						
5				CLAY with Sand (CL) Dark gray, moist, stiff, low plasticity, 5 to 15% very fine grained sand [Alluvium]	14	92	31.2	UC 900		
6	20									

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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A-12
FIGURE

BORING 5 (CONTINUED)

DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (4)		BLOWS / FOOT (1)	DRY UNIT WEIGHT pcf (2)	MOISTURE CONTENT (%)	SHEAR STRENGTH psf (3)	OTHER TEST DATA	OTHER TEST DATA
	20			Grades tan to gray, 15 to 25% fine to medium grained sand	24	105	22.5	UC 3250		
				Clayey GRAVEL with Sand (GC) Medium-dark brown, moist, medium dense to dense, up to ½" Ø, 25 to 35% fine to coarse grained sand,15 to 25% low plasticity clay [Alluvium]						
7					50		12.8		P200 14.1%	
	25			Boring terminated at 25 feet. Groundwater encountered at 14 feet.						
8										
9	30									
10										
	35									
11										
12	40									

▽ Water level encountered during drilling
▼ Water level measured after drilling

NOTES: (1) UNCORRECTED FIELD BLOW COUNTS
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
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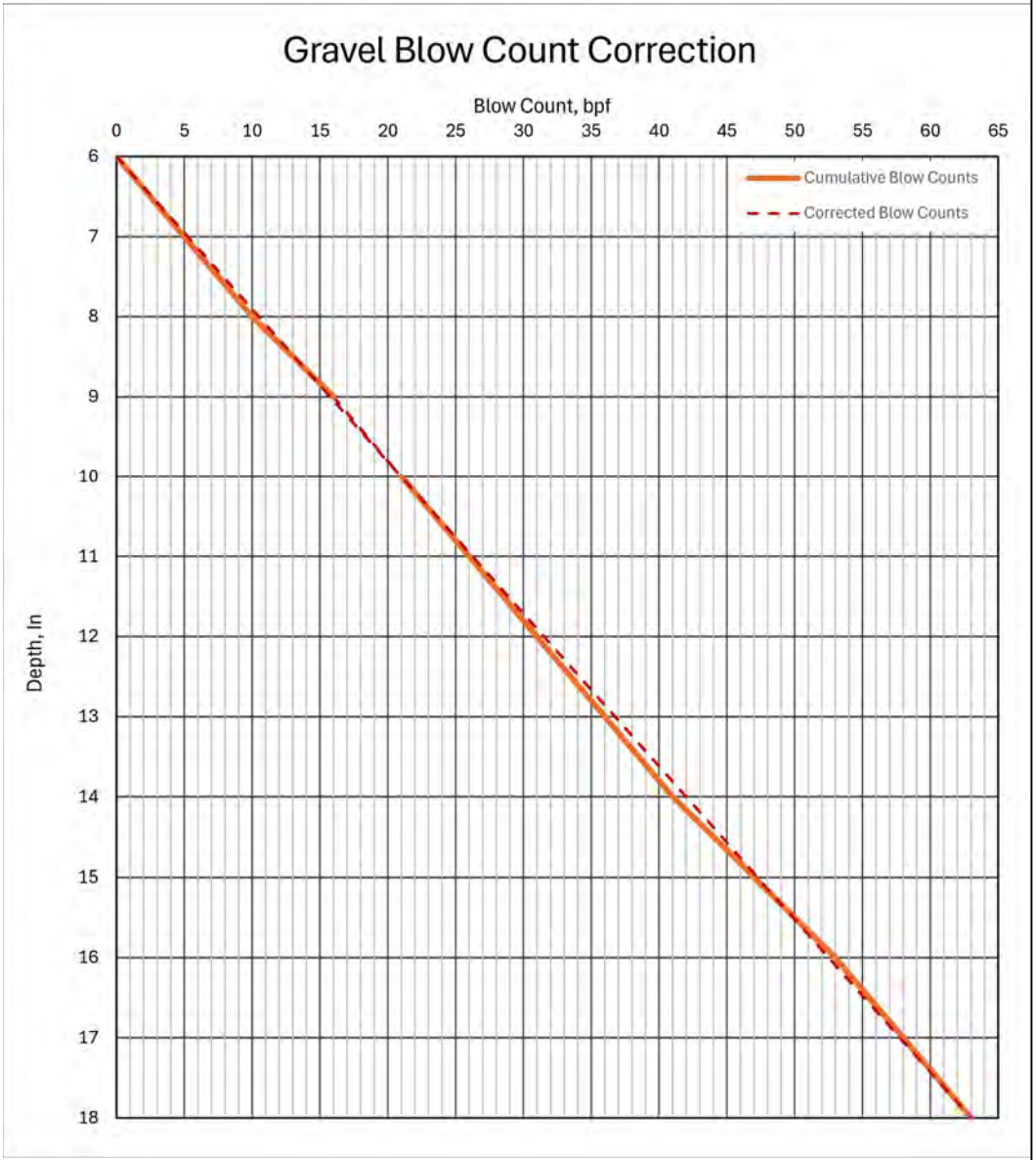
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A-13
FIGURE

Boring No. 1
Depth 25.0 ft

	Blow Count (bpf)	
Depth (In.)	Increment	Cumulative
6	0	0
7	5	5
8	5	10
9	6	16
10	5	21
11	5	26
12	5	31
13	5	36
14	5	41
15	6	47
16	6	53
17	5	58
18	5	63

Corrected Blows per ft.	63



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GRAVEL BLOW COUNT CORRECTION

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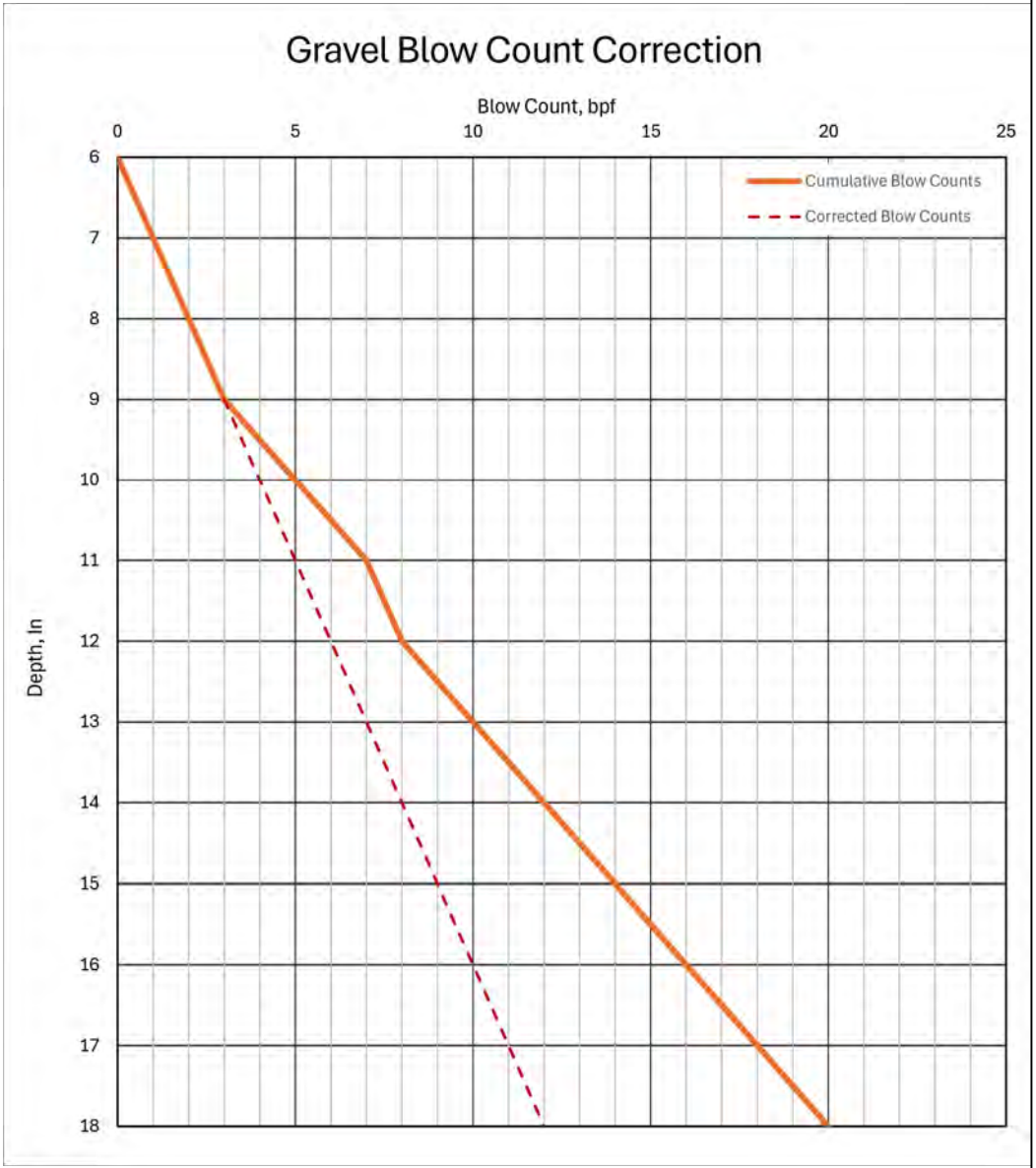
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A-14
FIGURE

Boring No. 2
Depth 26.5 ft

	Blow Count (bpf)	
Depth (In.)	Increment	Cumulative
6	0	0
7	1	1
8	1	2
9	1	3
10	2	5
11	2	7
12	1	8
13	2	10
14	2	12
15	2	14
16	2	16
17	2	18
18	2	20

Corrected Blows per ft.	12



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FILENAME: 1079.122 AppA.dwg

GRAVEL BLOW COUNT CORRECTION

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

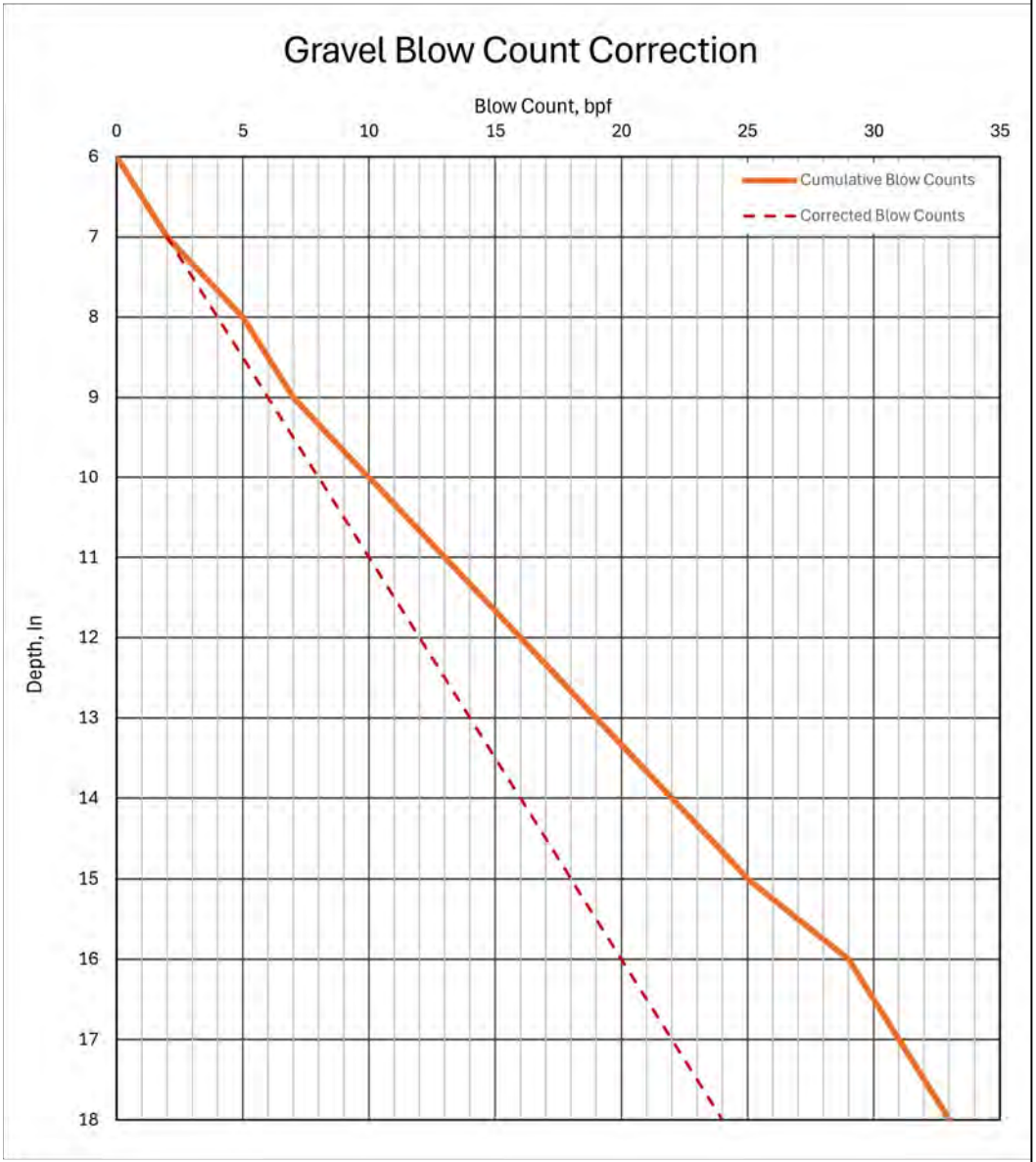
Drawn DMS
Checked

A-15
FIGURE

Boring No. 3
Depth 26.5 ft

	Blow Count (bpf)	
Depth (In.)	Increment	Cumulative
6	0	0
7	2	2
8	3	5
9	2	7
10	3	10
11	3	13
12	3	16
13	3	19
14	3	22
15	3	25
16	4	29
17	2	31
18	2	33

Corrected Blows per ft.	24



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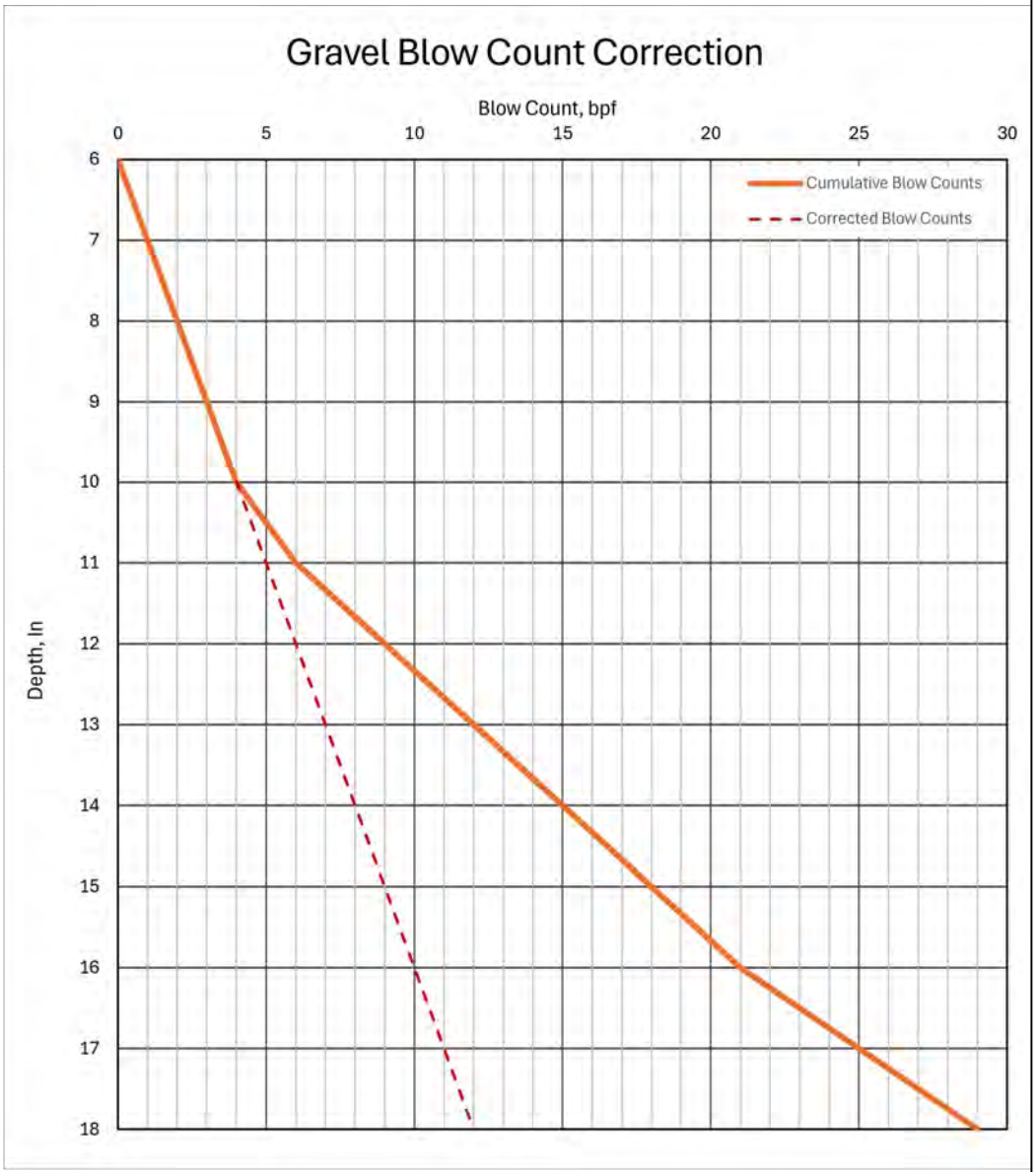
Drawn DMS
Checked

A-16
FIGURE

Boring No. 4
Depth 25.0 ft

	Blow Count (bpf)	
Depth (In.)	Increment	Cumulative
6	0	0
7	1	1
8	1	2
9	1	3
10	1	4
11	2	6
12	3	9
13	3	12
14	3	15
15	3	18
16	3	21
17	4	25
18	4	29

Corrected Blows per ft.	12



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GRAVEL BLOW COUNT CORRECTION

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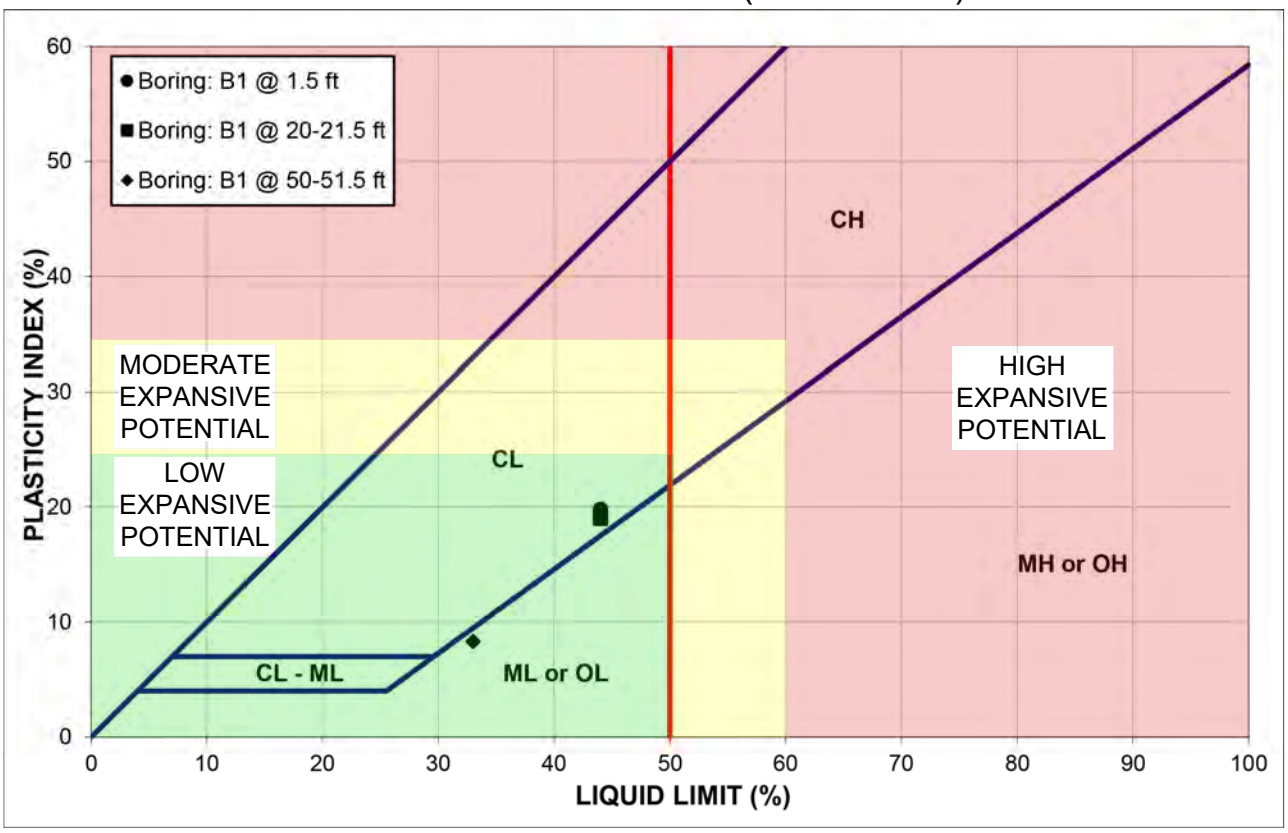
Project No. 1079.122 Date: 11/17/2025

Drawn DMS
Checked

A-17
FIGURE

MILLER PACIFIC ENGINEERING GROUP

ATTERBERG LIMITS TEST (ASTM D 4318)



Sample	Classification	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Boring: B1 @ 1.5 ft	CLAY w/ Sand Dark brown	44	24	20
Boring: B1 @ 20-21.5 ft	Clayey SAND w/ Gravel Med-dark brown	44	25	19
Boring: B1 @ 50-51.5 ft	Silty SAND Medium brown	33	25	8

PI = 0-3: Non-Plastic
PI = 3-15: Slightly Plastic
PI = 15-30: Medium Plasticity
PI = >30: High Plasticity

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ATTERBERG LIMITS TEST RESULTS

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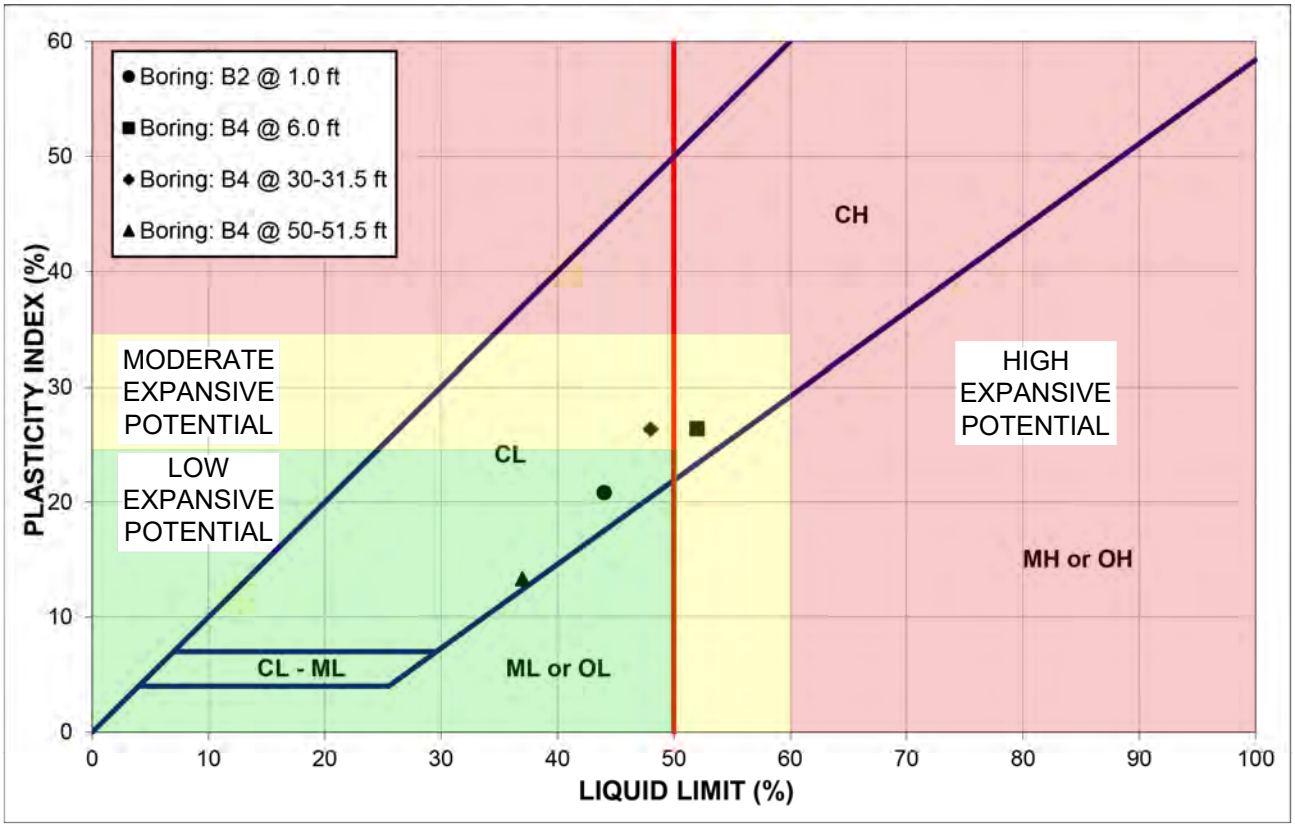
Project No. 1079.122 Date: 11/17/2025

Drawn DMS
Checked

A-18
FIGURE

MILLER PACIFIC ENGINEERING GROUP

ATTERBERG LIMITS TEST (ASTM D 4318)



Sample	Classification	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Boring: B2 @ 1.0 ft	CLAY w/ Sand Dark brown	44	23	21
Boring: B4 @ 6.0 ft	Sandy CLAY Medium brown	52	26	26
Boring: B4 @ 30-31.5 ft	Clayey SAND Medium brown	48	22	26
Boring: B4 @ 50-51.5 ft	Sandy CLAY Medium brown	37	24	13

PI = 0-3: Non-Plastic
PI = 3-15: Slightly Plastic
PI = 15-30: Medium Plasticity
PI = >30: High Plasticity

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ATTERBERG LIMITS TEST RESULTS

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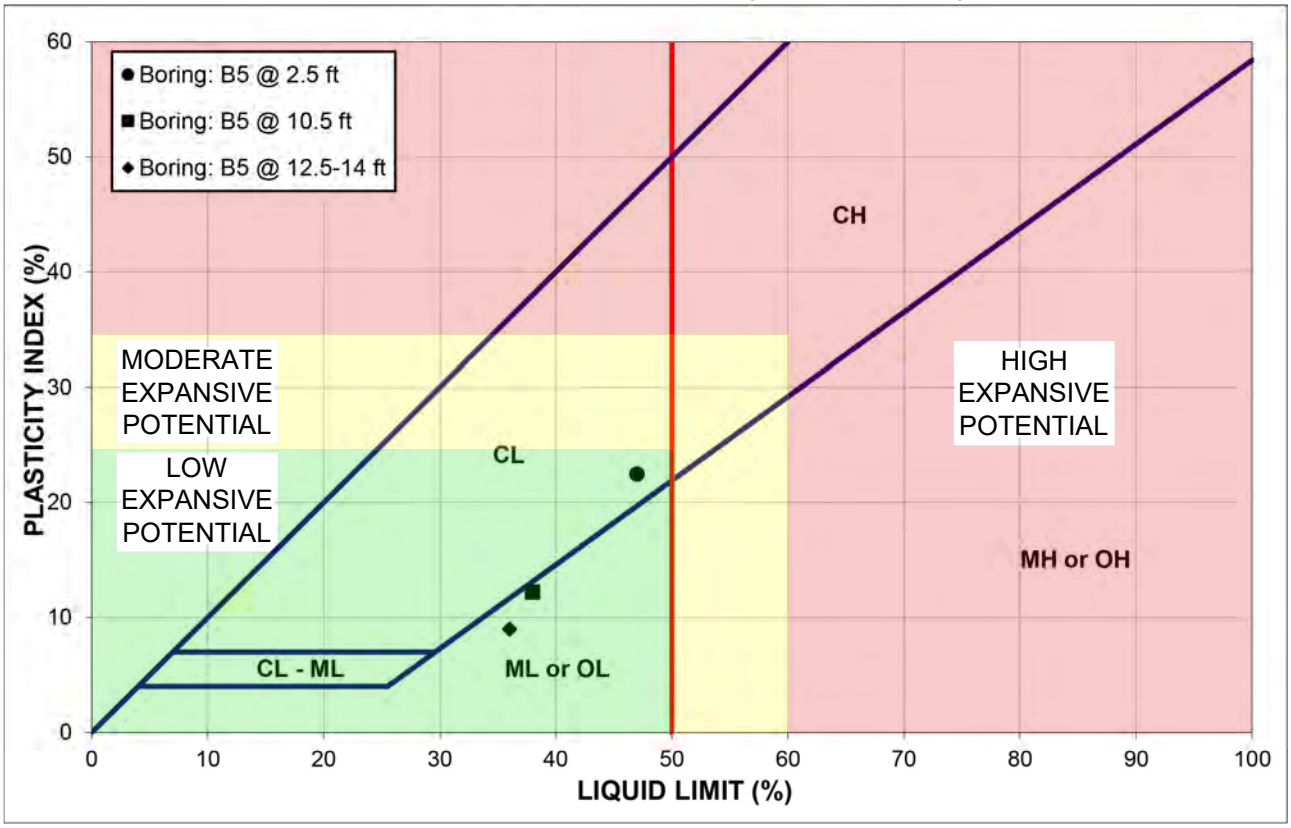
Project No. 1079.122 Date: 11/17/2025

Drawn DMS
Checked

A-19
FIGURE

MILLER PACIFIC ENGINEERING GROUP

ATTERBERG LIMITS TEST (ASTM D 4318)



Sample	Classification	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Boring: B5 @ 2.5 ft	Sandy CLAY Dark brown	47	25	22
Boring: B5 @ 10.5 ft	Sandy SILT Medium brown	38	26	12
Boring: B5 @ 12.5-14 ft	Sandy SILT Medium brown	36	27	9

PI = 0-3: Non-Plastic
PI = 3-15: Slightly Plastic
PI = 15-30: Medium Plasticity
PI = >30: High Plasticity

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ATTERBERG LIMITS TEST RESULTS

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Project No. 1079.122 Date: 11/17/2025

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Checked

A-20
FIGURE

EXPANSION INDEX (ASTM D4829)

Project Name: District Office & Education Center Tested By: BPC Date: 10/14/2025

Project Number: 1,079.122 Sample Source: B2@1.0

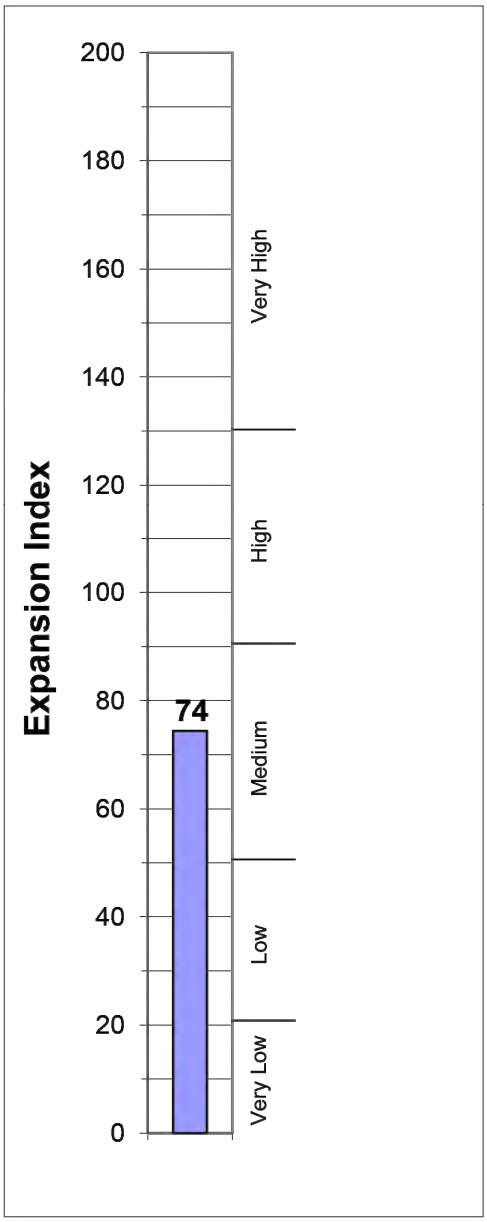
Sample Description: CLAY w/ Sand, Dark brown

Sample Height before Saturation (in.):	1.000
Sample/Ring Diameter: (in.):	4.000
Sample Volume before Saturation (cu.ft.):	0.007272
Ring Number:	EI0
Ring Tare (gm):	366.2
Weight Ring + Moist Soil (gm):	750.2
Approx. Moisture Content (%):	
Estimated Specific Gravity (2.60-2.70):	2.68
Approx. EI Dry Density (pcf):	
Approximate Saturation:	50.0%

Dial Readings with 1 psi Load:

Start Time:	10:17	Dial Reading T0:	0.0000
Time 1:	11:17	Dial Reading T1:	0.0725
Time 2:	12:50	Dial Reading T2:	0.0745
Time 3:	15:10	Dial Reading T3:	0.0757
Time 4:	1540 Wed	Dial Reading T4:	0.0779
Time 5:		Dial Reading T5:	

Final Height of Sample (in.):	1.0779
Pan Identification:	19T
Weight of Ring + Wet Soil + Pan (gm):	1245.9
Pan Tare (gm):	445.0
Weight of Ring + Dry Soil + Pan (gm):	1160.7
Initial Moisture Content:	9.9%
Initial Dry Density (pcf):	106.0
Prepared Sample Saturation:	45.7%
Percent Expansion:	7.8%
Final Moisture Content:	24.4%
Final Dry Density (pcf):	98.3
***EI*$_{50}$:**	74
Potential Expansion	Medium



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EXPANSION INDEX TEST RESULTS

Santa Rosa City Schools
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Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn DMS
Checked

A-21
FIGURE

E T S

Environmental Technical Services

-Soil, Water & Air Testing & Monitoring
-Analytical Labs
-Technical Support

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Petaluma, CA 94954
(707) 778-9605/FAX 778-9612
e-mail: *entech@pacbell.net*

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COMPANY:	Miller Pacific Engineering Group, 504 Redwood Blvd., Suite 220, Novato, CA 94947			ANALYST(S)	SUPERVISOR
ATTN:	Ben Pappas, 1360 Redwood Way, Suite B, Petaluma, CA 94954		DATE of	L. Quijano	S. Godinez
JOB NAME	Santa Rosa District Office & Education Center	DATE RECEIVED	COMPLETION	S. Santos	LAB DIRECTOR
JOB #:	1079.122 Santa Rosa, California	10/13/2025	10/22/2025		G.S. Conrad PhD

BASIC SOIL CORROSIVITY REPORT (ASTM)

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SOIL pH -log[H+]	MINIMUM AVE. RESISTIVITY Ohm-cm	ELECTRICAL CONDUCTIVITY µmhos/cm	SULFATE SO4 ppm	CHLORIDE Cl ppm
10145-1	SRDOEC1/SR	Native Soil B-B5 @ 0'-3'	**7.00**	**1,008**	**[992]**	**93**	**150**
Method	Detection	Limits --->	---	1	0.1	1	1

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SALINITY ECe dS/cm	SOLUBLE SULFIDES (S=) ppm	SOLUBLE CYANIDES (CN=) ppm	REDOX mV	PERCENT MOISTURE %
Method	Detection	Limits --->	---	0.1	0.1	1	0.1

COMMENTS

Resistivity is only >1,000 ohm-cm, i.e., very low, soil reaction (i.e., pH) is neutral (@ ~7.0); sulfate is low enough (@ <200 ppm), but chloride is mildly elevated (@ >100 ppm). The CalTrans (CT) times to perforation of galvanized steel and the full depth pitting times (following Uhlig) for otherwise unprotected steel in this soil are determined based on the pertinent parameters [see table at left below]. Sulfate should not have any adverse impact on concrete, cement, mortar or grout; but chloride could have some mild adverse impact on rebar or buried steel over the long term. Based on these parameters, a point range for this soil can be determined [see table below on right]. Lime or mild cement (@ 1%-2%) treatment to raise soil pH potentially could be of some advantage. To improve metals longevity any more in this soil would require steel upgrading or other actions. At times, structural strength considerations may require heavier gauge steel than is used in the presented examples such that perforation and pitting times can be beyond the specified life span. But where this is not the case, then cathodic protection along with coating or wrapping steel assets is one potential solution. Other potential options can include include increased or specialized engineering fill, use of a polymer coating, or use of plastic, fiberglass or concrete assets. Based on these results, soil remediation actions and/or upgrading of construction materials would be prudent since Rs is quite low and the potential maximum total points exceed the base limit (of 10). Also, other considerations may be important, e.g. often specifications call for somewhat greater Rs value (i.e., Rs @ ≥2,000 or ≥3,000 ohm-cm), and/or other requirements can come into play, e.g. soil moisture, etc.

SAMPLE ID	CT 18 ga	CT 12 ga	2 mm (Uhlig)
SRDOEC1/SR	>17 yrs	~38 yrs	~ yrs
treated	~25 yrs	~55 yrs	~ yrs

PARAMETER/ID	SRDOEC1/SR
pH	Ø
Rs	6-10
SO4	Ø
Cl	Ø-3
Redox	-
TOTAL POINTS	6-13

\\\\NOTES: Methods are from following sources: extractions by Cal Trans protocols as per Cal Test 417 (SO4), 422 (Cl), and 643 (pH & resistivity); &/or by ASTM Vol. 4.08 & ASTM Vol. 11.01 (=EPA Methods of Chemical Analysis, or Standard Methods): pH - ASTM G51; Spec. Cond. - ASTM D1125; resistivity - ASTM G187; redox - Pt probe/ISE; sulfate - extraction Title 22, and detection ASTM D516 (=EPA 375.4); chloride - extraction Title 22, detection ASTM D512 (=EPA 325.3); soluble sulfides - extraction by Title 22, and detection EPA 376.2 (= SMEWW 4500-S D); cyanides - extraction by Title 22, and detection by ASTM D4374 (=EPA 335.2).

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CORROSION RESISTANCE TEST RESULTS

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District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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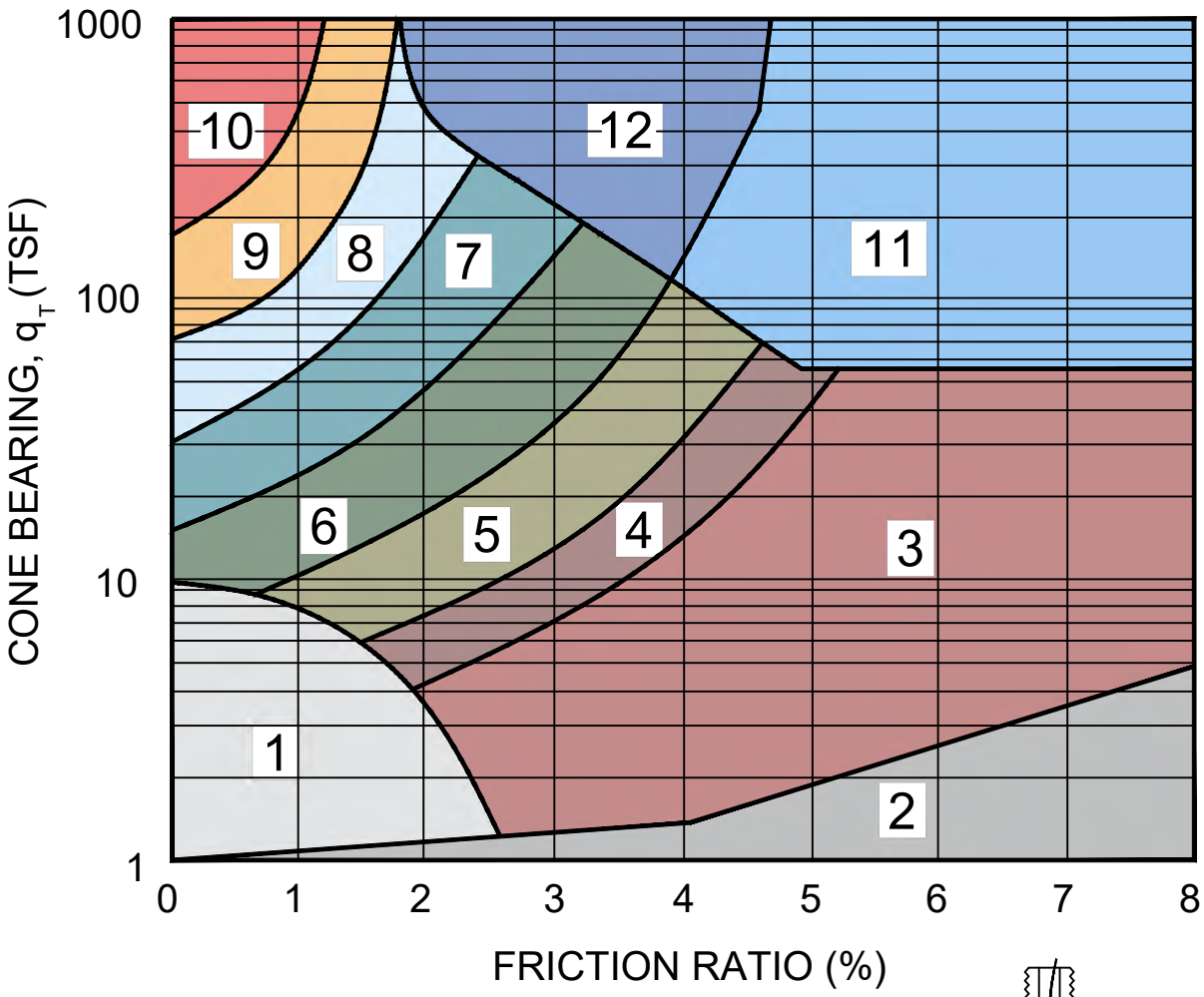
A-22
FIGURE

APPENDIX B
CONE PENETRATION TESTING

We performed seven Cone Penetration Tests (CPT) on September 22nd and 23rd, 2025, at the approximate locations shown on the Site Plan, Figure 2. The CPT is a special exploration technique that provides a continuous profile of data throughout the depth of exploration. It is particularly useful in defining stratigraphy, relative soil strength and in assessing liquefaction potential.

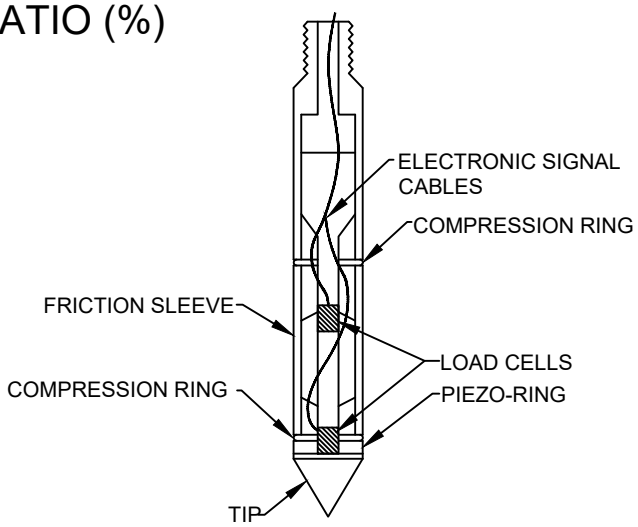
The CPT is a cylindrical probe, 35 mm in diameter, which is pushed into the ground at a constant rate of 2 cm/sec. The device is illustrated on Figure B-1. It is instrumented to obtain continuous measurements of cone bearing (tip resistance), sleeve friction and pore water pressure using strain gages and load cells inside the probe. Electronic signals from the probe are continuously recorded by an on-board computer at the surface, which permits an initial evaluation of subsurface conditions during the exploration. CPT exploration was performed by Middle Earth Geo-Testing of Orange, California, using a truck-mounted 25-ton capacity probe.

The recorded field data is transferred to an in-office computer for reduction and analysis. The analysis of cone bearing and sleeve friction (i.e., friction ratio) indicates the soil type, the cone bearing alone indicates soil density or strength, and the pore pressure indicates the presence of clay. Variations in the data profile indicate changes in stratigraphy. This test method has been standardized and is described in detail by the ASTM Standard Test Method D3441 "Deep, Quasi-Static Cone and Friction Cone Penetration Tests of Soil." A CPT soil interpretation chart is shown on Figure B-1, and the CPT data logs are presented on Figures B-2 through B-8.



Zone:	Qc/N	Soil Behavior Type:
1)	2	Sensitive Fine Grained
2)	1	Organic Material
3)	1	Clay
4)	1.5	Silty Clay to Clay
5)	2	Clayey Silt to Silty Clay
6)	2.5	Sandy Silt to Clayey Silt
7)	3	Silty Sand to Sandy Silt
8)	4	Sand to Silty Sand
9)	5	Sand
10)	6	Gravelly Sand to Sand
11)	1	Very Stiff Fine Grained (*)
12)	2	Sand to Clayey Sand (*)

(*) Overconsolidated or Cemented



CONE PENETROMETER

(NO SCALE)

Reference: Robertson, P.K. (1986), "In-Situ Testing and Its Application to Geotechnical Engineering," Canadian Geotechnical Journal, Vol. 23; No. 23; No. 4, pp. 573-594

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CPT SOIL INTERPRETATION CHART

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District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

B-1
FIGURE

Miller Pacific Engineering Inc.

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-01

Total depth: 79.40 ft, Date: 9/22/2025

Est. GWL: 12.40 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

CPeT-IT v.3.9.5.6 - CPTU data presentation & interpretation software - Report created on: 9/30/2025, 12:45:52 PM

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CPT-01 DATA PLOTS

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Santa Rosa, California

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Date: 11/17/2025

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B-2
FIGURE

Miller Pacific Engineering Inc.

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-02

Total depth: 50.52 ft, Date: 9/22/2025

Est. GWL: 12.00 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

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Project No. 1079.122

Date: 11/17/2025

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CPT-02 DATA PLOTS

B-3

FIGURE

Miller Pacific Engineering Inc.

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-03

Total depth: 50.36 ft, Date: 9/22/2025

Est. GWL: 10.10 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

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CPT-03 DATA PLOTS

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Date: 11/17/2025

Drawn CMS
Checked

B-4
FIGURE

Miller Pacific Engineering Inc.

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-04

Total depth: 77.26 ft, Date: 9/22/2025

Est. GWL: 11.00 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

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CPT-04 DATA PLOTS

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Drawn CMS
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B-5
FIGURE

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-05

Total depth: 50.52 ft, Date: 9/22/2025

Est. GWL: 13.20 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

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CPT-05 DATA PLOTS

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Date: 11/17/2025

Drawn CMS
Checked

B-6
FIGURE

Miller Pacific Engineering Inc.

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Project: SRCS New District Office

Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-06

Total depth: 50.52 ft, Date: 9/22/2025

Est. GWL: 10.00 ft

Cone Type: 15cm²

Cone Operator: BH-AJ

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CPT-06 DATA PLOTS

B-7
FIGURE

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District Office Building
Santa Rosa, California

CPT-07 DATA PLOTS

B-8
FIGURE

Middle Earth Geo Testing Inc.

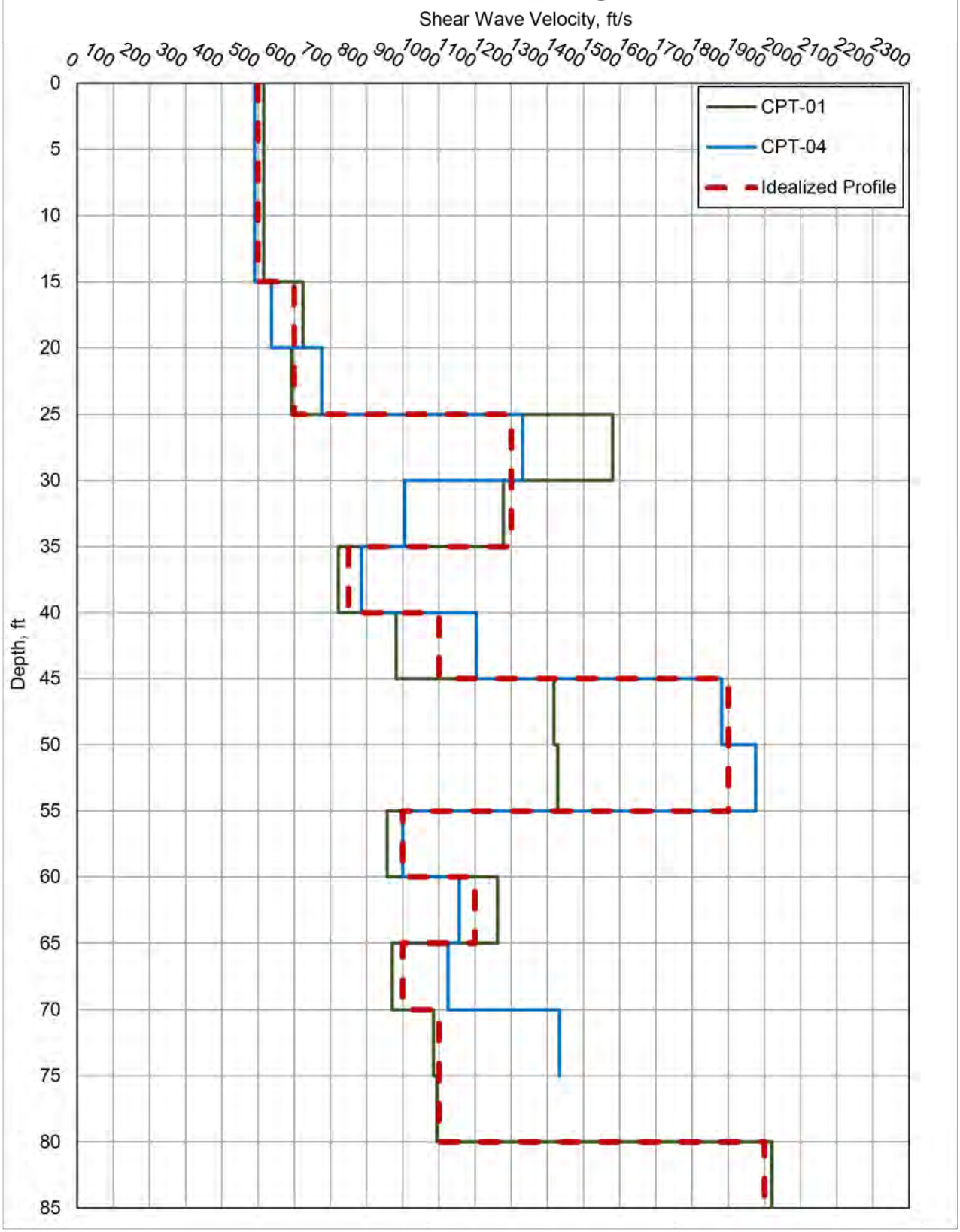
Miller Pacific Engineering Inc.

https://www.millerpac.com/

Project: SRCS New District Office
Location: 211 Ridgway Ave, Santa Rosa, CA 95401

CPT: CPT-07
Total depth: 81.04 ft, Date: 9/22/2025
Est. GWL: 12.20 ft
Cone Type: 15cm²
Cone Operator: BH-AJ

Shear Wave Velocity (V_S) Profile



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SHEAR WAVE VELOCITY PROFILE

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Project No. 1079.122 Date: 11/17/2025

Drawn CMS
Checked

B-9
FIGURE

APPENDIX C
SEISMIC REFRACTION SURVEY ANALYSIS

Line 1 and Line 2 Shear-Wave Velocity Report
SRCS Terēan VsSurf ReMi® 2.1 Software

Line 2 Results

Vs100:	**865 ft/s**
ASCE 7-16 Site Class:	D
ASCE 7-22 Site Class:	D
Depth:	**115 ft**

Survey Parameters Line 1

Geophone Count:	24
Geophone Spacing:	5 ft
Array Length:	115 ft

Survey Parameters Line 2

Geophone Count:	24
Geophone Spacing:	10 ft
Array Length:	230 ft

Performed By:	Miller Pacific
Analysis By:	Aasha Pancha

Narrative

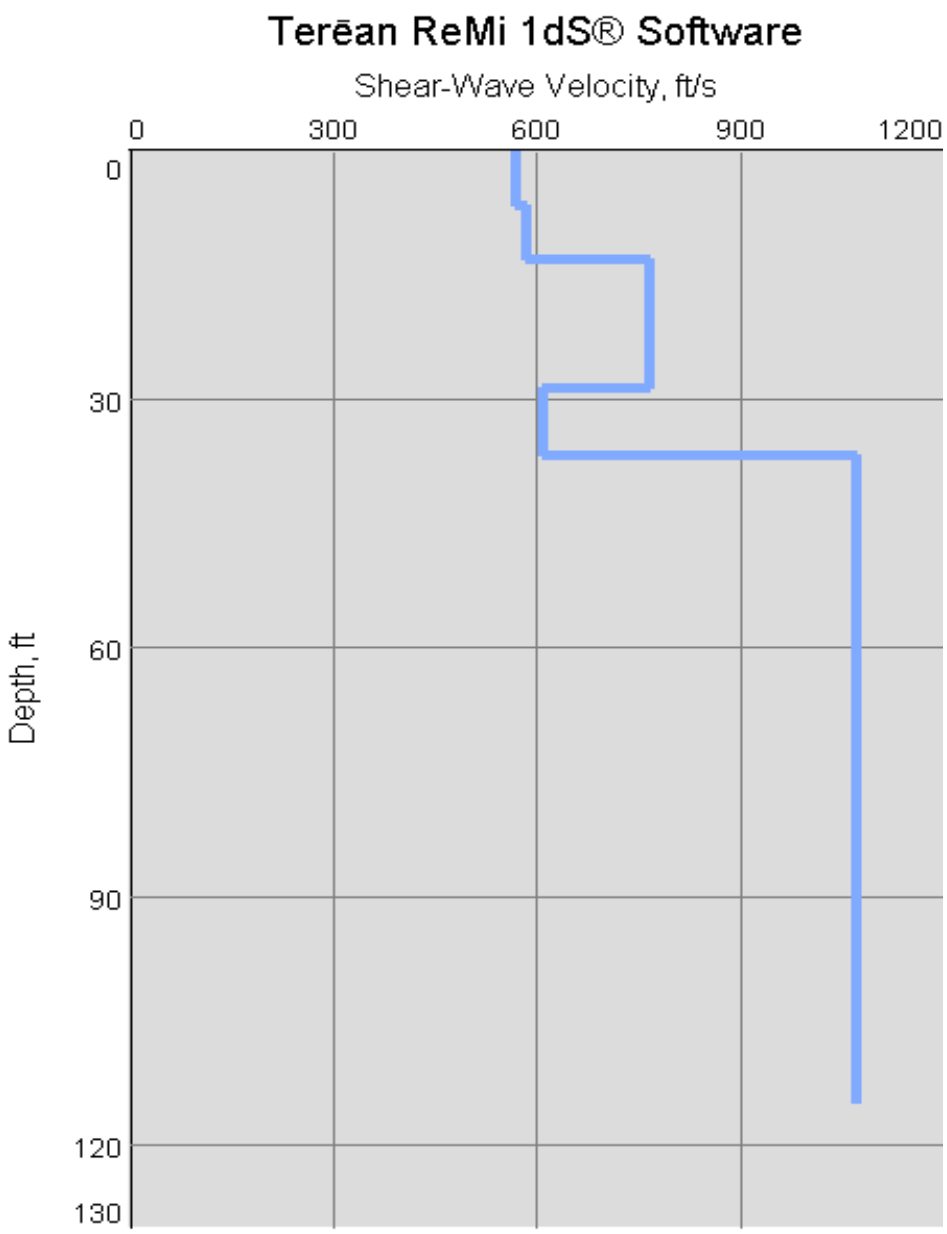
SHEAR WAVE VELOCITIES AND SEISMIC SITE CLASS

Miller Pacific's geophysical site evaluation included subsurface seismic imaging and earthquake ground shaking potential evaluation using Terēan's VsSurf ReMi® seismic data processing software. Seismic surveys were performed to determine depth to bedrock and the seismic site class per ASCE 7-16 using the weighted-average soil shear wave velocity for the upper 100 feet (Vs100). Two survey lines, Line 1 and line 2 s were performed by recording active and/or ambient (passive) seismic sources. The seismic recording array for these surveys consisted of 24, 4.5 Hz geophones with 10 ft spacing along Line 2, for a total survey length of 230 feet. Line 1 was acquires using 5 ft spacing between geophones for a total survey length of 115 feet. Noise was generated by hammer strikes during data acquisition while ambient noise was generated from traffic along the nearby roads. The seismic data were acquired using a ReMiDAQ® 5-24 seismograph, while data was processed using Terēan's ReMi® software (terean.com/products). Survey results for Line 2 indicate a weighted-average soil shear wave velocity of the upper 100 feet (Vs100) of 865 ft/s. This results in a designation of a Seismic Site Class D according to Table ASCE 7-16 and ASCE 7-22.

Line 1 and Line 2
SRCS

Shear-Wave Velocity Report
Terēan VsSurf ReMi® 2.1 Software

Depth (ft)	Vs (ft/s)
0.0	568
6.4	568
6.4	586
13.0	586
13.0	766
28.5	766
28.5	608
36.6	608
36.6	1,070
114.8	1,070



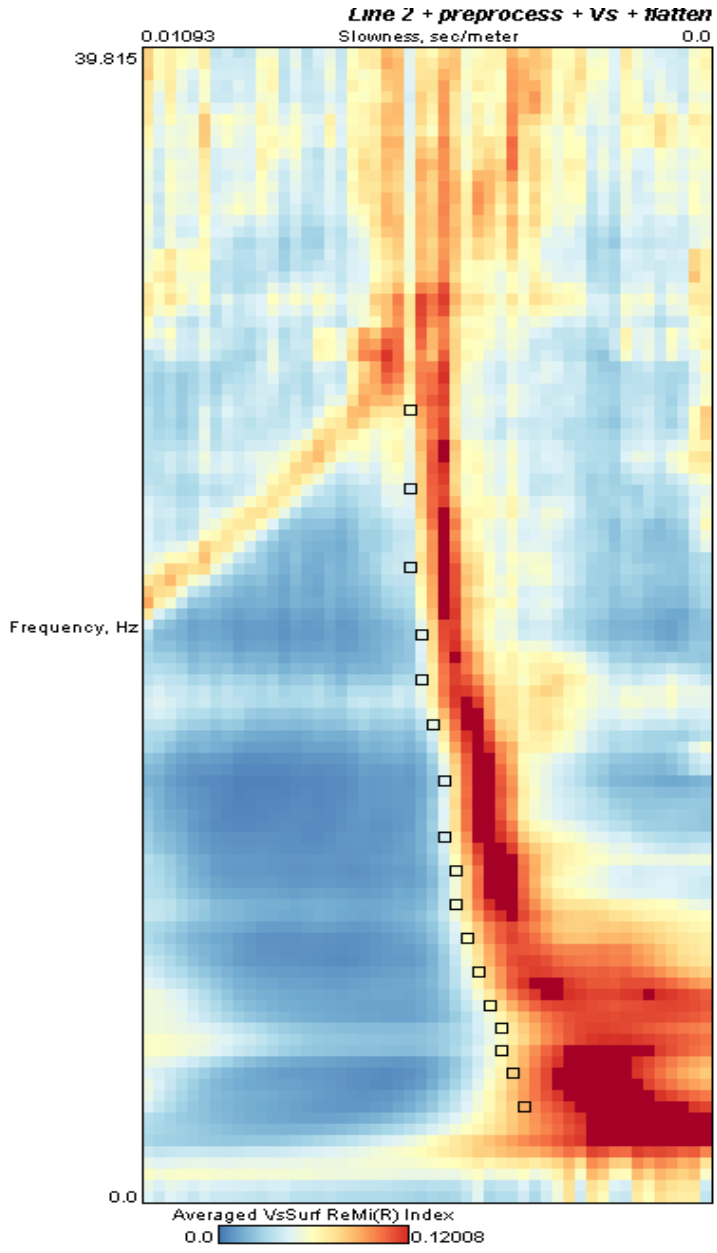
Line 1 and Line 2
SRCS

Shear-Wave Velocity Report

Terēan VsSurf ReMi® 2.1 Software

Frequency (Hz)	Slowness (s/m)
27.445	0.00590
24.739	0.00590
22.033	0.00590
19.714	0.00568
16.621	0.00546
14.689	0.00524
12.756	0.00524
11.596	0.00503
18.168	0.00568
4.639	0.00393
6.958	0.00437
8.118	0.00459
9.277	0.00481
10.437	0.00503
3.479	0.00371
6.185	0.00415
5.412	0.00415

Seismic File:
Pre-Processing:
Surveyed Geophones: No
Max Frequency, Hz: 40
Min Velocity, m/s: 91



Terēan ReMi® 2dS Analysis and Results
Miller Pacific collected two 24-channel seismic lines at the SRCS site, and Terēan performed two-dimensional S-wave analysis on both lines. The 2D modelling results were based on results from the 1D analysis presented above.

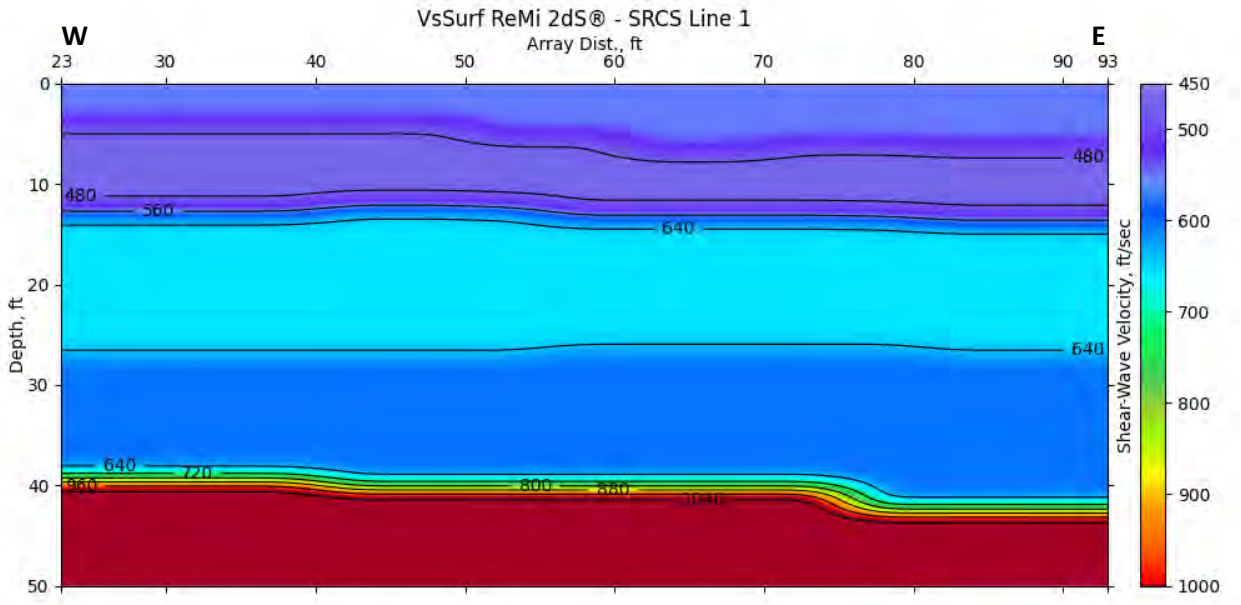
S-wave ReMi® Results

Line 1 (W-E, 5 ft spacing):

The two-dimensional shear-wave velocity (Vs) model along Line 1 indicates a generally stratified subsurface that can be represented by a five-layer structure.

The uppermost layer, immediately beneath the surface, is approximately 4 to 7 ft thick and exhibits velocities around Vs ≈ 550 ft/s. Beneath this, a slightly lower-velocity layer (Vs ≈ 470 ft/s, shown in purple) extends 6.5 to 9 ft in thickness across the array. The third layer is characterized by Vs ≈ 655 ft/s (light blue) and has an average thickness of 13-14 ft. Below this, the fourth layer exhibits velocities of Vs ≈ 605 ft/s (blue), continuing to approximately 40 ft depth.

The base of the model is defined by a pronounced higher-velocity interface, where Vs exceeds 1,000 ft/s (dark red). This boundary occurs at roughly 40 ft depth along most of the array but deepens slightly to ~43 ft toward the eastern end (75 ft array distance).

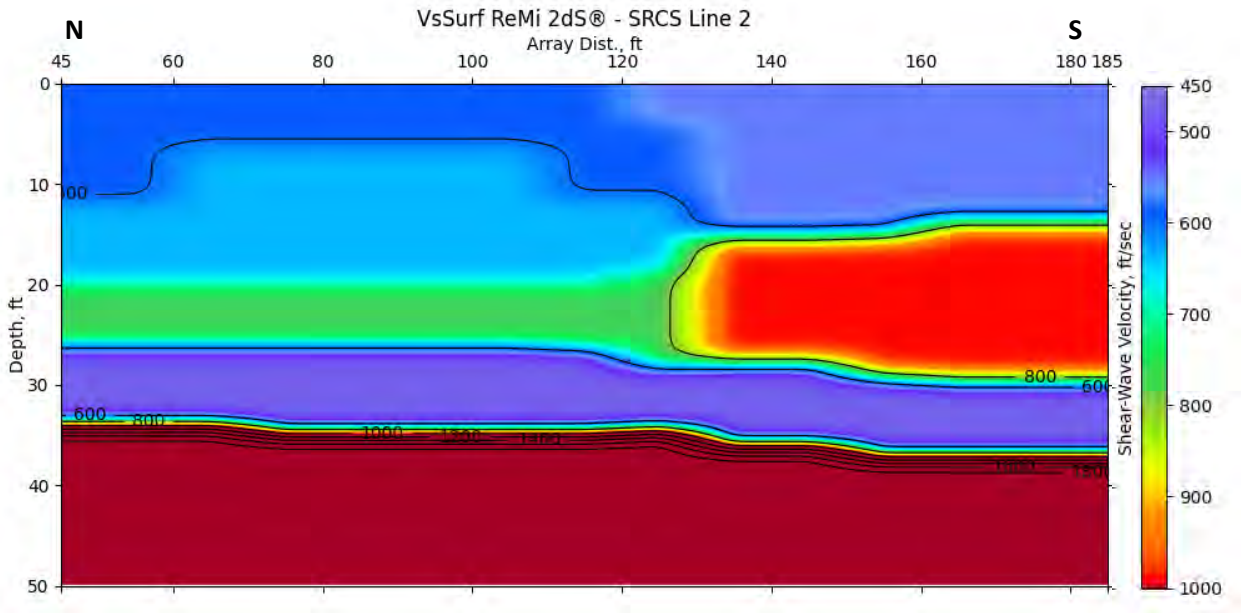


Line 2 (N-S, 10 ft spacing):

The velocity structure along Line 2 exhibits greater lateral variability and can be summarized by four principal layers. The uppermost layer ranges between 500 ft/s < Vs ≤ 650 ft/s and is approximately 20 ft thick from 20 ft to 120 ft array distance, thinning to 14-15 ft between 135 ft and 185 ft.

The second layer is defined by velocities of 750 ft/s ≤ Vs < 800 ft/s (green) between 45 ft and 135 ft, averaging ~6 ft thick. Toward the southern portion of the line (135-185 ft), the velocity increases to 950–1,000 ft/s (red) while the layer thickens to 12-15 ft. Beneath this, a third layer of Vs ≈ 475 ft/s extends 6.5-9 ft thick, representing a localized lower-velocity zone.

The base of the model is marked by a strong interface where Vs ranges between 1,500 ft/s and 2,000 ft/s (dark red). This interface occurs near 35 ft depth at the northern end of the array and gradually deepens to ~38 ft toward the southern end.



APPENDIX D
RISK TARGETED MAXIMUM CONSIDERED
EARTHQUAKE (MCE_R) GROUND MOTION HAZARD ANALYSIS

The ASCE 7-16 mapped spectral acceleration parameters at a period of 0.2-second, S_S, and 1.0-second, S_1, at the project site are above these values. Per ASCE 7-16 Table 11.4-1 a Site-Specific Ground Motion shall be developed per Section 11.4.8 for S_S values greater than 1.0 g for Site Class E sites and all cases for Site Class F sites. Additionally, a Site-Specific Ground Motion Hazard Analysis shall be performed per ASCE 7-16 Section 11.4.8 if the S_1 value is greater than 0.20 g for Site Class D, greater than 1.0 g for Site Class E, and all cases for Site Class F. Therefore, per ASCE 7-16 Section 11.4.8, we performed a Site-Specific Ground Motion Hazard Analysis per ASCE 7-16 Section 21.2, as described in the sections below.

Probabilistic (MCE_R) Ground Motions: Method 1

A probabilistic acceleration response spectrum, corresponding to a 2% chance of exceedance in 50-years (2,475 return period) was generated utilizing the United States Geologic Survey (USGS) online Unified Hazard Tool (https://earthquake.usgs.gov/hazards/interactive/, accessed 2023) for a Site Class D (V_{S30} = 260 m/s) soil profile and the Dynamic: Conterminous U.S. 2014 (v4.2.0) model. The accelerations given were modified by the risk coefficients C_{RS} and C_{R1}, 0.91 and 0.89, respectively. The accelerations were further converted to the probabilistic spectral response acceleration in the maximum horizontal response utilizing the procedures outlined by Shahi and Baker, 2013. These modifications to the probabilistic spectra correspond to a response with a risk targeted level of 1% probability of collapse within a 50-year period. The resulting probabilistic MCE_R values and spectra are presented on Figures D-1 through D-3.

Deterministic (MCE_R) Ground Motions

A deterministic acceleration response spectrum was generated utilizing the NGA attenuation models outlined by Abrahamson, Silva & Kamai (2014); Boore, Stewart, Seyhan & Atkinson (2014); Campbell & Borzognia (2014); and Chiou & Youngs (2014) NGA2 West models for both a Site Class D. The geometric average of the 84^{th} percentile spectral accelerations from the aforementioned attenuation relationships were modified for the probabilistic spectral response acceleration in the maximum horizontal direction, utilizing the procedures outlined by Shahi and Baker, 2013. The resulting deterministic MCE_R values and spectra are shown on Figures D-1 through D-3. The deterministic MCE_R spectra shall not be less than the Lower Limit Deterministic MCE_R Response Spectrum, as described in ASCE 7-16 Figure 21.2-1 which is tabulated and plotted on Figures D-1 through D-3.

Site Specific MCE_R

The site specific MCE_R spectral response acceleration at any period shall be taken as the lesser of the response accelerations from the probabilistic ground motions and the deterministic ground motions and is presented on Figure D-4. Additionally, per ASCE 7-16 Section 21.3, the design spectral response acceleration at any period is equal to $2/3^{rds}$ the MCE_R Response Spectrum, as shown on Figure D-4. Per ASCE 7-16 Section 21.4, the MCE_R spectral response acceleration parameters shall be taken from the Site-Specific Spectrum defined as follows and are presented on Figure D-4:

- S_{DS} – The S_{DS} parameter shall be taken as 90% of the maximum spectral acceleration, S_a, obtained from the site-specific spectrum, at any period between 0.2 and 5.0-seconds. However, the values obtained shall not be less than 80% of the values determined in accordance with ASCE 7-16 Section 11.4.5.
- S_{D1} – The S_{D1} parameter shall be taken as the maximum value of the product, TS_a, for periods between 1.0 and 2.0-seconds for Site Class C and B sites; and periods between 1.0 and 5.0-seconds for Site Class D, E & F sites. However, the values obtained shall not be less than 80% of the values determined in accordance with ASCE 7-16 Section 11.4.5.
- S_{MS} – The S_{MS} parameter is equal to 1.5 times the S_{DS} value, but not less than 80% of the values determined in accordance with ASCE 7-16 Section 11.4.4.
- S_{M1} – The S_{M1} parameter is equal to 1.5 times the S_{D1} value, but not less than 80% of the values determined in accordance with ASCE 7-16 Section 11.4.4.

ASCE 7-16
SITE SPECIFIC RISK-TARGETED
MAXIMUM CONSIDERED EARTHQUAKE (MCE_R)

MCE_R CANDIDATE SPECTRA COORDINATES

Project Name: SRCS - District Office
Project Numb: 1079.122

Latitude: 38.4497
Longitude: -122.7240

General Seismic Parameters
ASCE 7-16 Section 11.4

Site Class:	D
S_S (g):	2.20
S_1 (g):	0.85
F_a:	1.00
F_v:	1.70
T_L (sec):	8.0
C_{RS}:	0.91
C_{R1}:	0.89
S_{MS} (g):	2.20
S_{M1} (g):	2.17
S_{DS} (g):	1.47
S_{D1} (g):	1.45

Min. Design Spectra Param.
ASCE 7-16 Section 21.3

Site Class:	D
S_S (g):	2.20
S_1 (g):	0.85
F_a:	1.00
F_v:	2.50
T_0 (sec):	0.19
T_S (sec):	0.97
S_{MS} (g):	2.20
S_{M1} (g):	2.13
S_{DS} (g):	1.47
S_{D1} (g):	1.42

Deterministic MCE Screening
ASCE 7-16 (Sup #1) 21.2.3

Fa:	1.00
1.2 x Fa (g):	1.20
Max PSHA (g):	2.66
DSHA Rqd.:	**YES**

Exception: Per ASCE 7-16 Supplement 3
Ground Motion Hazard Analysis is not required if:
1. SM1 values have been increased by 50% and utilized to calculate SD1.

Note: The SM1 value listed on this spreadsheet has been increased by 50%.

Min. Deterministic MCE
ASCE 7-16 (Sup #1) 21.2.2

Fa:	1.00
1.5 x Fa (g):	1.50
Max DSHA (g):	2.55
Min MCE Rqd.:	**NO**

Probabilistic MCE
ASCE 7-16 Section 21.2.1 - Method 1

Period (sec)	Sa_{RotD50} (g)	$Sa_{RotD100}$ / Sa_{RotD50}	$Sa_{RotD100}$ (g)	C_R	Sa (g)
0.01	0.99	1.10	1.09	0.910	1.00
0.10	1.58	1.10	1.74	0.910	1.58
0.20	2.11	1.10	2.32	0.910	2.11
0.30	2.44	1.13	2.75	0.908	2.49
0.50	2.51	1.18	2.95	0.903	2.66
0.75	2.17	1.24	2.68	0.896	2.40
1.00	1.85	1.30	2.40	0.890	2.13
2.00	1.05	1.35	1.41	0.890	1.26
3.00	0.69	1.40	0.96	0.890	0.86
4.00	0.47	1.45	0.69	0.890	0.61
5.00	0.35	1.50	0.52	0.890	0.47

Deterministic MCE
NGA West2 2014 - 84th Percentile

Period (sec)	Sa_{RotD50} (g)	$Sa_{RotD100}$ / Sa_{RotD50}	$Sa_{RotD100}$ (g)
0.01	0.83	1.10	0.92
0.02	0.84	1.10	0.92
0.03	0.84	1.10	0.92
0.05	0.90	1.10	1.00
0.08	1.05	1.10	1.15
0.10	1.19	1.10	1.31
0.15	1.42	1.10	1.57
0.20	1.61	1.10	1.77
0.25	1.80	1.11	2.00
0.30	1.97	1.13	2.21
0.40	2.14	1.15	2.46
0.50	2.17	1.18	2.55
0.75	1.95	1.24	2.41
1.00	1.75	1.30	2.27
1.50	1.35	1.33	1.79
2.00	1.06	1.35	1.43
3.00	0.73	1.40	1.03
4.00	0.51	1.45	0.75
5.00	0.38	1.50	0.56
7.50	0.18	1.50	0.27
10.00	0.10	1.50	0.15

Scaled Deterministic MCE
ASCE 7-16 (Sup #1) 21.2.2

Period (sec)	Sa (g)
0.01	0.54
0.02	0.54
0.03	0.54
0.05	0.59
0.08	0.68
0.10	0.77
0.15	0.92
0.20	1.04
0.25	1.18
0.30	1.31
0.40	1.45
0.50	1.50
0.75	1.42
1.00	1.34
1.50	1.05
2.00	0.84
3.00	0.60
4.00	0.44
5.00	0.33
7.50	0.16
10.00	0.09

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ASCE 7-16 MCEr CALCULATIONS

Santa Rosa City Schools
District Office Building
Santa Rosa, California
Project No. 1079.122 Date: 11/17/2025

Drawn BSP
Checked

D-1
FIGURE

ASCE 7-16
SITE SPECIFIC RISK-TARGETED
MAXIMUM CONSIDERED EARTHQUAKE (MCE_R)

SITE SPECIFIC MCE_R SPECTRA COORDINATES

Project Name: SRCS - District Office
Project Numb: 1079.122

Latitude: 38.4497
Longitude: -122.7240

Site Specific MCE_R
ASCE 7-16 Section 21.2.3

Period (sec)	Sa (g)
0.01	0.92
0.02	0.92
0.03	0.92
0.05	1.00
0.08	1.15
0.10	1.31
0.15	1.57
0.20	1.77
0.25	2.00
0.30	2.21
0.40	2.46
0.50	2.55
0.75	2.41
1.00	2.13
2.00	1.26
3.00	0.86
4.00	0.61
5.00	0.47

Site-Specific Design Spectrum
ASCE 7-16 Section 21.3

Period (sec)	Sa (g)
0.01	0.61
0.02	0.61
0.03	0.61
0.05	0.66
0.08	0.77
0.10	0.88
0.15	1.04
0.20	1.18
0.25	1.33
0.30	1.48
0.40	1.64
0.50	1.70
0.75	1.61
1.00	1.42
2.00	0.84
3.00	0.57
4.00	0.41
5.00	0.31

80% General Response Spectrum
ASCE 7-16 Section 21.3

	Period (sec)	Sa (g)	80% Sa (g)
	0.01	0.63	0.51
	0.04	0.77	0.62
	0.07	0.91	0.73
	0.10	1.05	0.84
	0.13	1.19	0.95
	0.16	1.33	1.06
T_O =	0.19	1.47	1.17
T_S =	0.97	1.47	1.17
	1.28	1.11	0.89
	1.59	0.89	0.71
	1.90	0.75	0.60
	2.21	0.64	0.51
	2.52	0.56	0.45
	2.83	0.50	0.40
	3.14	0.45	0.36
	3.45	0.41	0.33
	3.76	0.38	0.30
	4.07	0.35	0.28
	4.38	0.32	0.26
	4.69	0.30	0.24
	5.00	0.28	0.23

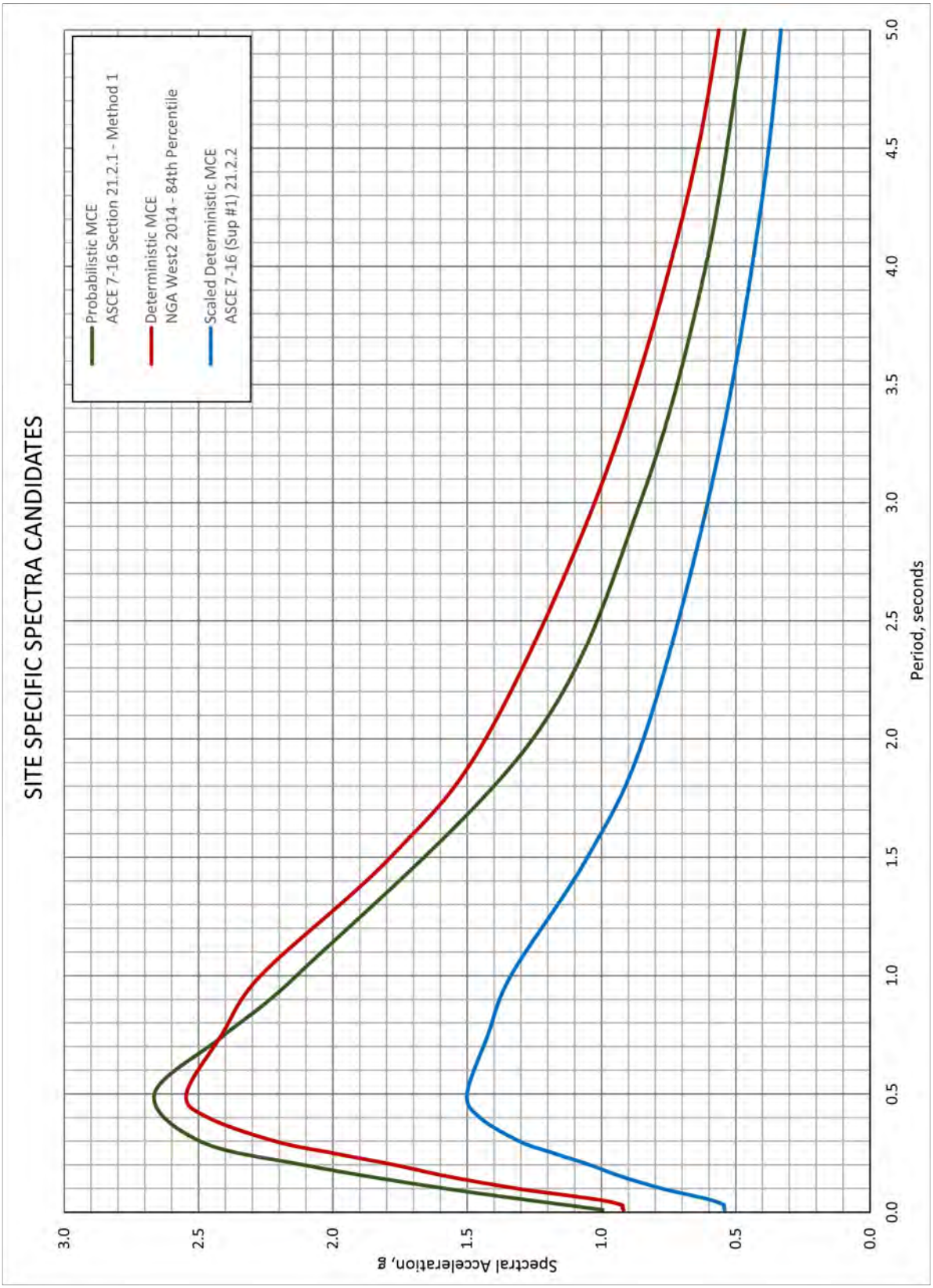
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ASCE 7-16 MCEr CALCULATIONS

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Santa Rosa, California
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Drawn BSP
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D-2
FIGURE



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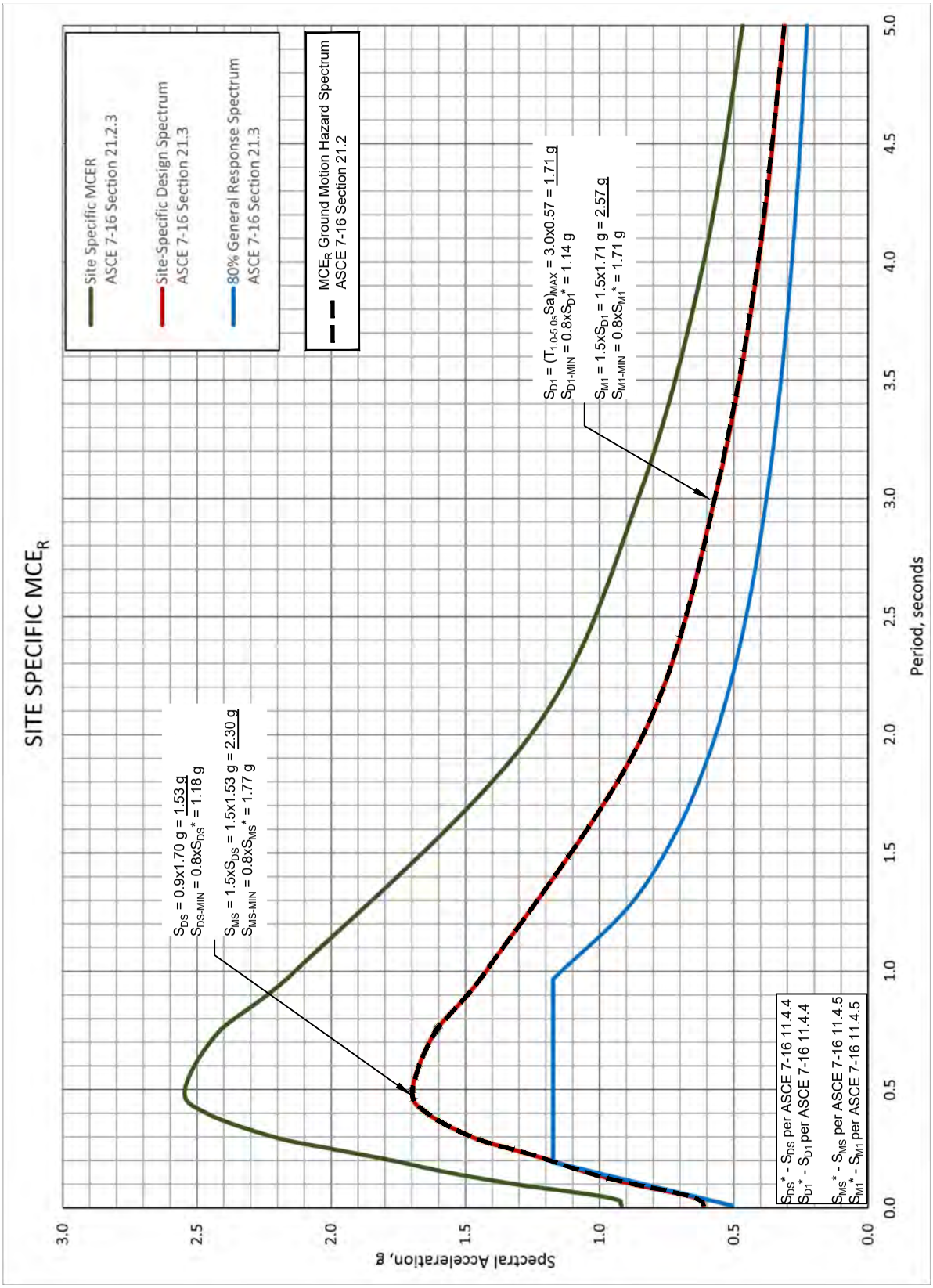
ASCE 7-16 MCEr CANDIDATE SPECTRA

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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D-3
FIGURE



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ASCE 7-16 MCEr DESIGN SPECTRUM

Santa Rosa City Schools
District Office Building
Santa Rosa, California

Project No. 1079.122 Date: 11/17/2025

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Checked

D-4
FIGURE

Appendix E

Drainage Report

Drainage Report

PRECISE GRADING

Santa Rosa Unified School District
APN: 180-470-007
Santa Rosa District Office Building Improvements

211 Ridgway Ave, Santa Rosa, CA 95401



Prepared by: DIG Engineers
2400 East Katella Ave., Suite 950
Anaheim, CA 92806
949-548-5000
Aliasghar Ghadimkhani, PhD, PE

Reviewed by: Michael Cattabiani, P.E

REGISTERED PROFESSIONAL ENGINEER
ALIASGHAR GHADIMKHANI
No. C 92459
Exp. 06\30\2027
CIVIL
STATE OF CALIFORNIA

May 2026

1. PROJECT DESCRIPTION

The Santa Rosa District Office Improvements project site comprises approximately 4.26 acres and is located at 211 Ridgway Avenue, in Santa Rosa, California (Figure 1). The project site is located approximately 830 feet north of Ridgway Avenue and 30 feet east of the alignment of Ripley Street. The project is located at 38° 26' 57.8324'' N, 122° 43' 26.7240'' W. The construction activities for this project include demolition of the existing buildings and removal of underground utilities. The proposed improvements are to construct a new two-story district office building and site improvements including walkways, utilities, landscaping, driveways, fire lanes, etc. Figure 2 shows the project site location.

Based on the County of Sonoma Watersheds map, the Santa Rosa site is located at the Russian River HU, Middle Russian River HA, Santa Rosa Creek watershed as shown in Attachment A.

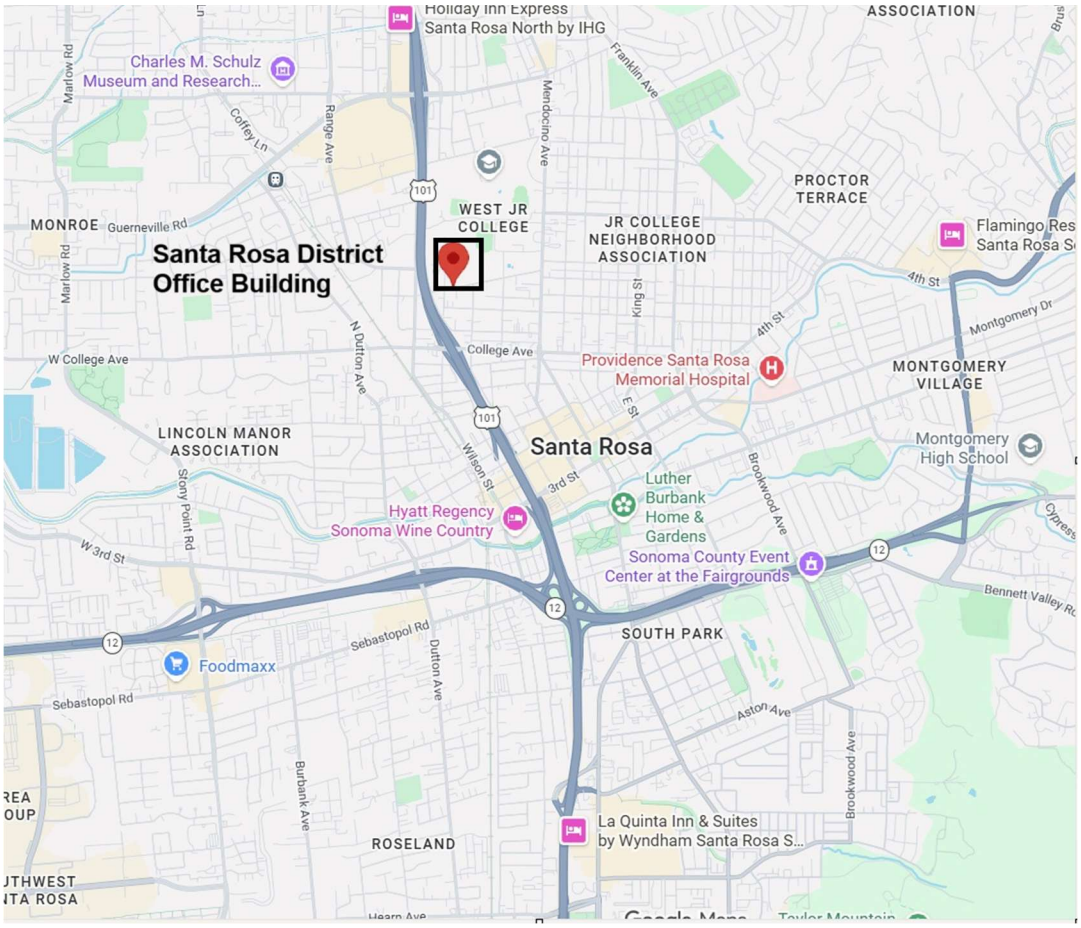


Figure 1 – Vicinity Map

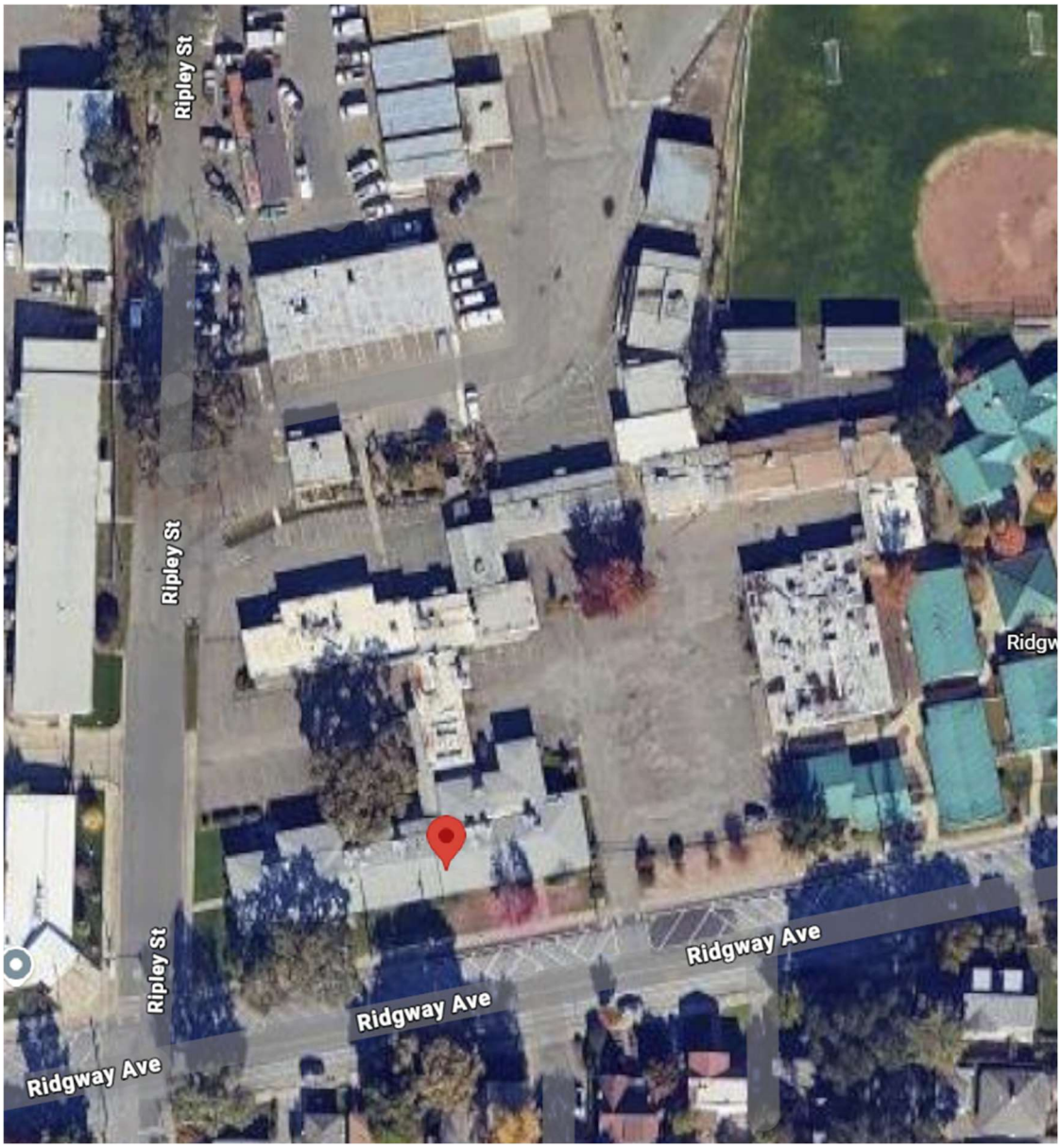


Figure 2 – Site location

2. Pre Improvement Plans

The project site is relatively flat, with existing slopes varying from 0.1% -0.5% and sloping towards the east, and south. The elevation of the project site ranges from 148.00 to 151.00 feet above mean sea level (msl). Surface drainage at the site currently flows to the west, south, and east toward a series of storm-drain grates that eventually outlet to the City Storm Drain Main at the northwest corner of the site (Ripley Street). Stormwater is conveyed through the existing 30" storm-drain pipe network and sheet flows towards off-site curb and gutter systems. Existing site topography, drainage patterns, and stormwater conveyance systems are shown in Attachment A (Pre Improvement Hydrology Drawing) and Figure 3.



Figure 3 – Existing site (demolish) plan

3. Proposed Improvements

After demolishing the existing Santa Rosa Unified School District Buildings, the proposed office building along with underground utilities will be constructed and the proposed site improvements will be completed.

All of the proposed utilities will be connected to the City of Santa Rosa utility systems. Post-construction surface drainage at the east of the site will be captured by the proposed catch basins. The rest of the post improvement site surface flow will be directed to offsite as a sheet flow (see Figure 4).



Figure 4 - Proposed Site Plan (C 101)

4. Pre- and Post- Improvement Hydrology and Hydraulics Analysis

Pre- and post-improvement storm water catchment areas are delineated based on the site topo survey, and flow data are added on the plans.

Point precipitation frequency (pf) estimates with 90% confidence intervals and supplementary information obtained from NOAA Atlas 14, Volume 6, Version 2 for this project site (https://hdsc.nws.noaa.gov/pfds/pfds_map_cont.html?bkmrk=ca) and downloaded data (Attachment C) used to calculate the existing and proposed stormwater peak runoff flow rates (See Attachment B: Pre Improvement and Post Improvement Hydrology Drawings).
City of Santa Rosa Standard Drawings used to design the proposed stormwater catch basins. The pre- and post-improvement hydrology calculations for the 10-, 25, 50, and 100- year storm events are provided in Attachment B.
Proposed storm drains are sized, and the results are provided in Attachment B.

Based on National Flood Hazard Layer (NFHL), this site is not located in the 100-year flood zone (see Attachment D).

Attachment A

Hydrology Drawings



EXHIBIT A - PRE-IMPROVEMENT HYDROLOGY DRAWING

PBK
ARCHITECT PBK Architects, Inc.
FOLSOM
1110 Iron Point Road, Suite 200
Folsom, CA 95630-8315
916-355-9922
DB CONTRACTOR ARNTZ BUILDERS, INC
CIVIL ENGINEER DIG
DIG ENGINEERS

DISTRICT OFFICE
SANTA ROSA CITY SCHOOLS
DISTRICT OFFICE
211 RIDGWAY AVE
SANTA ROSA, CA 95401
100% CONSTRUCTION DOCUMENTS

SANTA ROSA CITY SCHOOLS

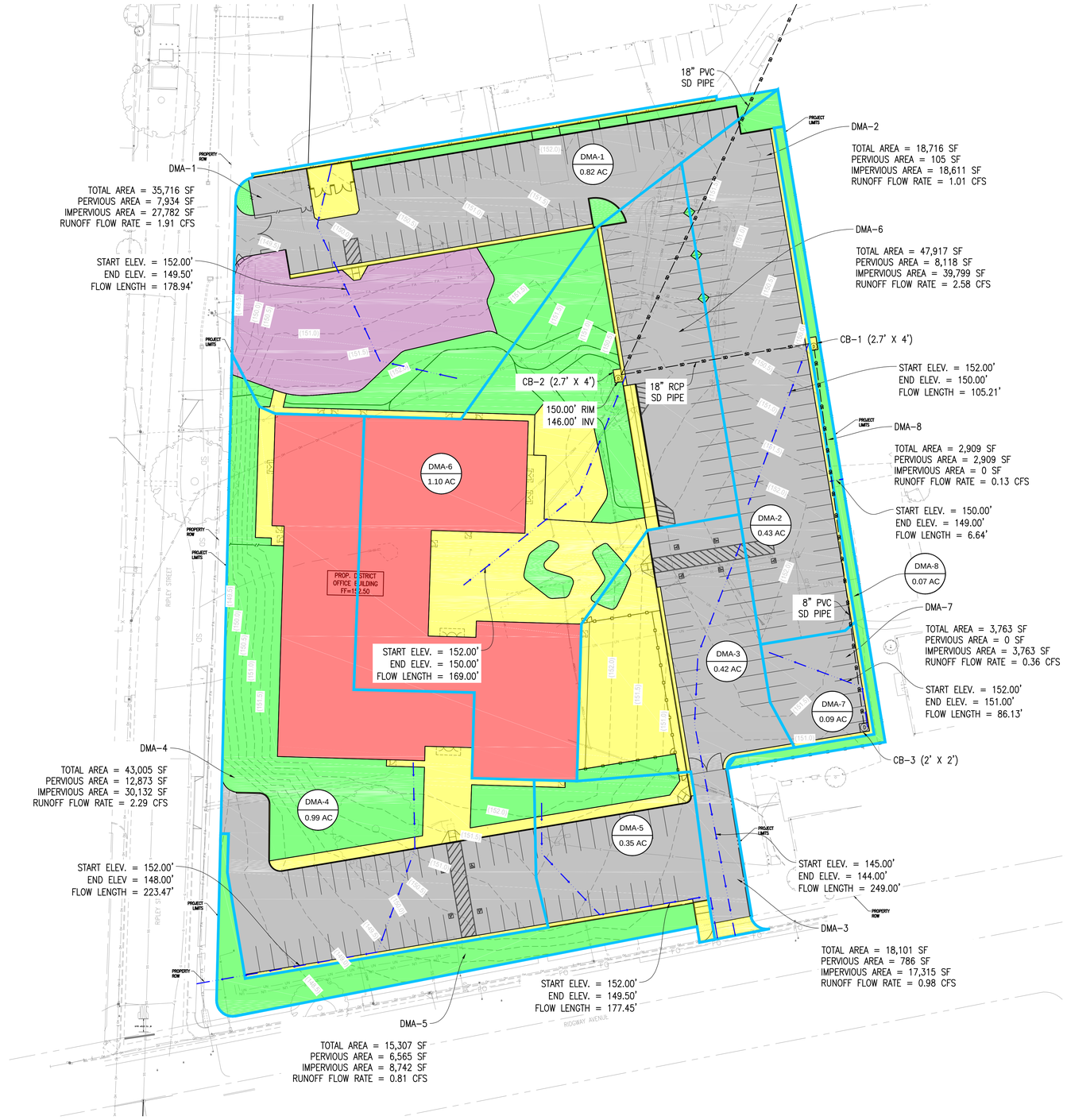
G H J
D E F
A B C
KEY PLAN

CLIENT
SANTA ROSA CITY SCHOOLS
PROJECT NUMBER
250375
DATE 05/13/26
DRAWN BY: EP CHKED BY: AG
REVISIONS

#	DESCRIPTION	DATE

100% CONSTRUCTION DOCUMENTS

U:\PBK\Houston\Projects_Civil_Project Files_Project Files_California\MISC\Santa Rosa\03 DWGS\Exhibits\SANTA ROSA EXISTING HYDROLOGY.dwg Last Saved: EMMY.PHAM
Wednesday, May 13, 2026 11:35:47 PM



NORTH

15 30
30 0 60
SCALE: 1" = 30'

LEGEND

BUILDING	0.73 AC.
SIDEWALK AND HARDSCAPE	0.62 AC.
LANDSCAPE	0.94 AC.
AC PAVEMENT	1.73 AC.
RUBBER SURFACE	0.24 AC.
CATCH BASIN	
FLOW LINE	

DMA 0.29 — DRAINAGE MANAGEMENT AREA (DMA) NAME; AREA (ACRES)

DMA-1
PERVIOUS AREA = 7,934 SF
IMPERVIOUS AREA = 27,782 SF
TOTAL AREA = 35,716 SF

DMA-2
PERVIOUS AREA = 105 SF
IMPERVIOUS AREA = 18,611 SF
TOTAL AREA = 18,716 SF

DMA-3
PERVIOUS AREA = 786 SF
IMPERVIOUS AREA = 17,315 SF
TOTAL AREA = 18,101 SF

DMA-4
PERVIOUS AREA = 12,873 SF
IMPERVIOUS AREA = 30,132 SF
TOTAL AREA = 43,005 SF

DMA-5
PERVIOUS AREA = 6,565 SF
IMPERVIOUS AREA = 8,742 SF
TOTAL AREA = 15,307 SF

DMA-6
PERVIOUS AREA = 8,118 SF
IMPERVIOUS AREA = 39,799 SF
TOTAL AREA = 47,917 SF

DMA-7
PERVIOUS AREA = 0 SF
IMPERVIOUS AREA = 3,763 SF
TOTAL AREA = 3,763 SF

DMA-8
PERVIOUS AREA = 2,909 SF
IMPERVIOUS AREA = 0 SF
TOTAL AREA = 2,909 SF

SITE
TOTAL PERVIOUS AREA = 41,837 SF
TOTAL IMPERVIOUS AREA = 143,837 SF
TOTAL AREA = 185,790 SF

EXHIBIT B - POST-IMPROVEMENT HYDROLOGY DRAWING

PBK

ARCHITECT PBK Architects, Inc.
FOLSOM
1110 Iron Point Road, Suite 200
Folsom, CA 95630-8315
916-355-9922

DB CONTRACTOR ARNTZ BUILDERS, INC

CIVIL ENGINEER DIG

DISTRICT OFFICE
SANTA ROSA CITY SCHOOLS
DISTRICT OFFICE
211 RIDGWAY AVE
SANTA ROSA, CA 95401
100% CONSTRUCTION DOCUMENTS

G H J
D E F
A B C
KEY PLAN

CLIENT
SANTA ROSA CITY SCHOOLS
PROJECT NUMBER
250375
DATE 05/13/26
DRAWN BY: EP CHKED BY: AG

REVISIONS

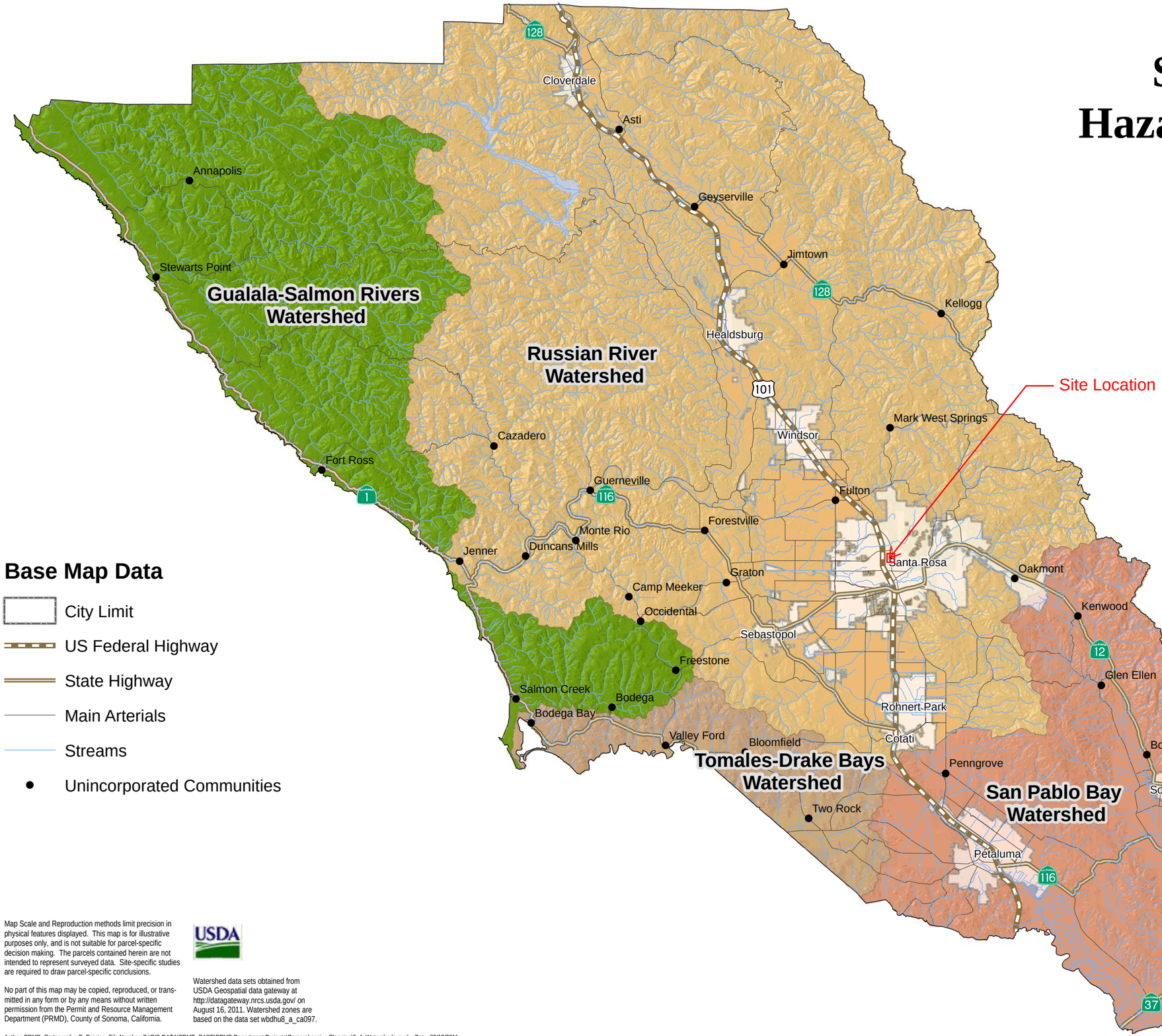
#	DESCRIPTION	DATE

100% CONSTRUCTION DOCUMENTS

U:\PBK\Houston\Projects_Civil_Project Files_Project Files_California\MISC\Santa Rosa\03 DWGS\Exhibits\SANTA ROSA PROPOSED HYDROLOGY.dwg Last Saved: EMMY.PHAM
Wednesday, May 13, 2026 1:56:24 PM

Sonoma County Hazard Mitigation Plan

Watersheds



Base Map Data

- City Limit
- US Federal Highway
- State Highway
- Main Arterials
- Streams
- Unincorporated Communities

Watershed Data

- Gualala-Salmon
- Russian
- San Pablo Bay
- Tomales-Drake Bays

0 2.5 5 Miles

1 inch equals 5 miles

Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to draw parcel-specific conclusions.

No part of this map may be copied, reproduced, or transmitted in any form or by any means without written permission from the Permit and Resource Management Department (PRMD), County of Sonoma, California.

Watershed data sets obtained from USDA Geospatial data gateway at http://datagateway.nrcs.usda.gov/ on August 16, 2011. Watershed zones are based on the data set wbdhu8_a_ca097.

County of Sonoma
Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, California 95403
707-565-1900 FAX 707-565-1103

Author: PRMD Cartography: D. Reinier File Number: S:\GIS-DATA\PRMD_BASE\PRMD Department Projects\Comprehensive Planning\8_4_Watersheds.mxd Date: 09/12/2011

Attachment B

Hydrology and Hydraulics Analysis

		Proj #:	
Client:	SANTA ROSA City Schools District	**Calculated By:**	Aliasghar Ghadimkhani
Project:	**SANTA ROSA City Schools District Office Improvements**	**Date:**	05/11/26
Detail:	Santa Rosa Precise Grading Site Runoff	**Reviewed By:**	
		Date:	

1.0 PURPOSE/ OBJECTIVE

1.1

Determine the pre and post development flows and volumes for 2-year, 10-year, 25-year, and 100-year

2.0 PROCEDURE / APPROACH

Peak Flow Calculation

2.1.1 Determine site total, impervious, and pervious areas

2.1.2 Determine length of longest flow path and difference in elevation

2.1.3 Determine Hydrologic Soil Group (HSG) and associated native infiltration rate

2.1.4 Determine time of concentration and associated 2-year rainfall intensity

2.1.5 Determine 2-year design storm peak flow rate

2.1.6 Repeat for pre-development conditions

Runoff Volume Calculation

2.2.1 Determine max loss rate (F_m)

2.2.2 Determine unit loss rate

2.2.3 Determine Mass. Rainfall amount

2.2.4 Determine unit rainfall amount

2.1.5 Determine runoff flow at any given time of concentration

2.1.6 Sum flow rate to determine total voulme for 24 hours at given storm occurrence interval

3.0 DATA & REFERENCES

3.1 Project Site Area Calculations
3.2 Time of Concentration Nomograph
3.3 Rainfall Intensity Regression Equation
3.4 Project Site Soil Map
3.5 Rainfall Depth Regression Equation
3.6 Curve Number Guidance
3.7 Native Infiltration by Hydrologic Soil Group

4.0 ASSUMPTIONS/ LIMITATIONS

4.1 2-year design storm event
4.2 24-hour storm duration for runoff volume computation
4.3 Storm duration equal to time of concentration for peak flow computation
4.4 Gravel considered pervious

5.0 CALCULATIONS

5.1 Refer to calculations tabs

6.0 CONCLUSIONS

Table 1.

	Storm	DMA-1	DMA-2	DMA-3	DMA-4	DMA-5	DMA-6	DMA-7	DMA-8	Total
6.1	**Predevelopment Flows (CFS)**									
	10-Year	1.61	0.18	0.33	0.51	2.70	2.36	0.67		8.36
	25-Year	1.91	0.21	0.39	0.61	3.21	2.81	0.80		9.93
	100-Year	2.39	0.27	0.49	0.77	4.03	3.53	1.01		12.49
6.2	**Post Development Flows (CFS)**									
	10-Year	1.61	0.86	0.83	1.93	0.68	2.17	0.17	0.13	8.25
	25-Year	1.91	1.01	0.98	2.29	0.81	2.58	0.20	0.13	9.79
	100-Year	2.41	1.27	1.23	2.89	1.02	3.24	0.26	0.20	12.30

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **10-Year Pre Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7
Total Site Area (sf)	35,179	3,991	7,550	11,525	59,938	52,592	15,015
Open Space - Poor (sf)	0	1,029	6,547	6,256	11,826	11,881	4,298
Gravel (sf)	0	0	0	0	0	0	0
Impervious Area (sf)	35179	2962	1003	5269	48112	40711	10717
Portion Impervious Area, a_i	**1.00**	**0.74**	**0.13**	**0.46**	**0.80**	**0.77**	**0.71**
Portion Pervious Area, a_p	0.00	0.26	0.87	0.54	0.20	0.23	0.29
Longest Flow Path (ft)	175.88	40.34	64.52	69.05	368.14	223	126
Start Elevation (ft)	150.00	150.00	150.00	150.00	150.50	146.00	149.01
End Elevation (ft)	149.18	149.62	149.32	149.50	147.62	143.00	148.14
Difference of Elevation (ft)	**0.82**	**0.38**	**0.68**	**0.50**	**2.88**	**3.00**	**0.87**
Time of Concentration (min)	7.50	6.70	8.50	7.50	9.50	11.50	8.50
Hydrologic Soil Group	D	D	D	D	D	D	D
Native Infiltration Rate, F_p (in/hr)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Runoff Coefficient, C	0.90	0.89	0.85	0.87	0.89	0.88	0.88
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA							
PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)	0.369	0.369	0.369	0.369	0.369	0.369	0.369
Duration (minutes) NOAA Table	10	10	10	10	10	10	10
10-Year, tc Intensity, I (in/hr)	2.214	2.214	2.214	2.214	2.214	2.214	2.214
10-yr Peak Flow Rate (CFS)	**1.61**	**0.18**	**0.33**	**0.51**	**2.70**	**2.36**	**0.67**

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **10-Year Post Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7	DMA8
Total Site Area (sf)	35,716	18,716	18,101	43,005	15,307	47,917	3,763	2,909
Open Space - Poor (sf)	7,934	105	786	12,873	6,565	8,118	0	2,909
Gravel (sf)	0	0	0	0	0	0	0	0
Impervious Area (sf)	27782	18611	17315	30132	8742	39799	3763	0
Portion Impervious Area, a_i	**0.78**	**0.99**	**0.96**	**0.70**	**0.57**	**0.83**	**1.00**	**0.00**
Portion Pervious Area, a_p	0.22	0.01	0.04	0.30	0.43	0.17	0.00	1.00
Longest Flow Path (ft)	**179**	**105**	**249**	**233**	**177**	**169**	**86**	**7**
Start Elevation (ft)	152.00	152.00	145.00	148.00	152.00	152.00	152.00	150.00
End Elevation (ft)	149.50	150.00	144.50	144.75	150.00	150.00	151.00	149.00
Difference of Elevation (ft)	**2.50**	**2.00**	**0.50**	**3.25**	**2.00**	**2.00**	**1.00**	**4.00**
Time of Concentration (min)	6.50	4.50	9.50	7.50	7.50	6.00	5.50	1.00
Hydrologic Soil Group	D	D	D	D	D	D	D	D
Runoff Coefficient, C	0.89	0.90	0.90	0.88	0.88	0.89	0.90	0.88
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA								
PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369
Duration (minutes) NOAA Table	10	10	10	10	10	10	10	10
10-Year, tc Intensity, I (in/hr)	2.214	2.214	2.214	2.214	2.214	2.214	2.214	2.214
10-yr Peak Flow Rate (CFS)	**1.61**	**0.86**	**0.83**	**1.93**	**0.68**	**2.17**	**0.17**	**0.13**

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **25-Year Pre Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7
Total Site Area (sf)	35,179	3,991	7,550	11,525	59,938	52,592	15,015
Open Space - Poor (sf)	0	1,029	6,547	6,256	11,826	11,881	4,298
Gravel (sf)	0	0	0	0	0	0	0
Impervious Area (sf)	35179	2962	1003	5269	48112	40711	10717
Portion Impervious Area, a_i	**1.00**	**0.74**	**0.13**	**0.46**	**0.80**	**0.77**	**0.71**
Portion Pervious Area, a_p	0.00	0.26	0.87	0.54	0.20	0.23	0.29
Longest Flow Path (ft)	175.88	40.34	64.52	69.05	368.14	223	126
Start Elevation (ft)	150.00	150.00	150.00	150.00	150.50	146.00	149.01
End Elevation (ft)	149.18	149.62	149.32	149.50	147.62	143.00	148.14
Difference of Elevation (ft)	**0.82**	**0.38**	**0.68**	**0.50**	**2.88**	**3.00**	**0.87**
Time of Concentration (min)	7.50	6.70	8.50	7.50	9.50	11.50	8.50
Hydrologic Soil Group	D	D	D	D	D	D	D
Runoff Coefficient, C	0.90	0.89	0.86	0.87	0.89	0.89	0.89
25-yr Peak Flow Rate (CFS)	**2.79**	**0.33**	**0.53**	**0.89**	**4.11**	**3.22**	**1.09**
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA							
PDS-based precipitation frequency estimates with 90% cor	0.437	0.437	0.437	0.437	0.437	0.437	0.437
Duration (minutes) NOAA Table	10	10	10	10	10	10	10
25-Year, tc Intensity, I (in/hr)	2.622	2.622	2.622	2.622	2.622	2.622	2.622
25-yr Peak Flow Rate (CFS)	**1.91**	**0.21**	**0.39**	**0.61**	**3.21**	**2.81**	**0.80**

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **25-Year Post Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7	DMA8
Total Site Area (sf)	35,716	18,716	18,101	43,005	15,307	47,917	3,763	2,909
Open Space - Poor (sf)	7,934	105	786	12,873	6,565	8,118	0	2,909
Gravel (sf)	0	0	0	0	0	0	0	0
Impervious Area (sf)	27782	18611	17315	30132	8742	39799	3763	0
Portion Impervious Area, a_i	**0.78**	**0.99**	**0.96**	**0.70**	**0.57**	**0.83**	**1.00**	**0.00**
Portion Pervious Area, a_p	0.22	0.01	0.04	0.30	0.43	0.17	0.00	1.00
Longest Flow Path (ft)	**179**	**105**	**249**	**233**	**177**	**169**	**86**	**7**
Start Elevation (ft)	152.00	152.00	145.00	148.00	152.00	152.00	152.00	150.00
End Elevation (ft)	149.50	150.00	144.50	144.75	150.00	150.00	151.00	149.00
Difference of Elevation (ft)	**2.50**	**2.00**	**0.50**	**3.25**	**2.00**	**2.00**	**1.00**	**4.00**
Time of Concentration (min)	6.50	4.50	9.50	7.50	7.50	6.00	5.50	1.00
Hydrologic Soil Group	D	D	D	D	D	D	D	D
Runoff Coefficient, C	0.89	0.90	0.90	0.89	0.88	0.89	0.90	0.88
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA								
PDS-based precipitation frequency estimates with 90% co	0.437	0.437	0.437	0.437	0.437	0.437	0.437	0.369
Duration (minutes) NOAA Table	10	10	10	10	10	10	10	10
25-Year, tc Intensity, I (in/hr)	2.622	2.622	2.622	2.622	2.622	2.622	2.622	2.214
25-yr Peak Flow Rate (CFS)	**1.91**	**1.01**	**0.98**	**2.29**	**0.81**	**2.58**	**0.20**	**0.13**

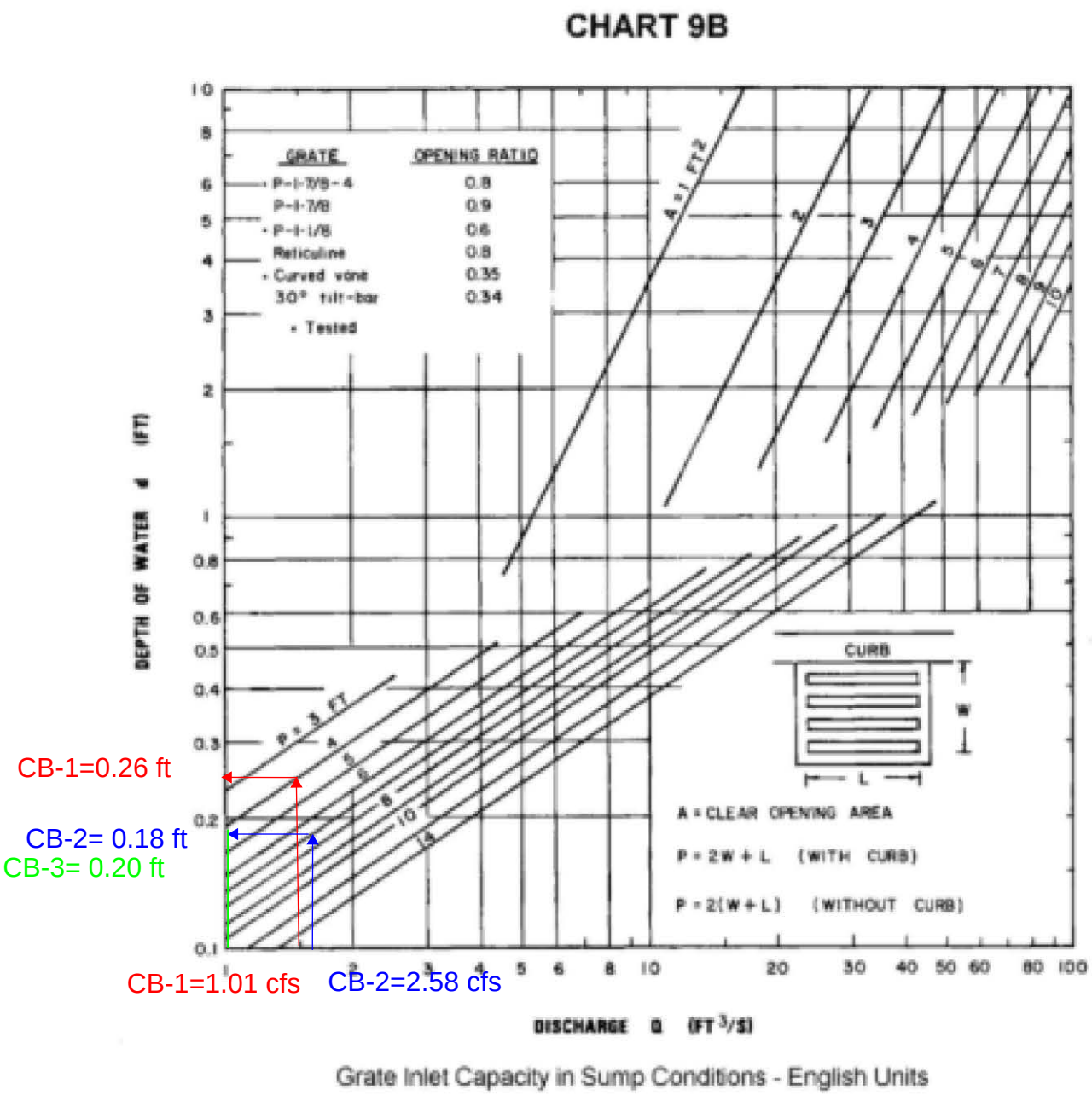
Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **100-Year Pre Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7
Total Site Area (sf)	35,179	3,991	7,550	11,525	59,938	52,592	15,015
Open Space - Poor (sf)	0	1,029	6,547	6,256	11,826	11,881	4,298
Gravel (sf)	0	0	0	0	0	0	0
Impervious Area (sf)	35179	2962	1003	5269	48112	40711	10717
Portion Impervious Area, a_i	**1.00**	**0.74**	**0.13**	**0.46**	**0.80**	**0.77**	**0.71**
Portion Pervious Area, a_p	0.00	0.26	0.87	0.54	0.20	0.23	0.29
Longest Flow Path (ft)	175.88	40.34	64.52	69.05	368.14	223	126
Start Elevation (ft)	150.00	150.00	150.00	150.00	150.50	146.00	149.01
End Elevation (ft)	149.18	149.62	149.32	149.50	147.62	143.00	148.14
Difference of Elevation (ft)	**0.82**	**0.38**	**0.68**	**0.50**	**2.88**	**3.00**	**0.87**
Time of Concentration (min)	7.50	6.70	8.50	7.50	9.50	11.50	8.50
Hydrologic Soil Group	D	D	D	D	D	D	D
Native Infiltration Rate, F_p (in/hr)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Runoff Coefficient, C	0.90	0.89	0.87	0.88	0.89	0.89	0.89
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA							
PDS-based precipitation frequency estimates with 90% cor	0.548	0.548	0.548	0.548	0.548	0.548	0.548
Duration (minutes) NOAA Table	10	10	10	10	10	10	10
100-Year, tc Intensity, I (in/hr)	3.288	3.288	3.288	3.288	3.288	3.288	3.288
100-yr Peak Flow Rate (CFS)	**2.39**	**0.27**	**0.49**	**0.77**	**4.03**	**3.53**	**1.01**

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Subject **100-Year Post Development Calculation**
Site **SANTA ROSA**

Parameter	DMA1	DMA2	DMA3	DMA4	DMA5	DMA6	DMA7	DMA8
Total Site Area (sf)	35,716	18,716	18,101	43,005	15,307	47,917	3,763	2,909
Open Space - Poor (sf)	7,934	105	786	12,873	6,565	8,118	0	2,909
Gravel (sf)	0	0	0	0	0	0	0	0
Impervious Area (sf)	27782	18611	17315	30132	8742	39799	3763	0
Portion Impervious Area, a_i	**0.78**	**0.99**	**0.96**	**0.70**	**0.57**	**0.83**	**1.00**	**0.00**
Portion Pervious Area, a_p	0.22	0.01	0.04	0.30	0.43	0.17	0.00	1.00
Longest Flow Path (ft)	**179**	**105**	**249**	**233**	**177**	**169**	**86**	**7**
Start Elevation (ft)	152.00	152.00	145.00	148.00	152.00	152.00	152.00	150.00
End Elevation (ft)	149.50	150.00	144.50	144.75	150.00	150.00	151.00	149.00
Difference of Elevation (ft)	**2.50**	**2.00**	**0.50**	**3.25**	**2.00**	**2.00**	**1.00**	**4.00**
Time of Concentration (min)	6.50	4.50	9.50	7.50	7.50	6.00	5.50	1.00
Hydrologic Soil Group	D	D	D	D	D	D	D	D
Runoff Coefficient, C	0.89	0.90	0.90	0.89	0.88	0.89	0.90	0.89
NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA								
PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)	0.548	0.548	0.548	0.548	0.548	0.548	0.548	0.548
Duration (minutes) NOAA Table	10	10	10	10	10	10	10	10
100-Year, tc Intensity, I (in/hr)	3.288	3.288	3.288	3.288	3.288	3.288	3.288	3.288
100-yr Peak Flow Rate (CFS)	**2.41**	**1.27**	**1.23**	**2.89**	**1.02**	**3.24**	**0.26**	**0.20**

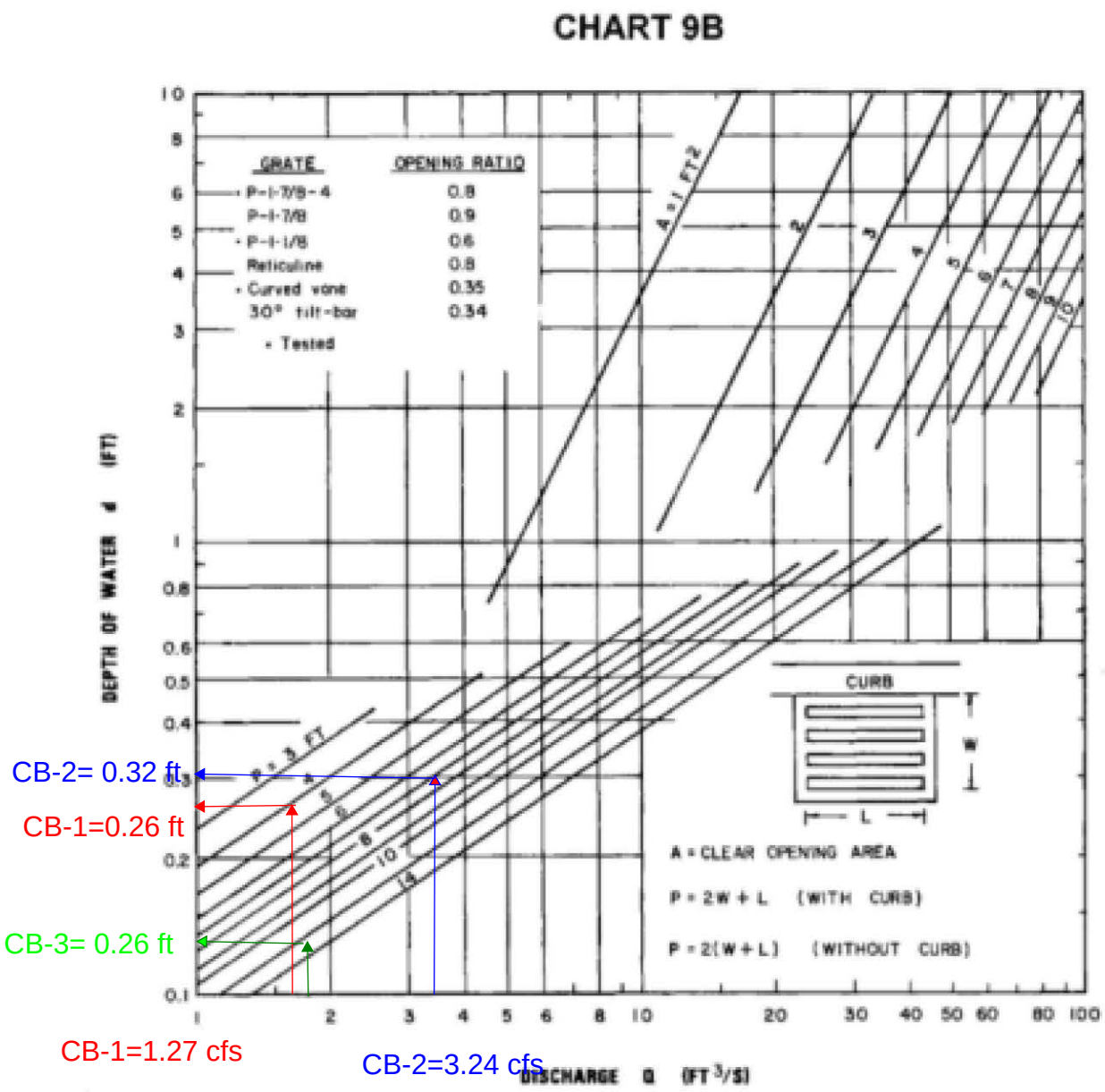
25 Year Peak Flow Rates



Grate Inlet Capacity in Sump Conditions - English Units

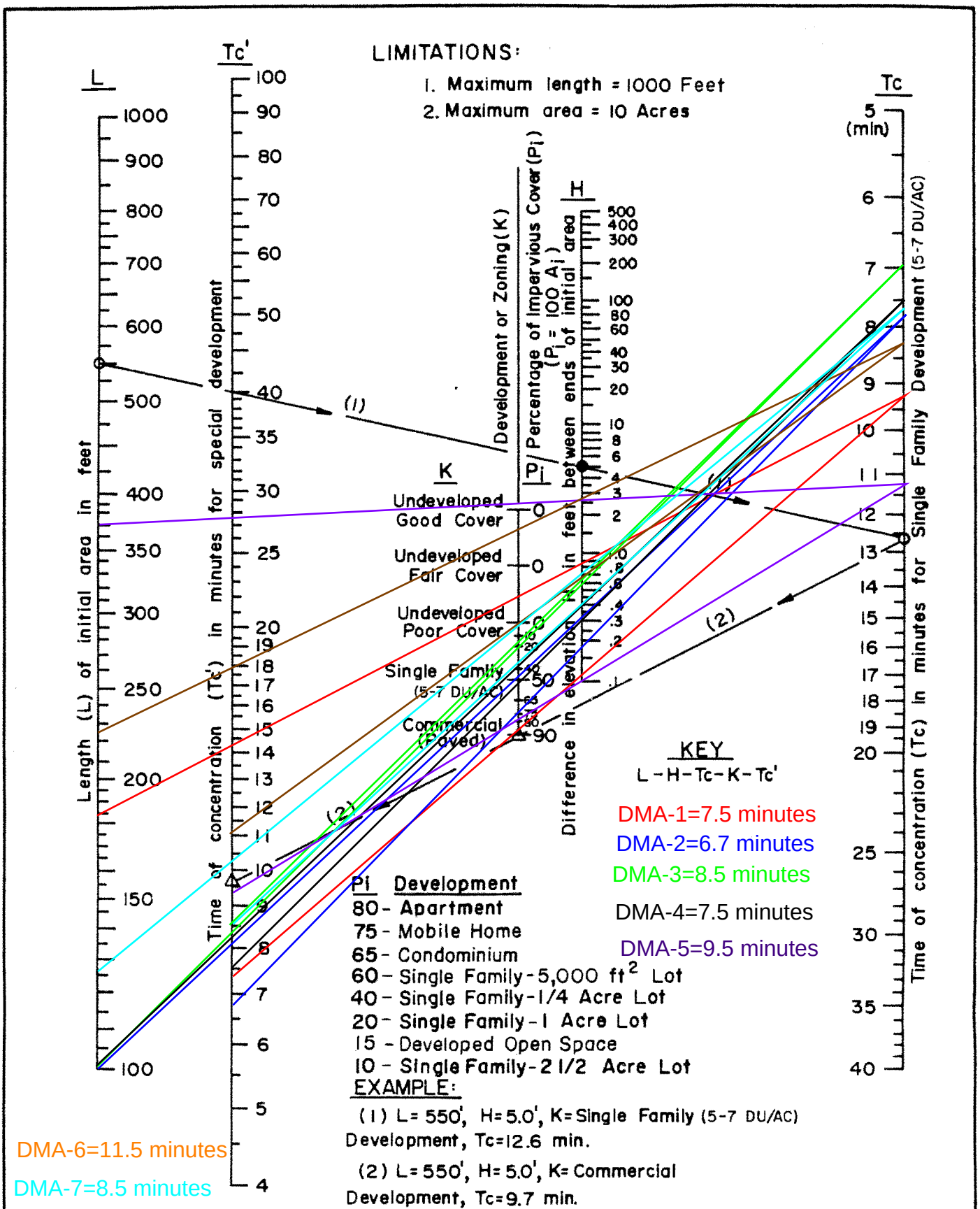
Figure 3-21: Grate Inlet Capacity in Sump Conditions Assuming No Clogging (HEC 22) (Brown, et al., 2009)

100 Year Peak Flow Rates



Grate Inlet Capacity in Sump Conditions - English Units

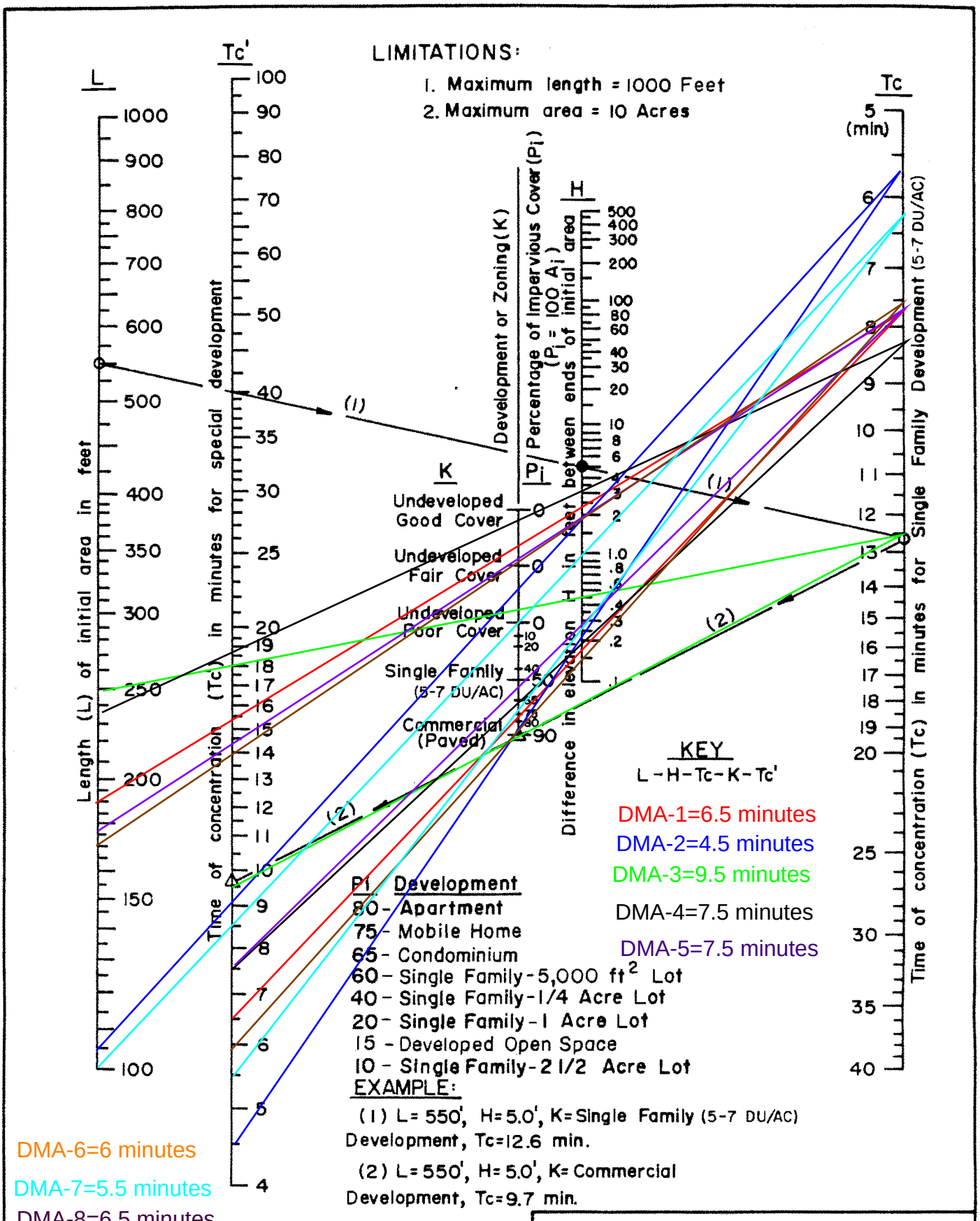
Figure 3-21: Grate Inlet Capacity in Sump Conditions Assuming No Clogging (HEC 22) (Brown, et al., 2009)



ORANGE COUNTY
HYDROLOGY MANUAL

TIME OF CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA

Figure D-1



ORANGE COUNTY

HYDROLOGY MANUAL

TIME OF CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA

Figure D-1

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Detail:

GRATE INLET SIZING

DMA2								
CB-1								
L	2.0	ft						
W	2.0	ft						
P	8.0	ft						
Clogging	50%							
P_effective	4.0	ft						
25-Year Peak Flow	1.01	cfs				100-Year Peak Flow	1.27	cfs
Ponding Depth (ft)	0.27	ft	*Reasonable Ponding Depth OK*			Ponding Depth (ft)	0.27	ft
DMA6								
CB-2								
L	4.0	ft						
W	2.7	ft						
P	13.3	ft						
Clogging	50%							
P_effective	6.7	ft						
25-Year Peak Flow	2.58	cfs				100-Year Peak Flow	3.24	cfs
Ponding Depth (ft)	0.18	ft	*Reasonable Ponding Depth OK*			Ponding Depth (ft)	0.32	ft
DMA7								
CB-3								
L	4.0	ft						
W	2.7	ft						
P	13.3	ft						
Clogging	50%							
P_effective	6.7	ft						
25-Year Peak Flow	0.20	cfs						
Ponding Depth (ft)	0.2	ft	*Reasonable Ponding Depth OK*			100-Year Peak Flow	0.26	cfs
						Ponding Depth (ft)		ft

Client: **SANTA ROSA City Schools District**
Project **SANTA ROSA City Schools District Office Improvements**
Detail:

PIPE SIZING

Drainage Area	Sizing Criteria Event	Flow (CFS)	Pipe Size (in)	Minimum Slope (S0) (ft/ft)	Manning Roughness n	Minimum Diameter (in)	Selected Pipe Size (in)
Northwest	25-Year Storm	3.79	18	0.05	0.012	12	18

Attachment C

Precipitation Frequency Data

NOAA Atlas 14, Volume 6, Version 2
Location name: Santa Rosa, California, USA*
Latitude: 38.4494°, Longitude: -122.7241°
Elevation: 152 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.152** (0.136-0.173)	**0.182** (0.162-0.207)	**0.223** (0.198-0.255)	**0.257** (0.225-0.296)	**0.305** (0.257-0.365)	**0.343** (0.282-0.421)	**0.383** (0.306-0.483)	**0.425** (0.328-0.554)	**0.483** (0.356-0.662)	**0.564** (0.400-0.805)
10-min	**0.218** (0.194-0.248)	**0.262** (0.232-0.297)	**0.320** (0.283-0.365)	**0.369** (0.323-0.425)	**0.437** (0.368-0.524)	**0.492** (0.404-0.604)	**0.548** (0.438-0.693)	**0.609** (0.471-0.795)	**0.693** (0.511-0.949)	**0.809** (0.573-1.15)
15-min	**0.264** (0.235-0.300)	**0.316** (0.281-0.360)	**0.387** (0.342-0.441)	**0.446** (0.391-0.513)	**0.529** (0.446-0.633)	**0.594** (0.489-0.730)	**0.663** (0.530-0.838)	**0.736** (0.569-0.961)	**0.838** (0.617-1.15)	**0.978** (0.693-1.40)
30-min	**0.369** (0.328-0.419)	**0.442** (0.393-0.503)	**0.540** (0.478-0.616)	**0.623** (0.546-0.717)	**0.739** (0.623-0.885)	**0.830** (0.683-1.02)	**0.927** (0.741-1.17)	**1.03** (0.795-1.34)	**1.17** (0.863-1.60)	**1.37** (0.968-1.95)
60-min	**0.514** (0.457-0.584)	**0.615** (0.547-0.700)	**0.752** (0.666-0.858)	**0.867** (0.761-0.999)	**1.03** (0.867-1.23)	**1.16** (0.951-1.42)	**1.29** (1.03-1.63)	**1.43** (1.11-1.87)	**1.63** (1.20-2.23)	**1.90** (1.35-2.71)
2-hr	**0.770** (0.685-0.874)	**0.921** (0.818-1.05)	**1.12** (0.988-1.27)	**1.27** (1.12-1.46)	**1.48** (1.25-1.77)	**1.64** (1.35-2.01)	**1.80** (1.44-2.27)	**1.96** (1.51-2.55)	**2.17** (1.60-2.97)	**2.33** (1.65-3.32)
3-hr	**0.974** (0.867-1.11)	**1.16** (1.04-1.32)	**1.40** (1.24-1.60)	**1.60** (1.40-1.84)	**1.84** (1.55-2.21)	**2.03** (1.67-2.49)	**2.21** (1.76-2.79)	**2.39** (1.85-3.12)	**2.62** (1.93-3.59)	**2.80** (1.98-3.99)
6-hr	**1.46** (1.30-1.66)	**1.74** (1.55-1.98)	**2.09** (1.85-2.38)	**2.36** (2.07-2.72)	**2.70** (2.28-3.24)	**2.96** (2.43-3.63)	**3.20** (2.56-4.04)	**3.43** (2.66-4.48)	**3.74** (2.75-5.12)	**3.96** (2.80-5.64)
12-hr	**2.06** (1.84-2.34)	**2.46** (2.18-2.79)	**2.94** (2.60-3.35)	**3.31** (2.90-3.81)	**3.78** (3.19-4.53)	**4.12** (3.39-5.06)	**4.45** (3.56-5.62)	**4.77** (3.69-6.22)	**5.17** (3.81-7.09)	**5.47** (3.88-7.80)
24-hr	**2.82** (2.54-3.20)	**3.37** (3.03-3.83)	**4.04** (3.62-4.60)	**4.56** (4.06-5.23)	**5.22** (4.51-6.16)	**5.70** (4.83-6.85)	**6.15** (5.11-7.56)	**6.60** (5.35-8.31)	**7.16** (5.60-9.36)	**7.58** (5.74-10.2)
2-day	**3.63** (3.26-4.12)	**4.45** (3.99-5.06)	**5.45** (4.88-6.20)	**6.21** (5.52-7.12)	**7.16** (6.19-8.46)	**7.84** (6.65-9.43)	**8.49** (7.05-10.4)	**9.12** (7.39-11.5)	**9.90** (7.74-12.9)	**10.5** (7.93-14.1)
3-day	**4.11** (3.69-4.66)	**5.15** (4.62-5.85)	**6.40** (5.74-7.30)	**7.35** (6.54-8.43)	**8.54** (7.38-10.1)	**9.37** (7.95-11.3)	**10.2** (8.44-12.5)	**10.9** (8.85-13.8)	**11.9** (9.27-15.5)	**12.5** (9.50-16.9)
4-day	**4.55** (4.09-5.16)	**5.76** (5.17-6.55)	**7.22** (6.46-8.22)	**8.31** (7.39-9.53)	**9.67** (8.36-11.4)	**10.6** (9.02-12.8)	**11.5** (9.57-14.2)	**12.4** (10.0-15.6)	**13.5** (10.5-17.6)	**14.2** (10.8-19.2)

7-day	**5.67** (5.10-6.43)	**7.21** (6.48-8.20)	**9.06** (8.12-10.3)	**10.4** (9.29-12.0)	**12.2** (10.5-14.4)	**13.4** (11.3-16.1)	**14.5** (12.0-17.8)	**15.6** (12.6-19.6)	**16.9** (13.2-22.1)	**17.8** (13.5-24.0)
10-day	**6.48** (5.82-7.35)	**8.25** (7.40-9.37)	**10.4** (9.28-11.8)	**11.9** (10.6-13.7)	**13.9** (12.0-16.4)	**15.2** (12.9-18.3)	**16.5** (13.7-20.3)	**17.7** (14.3-22.3)	**19.2** (15.0-25.1)	**20.2** (15.3-27.2)
20-day	**8.58** (7.71-9.74)	**10.9** (9.83-12.4)	**13.7** (12.3-15.6)	**15.8** (14.0-18.1)	**18.3** (15.8-21.6)	**20.0** (17.0-24.0)	**21.6** (17.9-26.5)	**23.1** (18.7-29.0)	**24.9** (19.4-32.5)	**26.1** (19.8-35.2)
30-day	**10.4** (9.34-11.8)	**13.3** (11.9-15.1)	**16.6** (14.9-18.9)	**19.0** (16.9-21.8)	**22.0** (19.0-25.9)	**24.0** (20.3-28.8)	**25.8** (21.4-31.7)	**27.5** (22.3-34.6)	**29.5** (23.1-38.6)	**30.9** (23.4-41.7)
45-day	**12.7** (11.4-14.4)	**16.1** (14.5-18.3)	**20.1** (18.0-22.9)	**23.0** (20.4-26.4)	**26.4** (22.8-31.2)	**28.7** (24.4-34.6)	**30.8** (25.6-37.9)	**32.8** (26.6-41.3)	**35.1** (27.4-45.8)	**36.6** (27.8-49.4)
60-day	**15.0** (13.5-17.0)	**19.0** (17.1-21.6)	**23.6** (21.2-26.9)	**26.9** (24.0-30.9)	**30.9** (26.7-36.5)	**33.5** (28.4-40.3)	**35.9** (29.8-44.1)	**38.0** (30.8-47.9)	**40.6** (31.7-53.0)	**42.3** (32.0-57.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

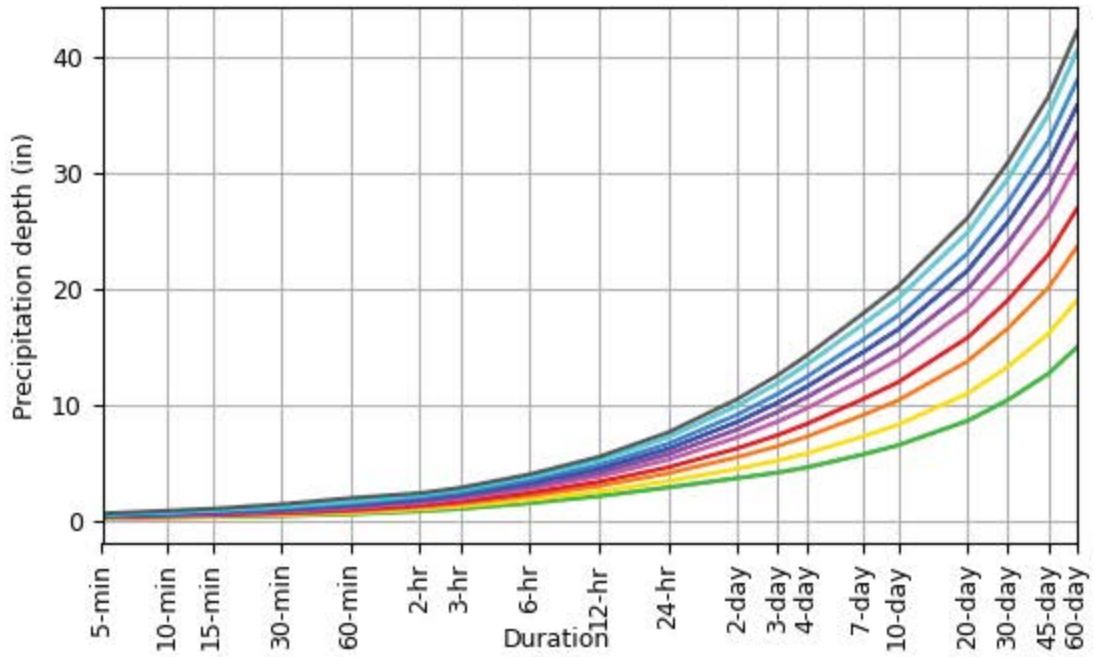
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

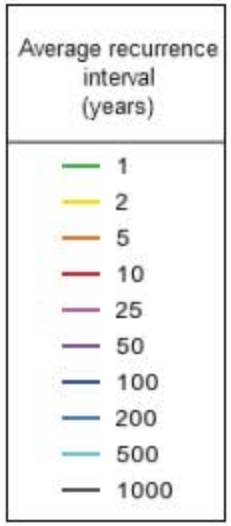
Please refer to NOAA Atlas 14 document for more information.

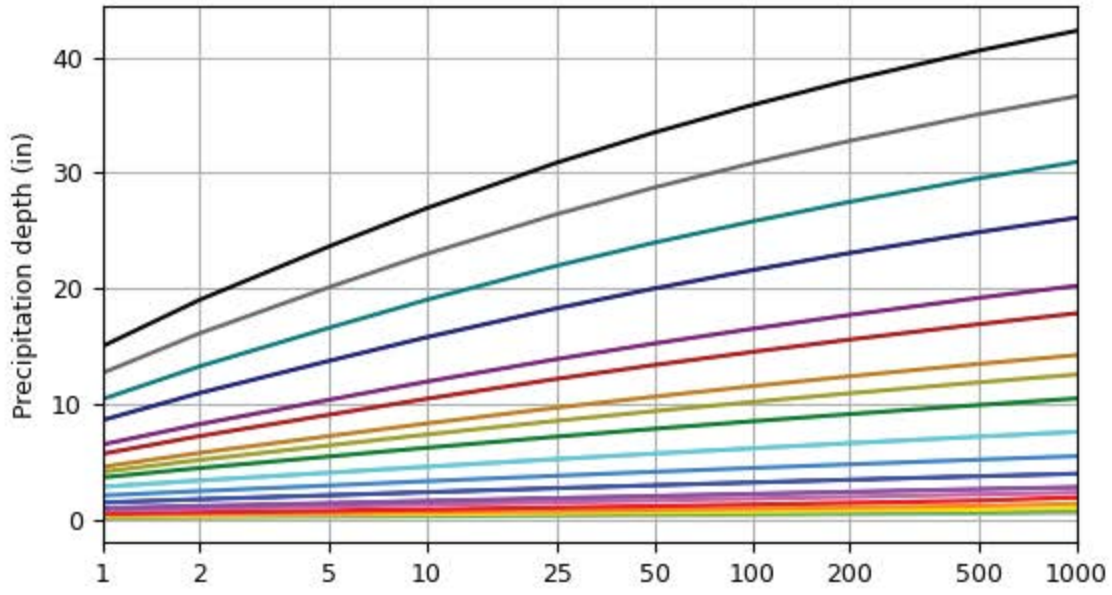
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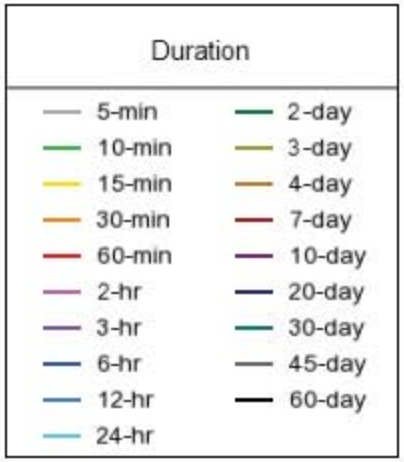
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 38.4494°, Longitude: -122.7241°









Average recurrence interval (years)

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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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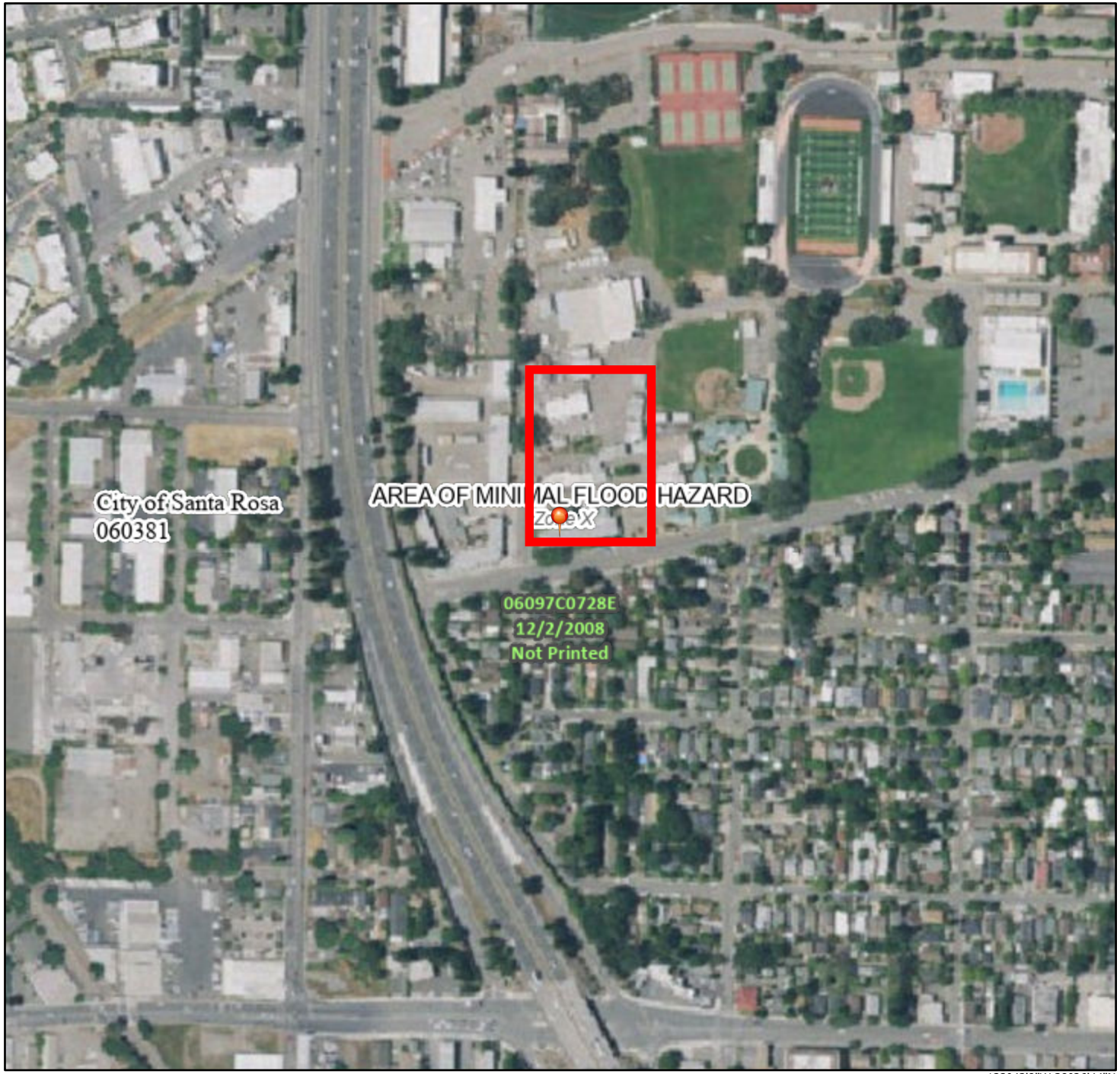
Attachment D

National Flood Hazard Layer FIRMette

National Flood Hazard Layer FIRMette

FEMA

122°43'46"W 38°27'12"N



122°43'8"W 38°26'44"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/13/2026 at 4:38 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix F

Construction Noise Calculations

CONSTRUCTION NOISE ANALYSIS REPORT

1. METHODOLOGY

Estimates provided are based on the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM).

- **Source Reference:** 50 feet
- **Receiver Distance:** 365 feet
- **Attenuation Calculation:** -17.3 dBA (based on distance)

2. PHASE ANALYSIS

Phase 1: Demolition and Clearing

- **Equipment:** Excavators, Bulldozers, Dump Trucks, Concrete Saws, Chippers
- **Estimated Noise Level (365 ft): 69.2 dBA**

Phase 2: Site Preparation and Utilities

- **Equipment:** Backhoe Loaders, Excavators, Compactors, Trenchers, Loaders, Generators
- **Estimated Noise Level (365 ft): 65.3 dBA**

Phase 3: Grading

- **Equipment:** Graders, Scrapers, Bulldozers, Water Trucks, Soil Compactors
- **Estimated Noise Level (365 ft): 68.5 dBA**

Phase 4: Building Construction

- **Equipment:** Cranes, Forklifts, Pump Trucks, Compressors, Welders, Pneumatic Tools
- **Estimated Noise Level (365 ft): 65.5 dBA**

Phase 5: Architectural Coatings

- **Equipment:** Air Compressors, Aerial Lifts, Small Generators
- **Estimated Noise Level (365 ft): 58.7 dBA**

3. SUMMARY

Construction Phase	**Estimated Noise Level @ 365 ft**

Demolition & Clearing	**69.2 dBA**
Site Prep & Utilities	**65.3 dBA**
Grading	**68.5 dBA**
Building Construction	**65.5 dBA**
Architectural Coatings	**58.7 dBA**