Appendix A
Air Quality Data

Butte Soil Stockpile Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Butte Soil Stockpile
Construction Start Date	7/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.90
Precipitation (days)	30.0
Location	39.67308977787573, -121.73707282576791
County	Butte
City	Unincorporated
Air District	Butte County AQMD
Air Basin	Sacramento Valley
TAZ	286
EDFZ	3
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

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
User Defined Industrial	131	User Defined Unit	3.00	0.00	0.00	0.00	—	Soli Stockpile

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.98	2.51	24.7	18.9	0.05	0.95	1.31	2.26	0.88	0.15	1.03	—	5,781	5,781	0.23	0.05	0.35	5,803
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.97	2.50	24.7	18.8	0.05	0.95	1.31	2.26	0.88	0.15	1.03	—	5,773	5,773	0.24	0.05	0.01	5,794
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.00	0.84	8.29	6.34	0.02	0.32	0.44	0.76	0.29	0.05	0.34	—	1,939	1,939	0.08	0.02	0.05	1,946
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.15	1.51	1.16	< 0.005	0.06	0.08	0.14	0.05	0.01	0.06	—	321	321	0.01	< 0.005	0.01	322

2.2. Construction Emissions by Year, Unmitigated

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

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

2024	2.98	2.51	24.7	18.9	0.05	0.95	1.31	2.26	0.88	0.15	1.03	—	5,781	5,781	0.23	0.05	0.35	5,803
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.97	2.50	24.7	18.8	0.05	0.95	1.31	2.26	0.88	0.15	1.03	—	5,773	5,773	0.24	0.05	0.01	5,794
2025	2.66	2.24	20.6	17.3	0.05	0.79	1.31	2.10	0.73	0.15	0.88	—	5,770	5,770	0.23	0.05	0.01	5,792
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.00	0.84	8.29	6.34	0.02	0.32	0.44	0.76	0.29	0.05	0.34	—	1,939	1,939	0.08	0.02	0.05	1,946
2025	0.16	0.14	1.25	1.05	< 0.005	0.05	0.08	0.13	0.04	0.01	0.05	—	350	350	0.01	< 0.005	0.01	351
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.18	0.15	1.51	1.16	< 0.005	0.06	0.08	0.14	0.05	0.01	0.06	—	321	321	0.01	< 0.005	0.01	322
2025	0.03	0.02	0.23	0.19	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	58.0	58.0	< 0.005	< 0.005	< 0.005	58.2

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.75	1.20	< 0.005	0.03	—	0.03	0.03	—	0.03	—	182	182	0.01	< 0.005	—	182
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.97	4.97	< 0.005	< 0.005	—	4.99
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.82	0.82	< 0.005	< 0.005	—	0.83
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.27	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.9	33.9	< 0.005	< 0.005	0.14	34.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.08	31.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.84	0.84	< 0.005	< 0.005	< 0.005	0.86
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.86
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.92	2.46	24.6	18.4	0.05	0.95	—	0.95	0.88	—	0.88	—	5,683	5,683	0.23	0.05	—	5,702
Dust From Material Movement	—	—	—	—	—	—	1.24	1.24	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.92	2.46	24.6	18.4	0.05	0.95	—	0.95	0.88	—	0.88	—	5,683	5,683	0.23	0.05	—	5,702
Dust From Material Movement	—	—	—	—	—	—	1.24	1.24	—	0.13	0.13	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	8.24	6.15	0.02	0.32	—	0.32	0.29	—	0.29	—	1,902	1,902	0.08	0.02	—	1,908
Dust From Material Movement	—	—	—	—	—	—	0.42	0.42	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.50	1.12	< 0.005	0.06	—	0.06	0.05	—	0.05	—	315	315	0.01	< 0.005	—	316
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.54	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	67.9	67.9	< 0.005	< 0.005	0.28	69.0
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.08	31.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.41	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.7	59.7	< 0.005	< 0.005	0.01	60.6
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.1	30.1	< 0.005	< 0.005	< 0.005	31.4

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.6	20.6	< 0.005	< 0.005	0.04	20.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	0.01	10.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.41	3.41	< 0.005	< 0.005	0.01	3.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.66	1.66	< 0.005	< 0.005	< 0.005	1.74
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.61	2.20	20.5	16.9	0.05	0.79	—	0.79	0.73	—	0.73	—	5,682	5,682	0.23	0.05	—	5,702
Dust From Material Movement	—	—	—	—	—	—	1.24	1.24	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.16	0.13	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	345	345	0.01	< 0.005	—	346
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	57.1	57.1	< 0.005	< 0.005	—	57.3
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.38	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	58.5	58.5	< 0.005	< 0.005	0.01	59.4
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.5	29.5	< 0.005	< 0.005	< 0.005	30.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.66	3.66	< 0.005	< 0.005	0.01	3.72
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/1/2024	7/13/2024	5.00	10.0	—
Grading	Grading	7/14/2024	1/31/2025	5.00	145	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	5.00	84.0	0.37

Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	5.00	84.0	0.37
Grading	Scrapers	Diesel	Average	3.00	8.00	423	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	4.00	10.3	LDA,LDT1,LDT2
Site Preparation	Vendor	2.00	4.50	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	8.00	10.3	LDA,LDT1,LDT2
Grading	Vendor	2.00	4.50	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

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

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	0.00	0.00	—
Grading	0.00	0.00	435	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

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)

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	26.5	annual days of extreme heat
Extreme Precipitation	6.95	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	7.74	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

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	3	1	1	3
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2

Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	67.0
AQ-PM	11.7
AQ-DPM	5.86
Drinking Water	25.0
Lead Risk Housing	35.4
Pesticides	62.3
Toxic Releases	5.61
Traffic	31.4
Effect Indicators	—
CleanUp Sites	61.4
Groundwater	3.30

Haz Waste Facilities/Generators	55.4
Impaired Water Bodies	23.9
Solid Waste	93.8
Sensitive Population	—
Asthma	51.9
Cardio-vascular	74.8
Low Birth Weights	76.4
Socioeconomic Factor Indicators	—
Education	35.9
Housing	55.1
Linguistic	0.00
Poverty	66.1
Unemployment	82.3

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	44.71962017
Employed	14.74400103
Median HI	30.73270884
Education	—
Bachelor's or higher	52.22635699
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	22.25073784

Active commuting	49.13383806
Social	—
2-parent households	56.55075067
Voting	82.49711279
Neighborhood	—
Alcohol availability	73.77133325
Park access	12.06210702
Retail density	10.5350956
Supermarket access	2.399589375
Tree canopy	98.19068395
Housing	—
Homeownership	56.53791864
Housing habitability	47.6324907
Low-inc homeowner severe housing cost burden	35.42923136
Low-inc renter severe housing cost burden	48.26126011
Uncrowded housing	66.9190299
Health Outcomes	—
Insured adults	59.36096497
Arthritis	0.0
Asthma ER Admissions	47.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	8.9

Cognitively Disabled	0.6
Physically Disabled	2.1
Heart Attack ER Admissions	24.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	82.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	77.5
SLR Inundation Area	0.0
Children	94.0
Elderly	3.3
English Speaking	78.7
Foreign-born	2.0
Outdoor Workers	25.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.6
Traffic Density	15.2
Traffic Access	0.0
Other Indices	—
Hardship	51.4

Other Decision Support	—
2016 Voting	73.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	52.0
Healthy Places Index Score for Project Location (b)	37.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Applicant provided construction schedule.
Construction: Off-Road Equipment	Applicant provided equipment schedule.
Construction: Trips and VMT	Applicant provided information.
Operations: Vehicle Data	Based on applicant provided information, 3 trucks per day = 6 round truck trips per day with 50 miles truck trip distance.

Operations: Fleet Mix	HHD trucks only.
Operations: Energy Use	No electric or natural gas consumed with the operation of the project. Only vehicle operations.
Operations: Water and Waste Water	No water consumed with the transloading operation.
Operations: Solid Waste	No solid waste as a result of the operation of the project.
Operations: Refrigerants	Outdoor project no commercial A/C or heat with the operation of the project.
Operations: Consumer Products	No consumer products with operation of the project.
Operations: Landscape Equipment	No landscape equipment with the operation of the project.
Operations: Architectural Coatings	No buildings or painting with operation of the project.
Land Use	Applicant provided information

Appendix B
Biological Resources Assessment

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April 11, 2023 12979.04

Craig Cissell
Butte County Public Works, Waste Management Division
7 County Center Drive
Oroville, California 95965

Subject: **Preliminary Biological Resources Assessment for the Butte County Neal Road Recycling and Waste Facility (NRWWF) - Soil Stockpile Expansion Project**

Dear Mr. Cissell:

This report presents the results of a preliminary biological resource assessment (BRA) conducted by Dudek on March 01, 2023, for the potential soil stockpile expansion area (herein referred to as the "study area") for the Neal Road Recycling Waste Facility (NRWWF) in western Butte County, California. The purpose of this assessment was to review current site conditions, document existing vegetation communities within and in the vicinity of the project site and assess for the potential for special-status species and sensitive habitats to occur. This report includes (1) a description of the methods used to conduct the assessment of the soil stockpile expansion area (2) a brief description of existing habitat conditions on site (3) an analysis of special-status plant and wildlife species and other sensitive biological resources potentially present, including aquatic resources and sensitive natural communities.

1 Introduction

The study area consists of approximately 1.4 acres located in unincorporated Butte County, on the northeast side of Nance Canyon Road and immediately west of the NRWWF Property Boundary near the existing soil stockpile (see Figure 1, Project Location). The soil expansion area (herein referred to as the "Project Boundary") would consist of the study area and the existing soil stockpile on the NRWWF property. Summary of Project Overview settings as it relates to the Study Area, Project Boundary, and the Existing Soil Stockpile are outlined in Table 1 below.

Table 1. Summary of Project Overview Settings

Project Setting Overview	Study Area	Project Boundary	Existing Soil Stockpile
County	Butte	Butte	Butte
Assessor Parcel Number (APN)	040-600-063-000; 040-600-082-000; 040-600-084-000	040-600-063-000; 040-600-082-000; 040-600-084-000	040-600-082-000
Public Land Survey System (PLSS)	Township 21N, Range 2E, Section 15	Township 21N, Range 2E, Section 15	Township 21N, Range 2E, Section 15
U.S. Geological Survey (USGS) 7.5-Minute Quadrangle	Hamlin Canyon	Hamlin Canyon	Hamlin Canyon
Acres	1.4495	20.0108	15.1308

Table 1. Summary of Project Overview Settings

Project Setting Overview	Study Area	Project Boundary	Existing Soil Stockpile
Latitude, Longitude (centroid, decimal degrees)	39.67394, -121.738	39.6738, -121.737	39.67378, -121.737
Elevation Average (feet above mean sea level)	215.49	244.45	253.17
Elevation Range (feet above mean sea level)	213.49 – 219.50	210.28 –280.54	211.95 – 280.54

Source: Google Earth Pro, 2023a; 2021, Butte County, 2023a
Notes: APN=Assessor Parcel Number; USGS= United States Geological Survey; PLSS=Public Land Survey System

2 Methods

Dudek searched the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) database, and California Native Plant Society's (CNPS) of Rare and Endangered Plants data for records of special-status species occurrences in the vicinity of the study area.

Dudek Biologist Mikaela Bissell conducted a general reconnaissance survey of the study area on March 01, 2023. The purpose of the survey was to assess current conditions and evaluate the potential for the study area to support sensitive natural communities, special-status plant and wildlife species, and jurisdictional aquatic resources. The survey took place from 10:32 AM – 1:15 PM (GMT-7). Climate conditions were recorded at the end of the survey and include the following detailed below in Table 2.

Table 2. Climate Conditions

Climate Condition	Recorded Condition
Temperature	52°F
Humidity	49%
Wind	13 MPH
Rainfall	0" within last 24 hours
Cloud Cover	15%-20%

Source: Apple Weather – Paradise California
Notes: F=Fahrenheit; MPH=Miles Per Hour

Representative site photos of the study area were taken during the survey and can be found in the Photo Log in Attachment A. Recorded wildlife species can be found in the Wildlife Compendium in Attachment B. Recorded plant species can be found in the Plant Compendium in Attachment C.

3 Results

3.1 Site Description

The approximately 1.4-acre study area is located within unincorporated Butte County near the Town of Paradise, southeast of the City of Chico and east of the census-designated place of Durham off State Route 99. Elevation for the study area ranges from approximately 213 – 220 feet above mean sea level.. Elevation ranges for the Project Boundary and the existing stockpile can be found in Table 1 above. Topography of area surrounding the study area and surrounding area consists of moderately sloping valleys and hillsides. The study area is relatively flat and is located on annual grassland with grazing cattle surrounding the area. Additionally, a riverine feature flows north of the study area. Representative photographs of the study area and immediate surrounding vicinity area included in Attachment A.

3.2 Soils and Hydrology

There are 2 soil types mapped within the 1.4-acre study area, the 15.1-acre existing stockpile area, and the 20-acre project boundary (USDA, 2023a) (Figure 3, Project Soils). Of these, one soil type is classified as hydric[1] and may be associated with vernal pools and stream terraces according to the Natural Resource Conservation Service (NRCS) (USDA, 2023b). Soils are variable in the study area and may contain cemented ash, volcanic mud flows, and patches of alluvium. The closest serpentine soils are approximately 10-15 miles northeast from the study area located in Deadwood in Butte County and are categorized as Unit 2 #384 (Late Proterozoic to Early Jurassic) (Calflora, 2023).

The study area occurs in the Butte Creek watershed which is approximately 800 square miles in size and spans over 90 miles through the following counties: Butte, Tehama, Sutter, Glenn, and Colusa (Sacramento River Watershed Program, 2023). The 12-digit Hydrologic Unit Code (HUC) for the study area, project boundary, and existing soil stockpile is 180201580203 (USGS, 2023a). The USFWS National Wetlands Inventory identifies two riverine features just outside of the project boundary. The first feature runs west of the study area and is categorized as a riverine (R4SBC: 'R'- riverine, '4' – intermittent, 'SB' streambed, and 'C'- seasonally flooded). The second feature is located southeast outside of the project boundary and is also classified as a R4SBC feature. According to the Federal Management Agency Flood Zone (FEMA) data, the study area is located within the 100-year floodplain (FEMA, 2021) (Figure 4, Hydrologic Resources).

3.3 Vegetation Communities and Land Cover

The existing stockpile area is mapped solely of urban land cover (see Figure 5, Vegetation Communities and Land Covers). The 1.4-acre study area and the 20-acre project boundary are mapped of urban land cover and annual grassland habitat. According to the CNDDB, there are 7 sensitive natural communities mapped in the study area region: Great Valley valley oak riparian forest, Great Valley mixed riparian forest, Great Valley cottonwood riparian forest, northern basalt flow vernal pool, northern volcanic mud flow vernal pool, Great Valley willow scrub, and northern hardpan vernal pool. None of these sensitive natural communities were identified within the study area.

[1] Hydric soils are often associated with aquatic resources, such as wetlands, streams, and floodplains.

3.4 Aquatic Resources

During the biological reconnaissance survey performed by Dudek on March 01, 2023, a wetland swale feature was identified within the study area. Therefore, Dudek recommends an aquatic resources delineation be conducted to map the jurisdictional extent of this feature. Representative photos of the feature were taken and can be found in Attachment A. The biologist documented visible sediment sorting, hydrology, and facultative wetland plants (FACW) noted in Attachment C.

3.5 Special-Status Species

Results of the CDFW CNDDB, USFWS IPAC, and CNPS database searches identified records for 29 special-status plant species and 27 special-status wildlife species within the region of the project boundary, which includes the study area and existing stockpile area. A total of 19 plant species and 22 wildlife species were removed from consideration based on a lack of suitable habitat, or because the project boundary is outside the known geographic or elevation range for the species (Attachment D, Plant PTO Tables; Attachment E, Wildlife PTO Tables). A total of 10 special-status plant species and 5 special status wildlife species at least have a moderate potential to occur in the project boundary outlined in Table 3 below.

Table 3. Potentially Occurring Special-Status Plant and Wildlife Species

Scientific Name	Common Name	Status (Fed/State/CRPR)
Plants		
Balsamorhiza macrolepis	big-scale balsamroot	None/None/1B.2
Castilleja rubicundula var. *rubicundula*	pink creamsacs	None/None/1B.2
Euphorbia hooveri	Hoover's spurge	FT/None/1B.2
Fritillaria pluriflora	adobe-lily	None/None/1B.2
Juncus leiospermus var. *leiospermus*	Red Bluff dwarf rush	None/None/1B.1
Limnanthes 4loccose ssp. *Californica*	Butte County meadowfoam	FE/SE/1B.1
Monardella venosa	veiny monardella	None/None/1B.1
Paronychia ahartii	Ahart's paronychia	None/None/1B.1
Trifolium jokerstii	Butte County golden clover	None/None/1B.2
Tuctoria greenei	Greene's tuctoria	FE/SR/1B.1
Wildlife		
Invertebrates		
Branchinecta lynchi	vernal pool fairy shrimp	FT/None/NA
Lepidurus packardi	vernal pool tadpole shrimp	FE/None/NA
Amphibians		
Spea hammondii	western spadefoot	None/SSC/NA
Birds		
Falco peregrinus anatum	American peregrine falcon	FPD/FP, SCD/NA
Athene cunicularia	Burrowing owl	None/SSC/NA

Federal Status: FE: Federally Endangered; FT: Federally Threatened.

State Status: SE: State Endangered; ST: State Threatened; SCD: State candidate for delisting; SR: State Rare; FP: California Fully Protected Species; SSC: Species of Special Concern; FPD: Federally proposed for delisting.
CRPR (California Rare Plant Rank): 1B: Plants rare, threatened, or endangered in California and elsewhere; (.1) Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat); (.2) Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat).

4 Discussion

The following biological resource constraints have been identified in the study area: habitat for special-status plant and wildlife species, migratory and nesting birds, and jurisdictional aquatic resources.

4.1 Jurisdictional Aquatic Resources

The study area within the project boundary was evaluated for aquatic resources during the reconnaissance level survey. Within the study area, aquatic resources are evident due to visible sediment sorting, hydrology, and identified facultative wetland plants. Dudek recommends that eventual development in the study area avoid aquatic resources where possible, and that a formal delineation of the potential expansion area be conducted. Impacts to jurisdictional aquatic resources would be considered a significant impact under CEQA and would also require aquatic resource permits from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or CDFW (e.g., 404 Individual or Nationwide Permit, 401 Water Quality Certification or Porter-Cologne Act Waste Discharge Requirements, and 1600 Streambed Alteration Agreement), as well as a Preliminary or Approved Jurisdictional Delineation from the USACE to identify aquatic resources on site within federal jurisdiction and a field verification with the USACE to confirm jurisdictional boundaries. In addition, compensatory mitigation may be required for permanent impacts to aquatic resources to ensure no net loss of these resources. Potential compensatory mitigation options include purchasing mitigation credits from an agency-approved wetlands mitigation bank or paying an agency-approved in-lieu fee. Where direct impacts to jurisdictional aquatic resources can be avoided, exclusion fencing should be installed between the avoided aquatic resource and limits of disturbance to protect from indirect impacts.

4.2 Special-Status Plants

The study area may provide habitat for ten (10) special-status plant species, including species adapted to wetlands and vernal pools such as Hoover's spurge (*Euphorbia hooveri*), Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*), and Butte County meadowfoam (*Limnanthes 5loccose* ssp. *Californica*). Grassland and woodland areas of the study area may also provide habitat for special-status plants such as adobe-lily (*Fritillaria pluriflora*) and veiny monardella (*Monardella venosa*) (see Attachment D Plant PTO Tables).

Eventual development on the study area could result in impacts to special-status plants if present within or immediately adjacent to the development footprint. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance. To avoid/minimize the potential for impacts to special-status plants, Dudek recommends that a biologist conduct a botanical inventory and focused rare plant survey of the project footprint. The timing of the plant survey would need to coincide with the period or periods when all potentially occurring special-status plants are evident and identifiable. Dudek anticipates that one survey passes in May would be adequate to capture most potentially occurring species, assuming environmental conditions are suitable (e.g., normal rain year/no drought, no recent

grading, vegetation management, etc.). If suitable habitat for late blooming species is identified on site, a follow-up rare plant survey may be necessary in June or July.

4.3 Special-Status Wildlife

The study area may provide habitat for five (5) special-status wildlife species, including species adapted to wetlands and vernal pools such as vernal pool fairy shrimp (*Branchinecta lynchi)*, vernal pool tadpole shrimp, and western spadefoot (*Spea hammondii*). Vernal pool habitat would be confirmed through an aquatic resources delineation being performed on the study area. As federally listed threatened species, impacts to individual vernal pool fairy shrimp or tadpole shrimp would be considered "take" under the federal Endangered Species Act, as well as a significant impact under CEQA. Impacts to western spadefoot, which is a California Species of Special Concern, would also likely be considered significant impacts under CEQA. As such, Dudek recommends that the County of Butte obtain the spatial data associated with the Gallaway aquatic resources delineation, which would identify where potential habitat for these species occurs in relation to a portion of the study area to determine whether focused or/and pre-construction surveys for these species are necessary.

Open grassland within and adjacent to the study area provides potential breeding and foraging habitat for burrowing owl (*Athene cunicularia*). No burrows were observed during the field reconnaissance survey, which did not include full coverage of the Project Boundary. Direct or indirect impacts to this species would likely be considered a significant impact under CEQA. To avoid/minimize potential impacts to burrowing owl, Dudek recommends conducting a habitat assessment of the project footprint prior to project construction. Ideally, the assessment should be conducted prior to the owl's breeding season (February 1–August 31) to allow time for protocol surveys and/or passive relocation, should any suitable burrows and/or burrows with owl sign be detected during the survey. Protocol surveys (if needed) should be conducted in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation, and passive relocation (if needed) should be conducted in coordination with CDFW.

Shrubs, open habitat, and/or human-made structures and buildings on the study area provide nesting habitat for numerous local and migratory bird or raptor species protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code, including peregrine falcon (*Falco peregrinus anatum*). No active or inactive bird nests were observed, but a focused survey for nests was not conducted and the survey took place outside of the bird breeding season. Eventual development on the study area has the potential to impact nesting birds, which would violate the Migratory Bird Treaty Act and California Fish and Game Code and would likely be considered a significant impact under CEQA. To avoid impacting active nests, Dudek recommends conducting tree or vegetation removal outside of the nesting season. If not feasible, Dudek recommends a pre-construction survey for nesting birds and the establishment of avoidance buffers, should active nests be identified within or adjacent to the project footprint. The preconstruction survey would only be necessary if construction were to occur during the breeding season (February 1–August 31).

Please contact me at 530.328.9515 or mbissell@dudek.com if you have any questions regarding the content of this letter report.

Sincerely,

Mikaela Bissell
Environmental Compliance Specialist

Att(s): Figures 1-6
Attachment A, Photo Log
Attachment B, Wildlife Compendium
Attachment C, Plant Compendium
Attachment D, Plant PTO Tables
Attachment E, Wildlife PTO Tables
cc: Brian Grattidge, Allie Sennett, Dudek

5 References

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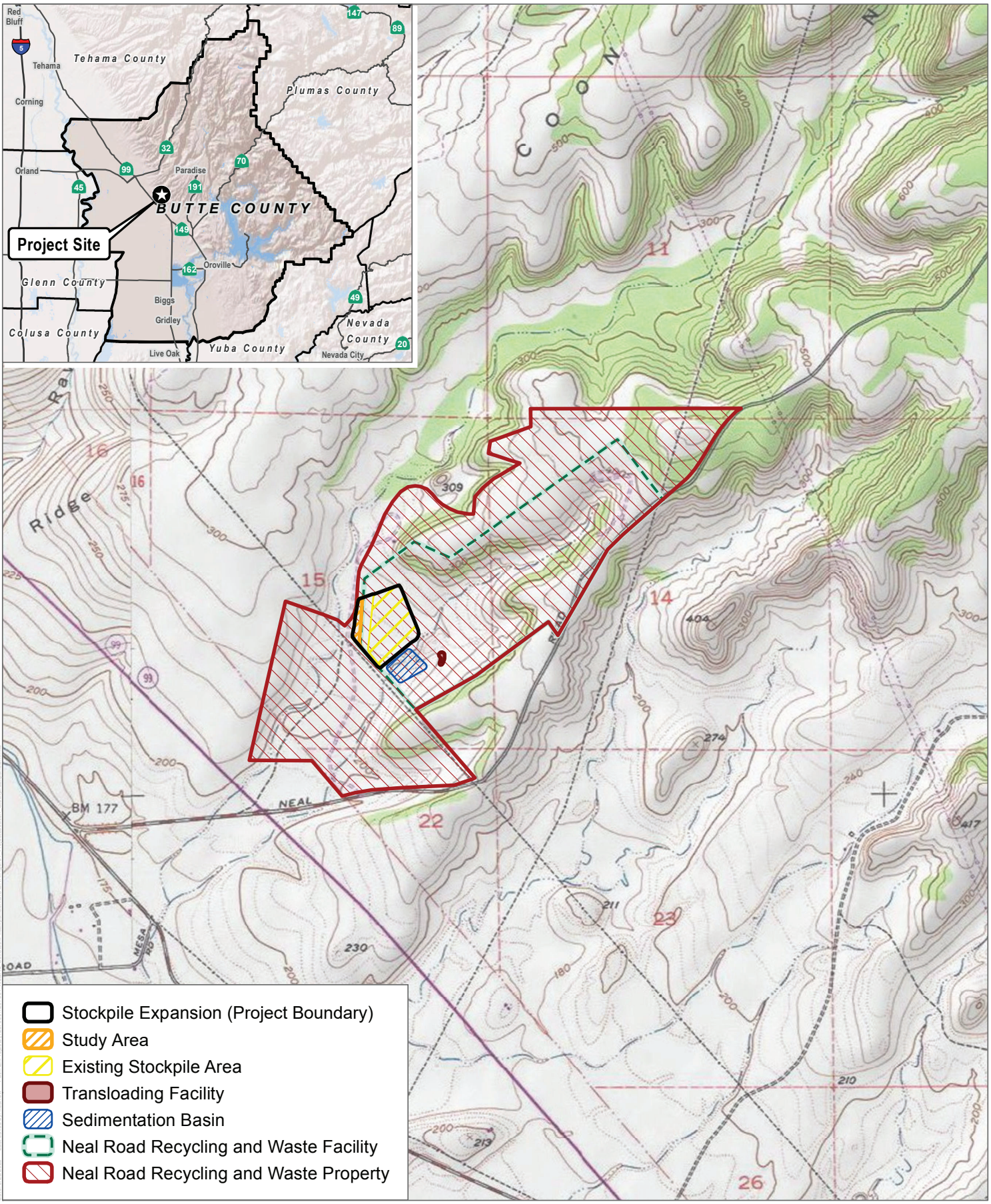


SOURCE: USGS 7.5-Minute Series Hamlin Canyon Quadrangle

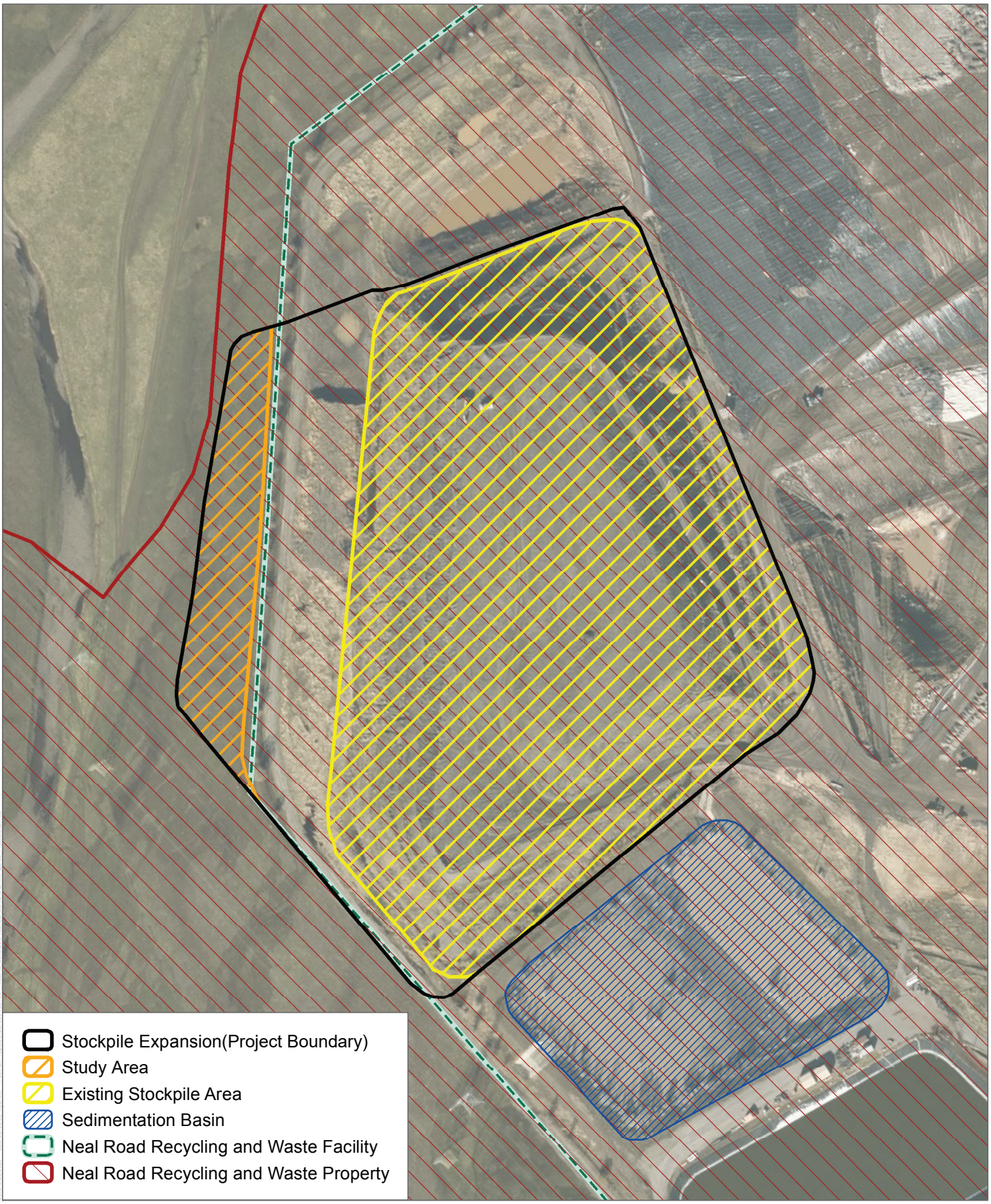
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Neal Road Recycling and Waste Facility Project



SOURCE: Bing Maps Aerial

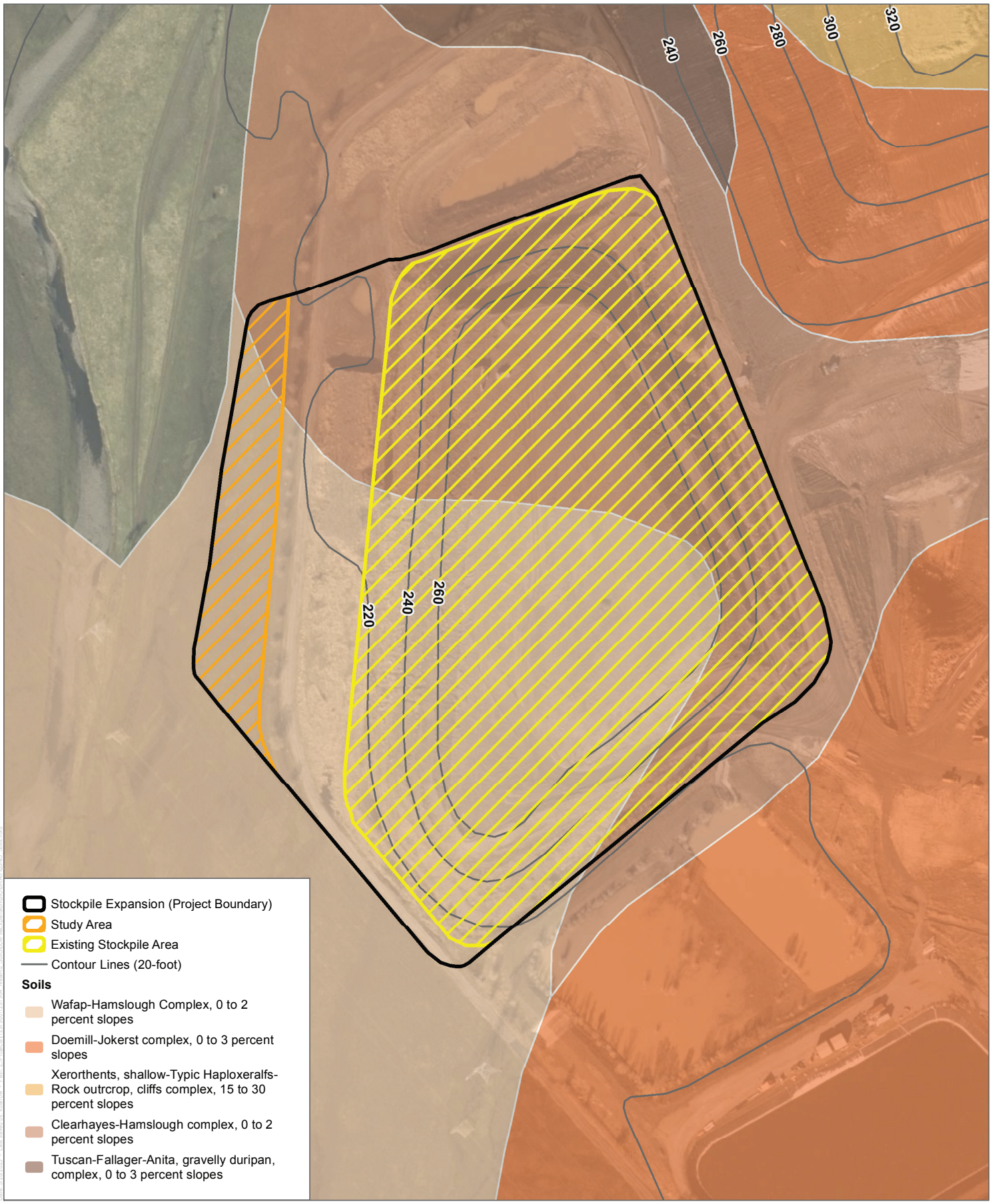
DUDEK

0 100 200 Feet

FIGURE 2

Project Site

Neal Road Recycling Waste Facility Project



SOURCE: Bing Maps Aerial, USDA, USGS 1/3 Arc Second 2022

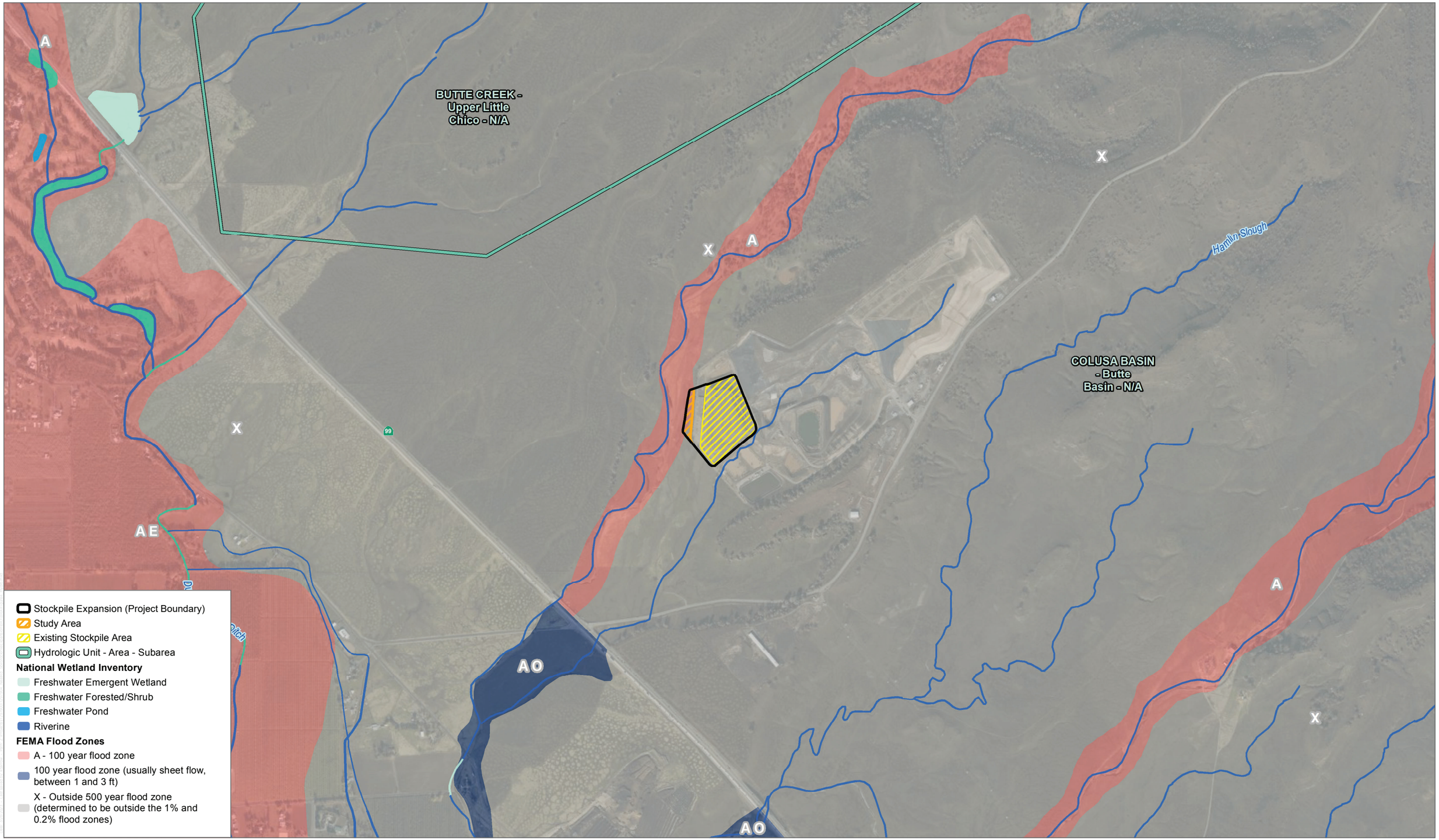
DUDEK

0 100 200 Feet

FIGURE 3

Soils and Terrain

Neal Road Recycling Waste Facility Project



SOURCE: Bing Maps, USFWS, USGS, FEMA

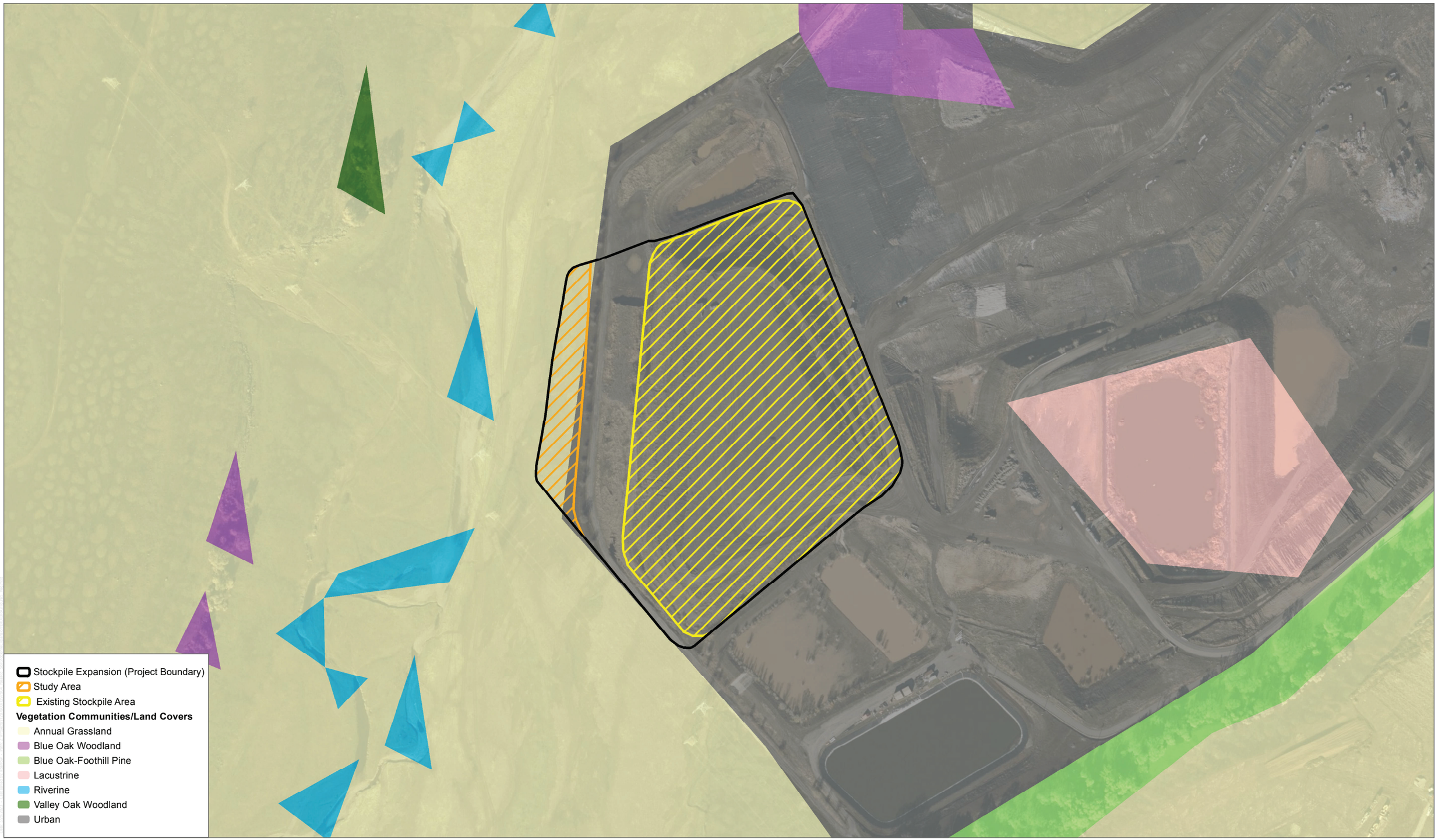
DUDEK

0 500 1,000 Feet

FIGURE 4

Hydrology and Watershed

Neal Road Recycling Waste Facility Project



SOURCE: Bing Maps Aerial, FRAP 2015

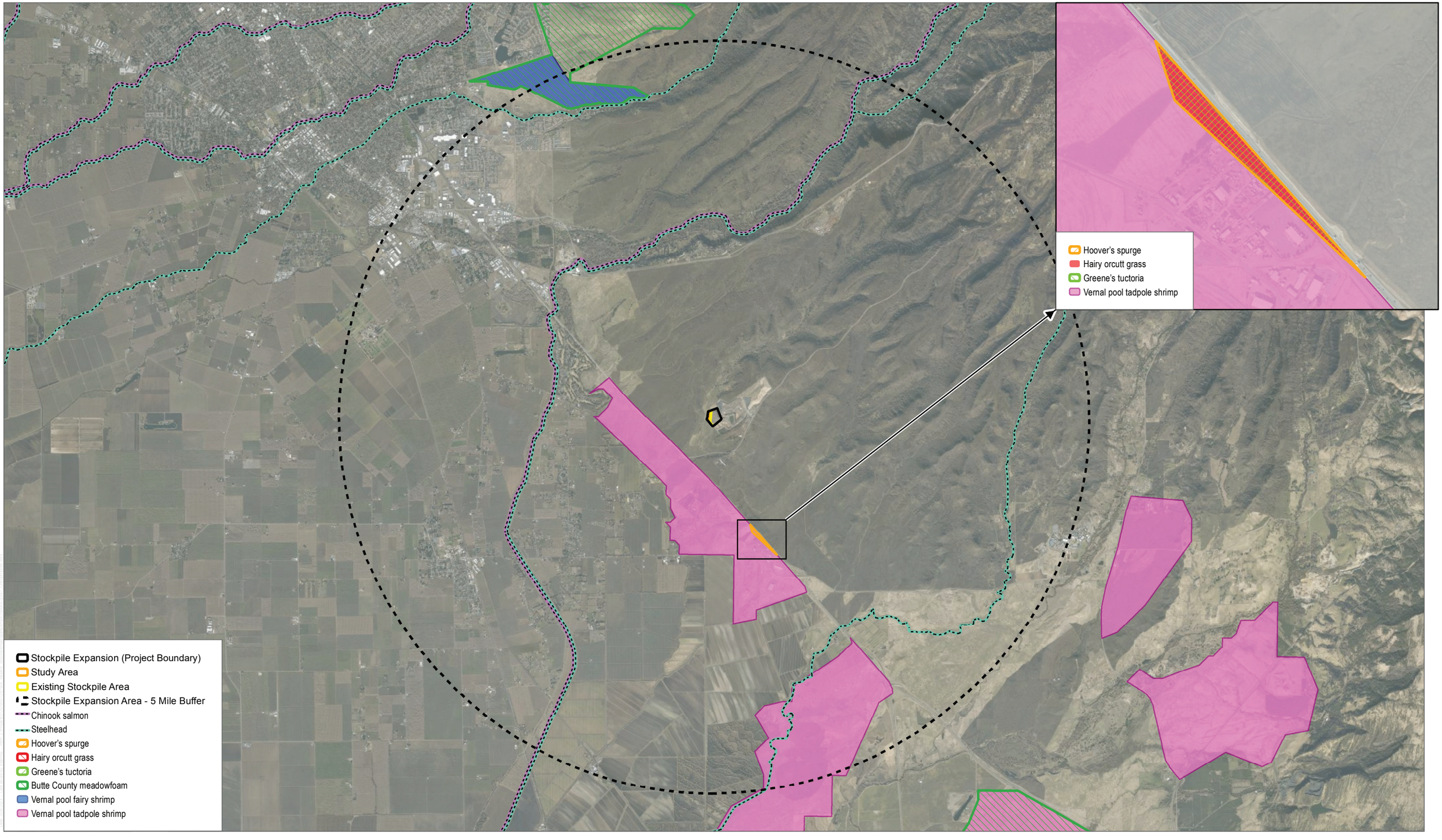
DUDEK

0 125 250 Feet

FIGURE 5

Vegetation Communities and Land Covers

Neal Road Recycling Waste Facility Project



SOURCE: Bing Maps, USFWS 2020

DUDEK

0 3,200 6,400 Feet

FIGURE 6

UFWS-Designated Critical Habitat

Neal Road Recycling Waste Facility Project

Attachment A

Photo Log

Photo 1. Potential wetland swale located in the study area. Sediment sorting visible along with hydrology.

Photo 2. Evidence of active cattle grazing within annual grassland habitat in the study area.

Photo 3. Image depicting Common stickyweed (*Blennosperma nanum*), a species that usually occurs in wetlands located in the study area.

Photo 4. Suitable habitat for nesting birds and raptors south of the study area.

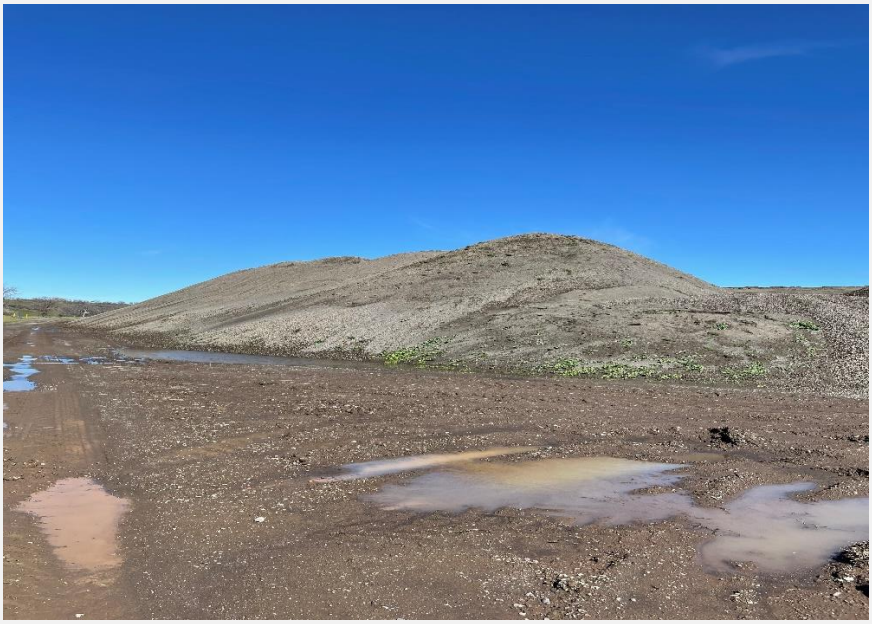


Photo 5. Image depicting existing soil stockpiles that are located south of the study area.

Photo 6. Image depicting a potential wetland swale just north of the study area.

Attachment B

Wildlife Compendium

Wildlife Species

Birds

ICTERIDAE – BLACKBIRDS

Euphagus cyanocephalus – Brewer's blackbird

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch

CATHARTIDAE – NEW WORLD VULTURES

Cathartes aura – turkey vulture

PICIDAE – WOODPECKERS AND ALLIES

Colaptes auratus – northern flicker

Melanerpes formicivorus – acorn woodpecker

Attachment C

Plant Compendium

Plant Species

ASTERACEAE – SUNFLOWER FAMILY

Blennosperma nanum – common stickyseed

* *Centaurea solstialis* – yellow star thistle

Centromadia sp.

* *Hypochaeris glabra* – smooth cat's ear

Layia platyglossa – coastal tidytips

BRASSICACEAE – MUSTARD FAMILY

Lepidium spp.

FAGACEAE – OAK FAMILY

Quercus douglasii – blue oak

Quercus lobata – valley oak

GERANIACEAE – GERANIUM FAMILY

* *Erodium botrys* – longbeak stork's bill

* *Erodium cicutarium* – redstem stork's bill

OROBANCHAECEAE – BROOM-RAPE FAMILY

Castilleja sp.

* signifies introduced (non-native) species

Attachment D

Plant PTO Tables

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Allium jepsonii	Jepson's onion	None/None/1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Serpentinite, Volcanic/perennial bulbiferous herb/ Apr–Aug/985–4,330	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Balsamorhiza macrolepis	big-scale balsamroot	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; Serpentinite (sometimes)/perennial herb/Mar–June/ 150–5,100	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat.
Campylopodiella stenocarpa	flagella-like atractylocarpus	None/None/2B.2	Cismontane woodland/moss// 330–1,640	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Cardamine pachystigma var. *dissectifolia*	dissected-leaved toothwort	None/None/1B.2	Chaparral, Lower montane coniferous forest; Rocky, Serpentinite (usually)/perennial rhizomatous herb/Feb–May/835–6,885	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Carex xerophila	chaparral sedge	None/None/1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Gabbroic, Serpentinite/perennial herb/Mar–June/ 1,440–2,525	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Castilleja rubicundula var. *rubicundula*	pink creamsacs	None/None/1B.2	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland; Serpentinite/annual herb (hemiparasitic)/Apr–June/65–2,985	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat with identifiable water features which could support this species.
Clarkia gracilis ssp. *albicaulis*	white-stemmed clarkia	None/None/1B.2	Chaparral, Cismontane woodland; Serpentinite (sometimes)/annual herb/May–July/805–3,555	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Clarkia mildrediae ssp. *mildrediae*	Mildred's clarkia	None/None/1B.3	Cismontane woodland, Lower montane coniferous forest; Granitic (usually), Sandy/annual herb/May–Aug/ 805–5,610	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Clarkia mosquinii	Mosquin's clarkia	None/None/1B.1	Cismontane woodland, Lower montane coniferous forest; Roadsides, Rocky/ annual herb/May–July (Sep)/605–4,885	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Delphinium recurvatum	recurved larkspur	None/None/1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland; Alkaline/ perennial herb/Mar–June/10–2,590	**Not expected to occur.** The Project Boundary lacks alkaline soils that support this species.
Eriogonum umbellatum var. *ahartii*	Ahart's buckwheat	None/None/1B.2	Chaparral, Cismontane woodland; Openings, Serpentinite, Slopes/perennial herb/June–Sep/1,310–6,560	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Euphorbia hooveri	Hoover's spurge	FT/None/1B.2	Vernal pools/annual herb/ July–Sep(Oct)/80–820	**Moderate potential to occur.** The study area within the Project Boundary is within this species elevation range and contains aquatic features that could potentially support this species. An aquatic resources jurisdictional delineation would be able to confirm if vernal pools are present within the study area.
Frangula purshiana ssp. *ultramafica*	Caribou coffeeberry	None/None/1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Serpentinite/perennial deciduous shrub/May–July/2,705–6,330	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Fritillaria pluriflora	adobe-lily	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; Adobe (often)/ perennial bulbiferous herb/Feb–Apr/ 195–2,310	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat that could support this species.
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	None/None/1B.2	Marshes and swamps/perennial rhizomatous herb (emergent)/June–Sep/ 0–395	**Not expected to occur.** No suitable marshes and swamps within the Project Boundary.
Imperata brevifolia	California satintail	None/None/2B.1	Chaparral, Coastal scrub, Meadows and seeps, Mojavean desert scrub, Riparian scrub; Mesic/perennial rhizomatous herb/Sep–May/0–3,985	**Not expected to occur.** No suitable habitat present within the Project Boundary.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Juncus leiospermus var. *leiospermus*	Red Bluff dwarf rush	None/None/1B.1	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools; Vernally Mesic/ annual herb/Mar–June/115–4,100	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains aquatic features that could potentially support this species. An aquatic resources jurisdictional delineation would be able to confirm if vernal pools are present within the study area.
Layia septentrionalis	Colusa layia	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; Sandy, Serpentinite/annual herb/Apr–May/ 330–3,590	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Limnanthes floccosa ssp. *californica*	Butte County meadowfoam	FE/SE/1B.1	Valley and foothill grassland, Vernal pools/annual herb/Mar–May/ 150–3,050	**Moderate potential to occur.** The study area is within the Project Boundary of this species' known elevation range and contains grassland habitat. Aquatic features were identified within the study area that could support this species. An aquatic resources delineation would be able to confirm the presence or absence of vernal pools.
Monardella venosa	veiny monardella	None/None/1B.1	Cismontane woodland, Valley and foothill grassland; Clay/annual herb/May–July/ 195–1,345	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat with clay soils.
Packera eurycephala var. *lewisrosei*	Lewis Rose's ragwort	None/None/1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest; Serpentinite/ perennial herb/Mar–July(Aug–Sep)/ 900–6,200	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Paronychia ahartii	Ahart's paronychia	None/None/1B.1	Cismontane woodland, Valley and foothill grassland, Vernal pools/annual herb/ Feb–June/100–1,670	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat. Aquatic

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				features were identified within the study area that could support this species. An aquatic resources delineation would be able to confirm the presence or absence of vernal pools.
Penstemon personatus	closed-throated beardtongue	None/None/1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest/perennial herb/June–Sep(Oct)/ 3,490–6,955	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Rhynchospora californica	California beaked-rush	None/None/1B.1	Bogs and fens, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps/perennial rhizomatous herb/May–July/150–3,310	**Not expected to occur.** No suitable habitat present within the Project Boundary.
Rhynchospora capitellata	brownish beaked-rush	None/None/2B.2	Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Upper montane coniferous forest; Mesic/perennial herb/July–Aug/ 150–6,560	**Not expected to occur.** No suitable habitat present within the Project Boundary.
Sidalcea robusta	Butte County checkerbloom	None/None/1B.2	Chaparral, Cismontane woodland/ perennial rhizomatous herb/Apr–June/ 295–5,245	**Low potential to occur.** The study area within the Project Boundary is outside of this species' known elevation range, however, there are multiple occurrences reported within the general vicinity and there is only a 15 foot elevation difference.
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	None/None/2B.2	Marshes and swamps/perennial rhizomatous herb (aquatic)/May–July/ 985–7,050	**Not expected to occur.** The Project Boundary is outside of this species' known elevation range.
Trifolium jokerstii	Butte County golden clover	None/None/1B.2	Valley and foothill grassland, Vernal pools/annual herb/Mar–May/ 165–1,570	**Moderate potential to occur.** The study area within the Project Boundary is within this species' known elevation range and contains grassland habitat. Aquatic features were identified within the study area that could support this species. An

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				aquatic resources delineation would be able to confirm the presence or absence of vernal pools.
Tuctoria greenei	Greene's tuctoria	FE/SR/1B.1	Vernal pools/annual herb/ May–July(Sep)/100–3,510	**Moderate potential to occur.** The study area within the Project Boundary is within this species elevation range and contains grassland habitat. Aquatic features were identified within the study area that could support this species. An aquatic resources delineation would be able to confirm the presence or absence of vernal pools.

Sources: CDFW 2023; CNDDB 2023.
Status:
California Rare Plant Rank (CRPR) Status and Threat Rank
1B: plants rare, threatened, or endangered in California and elsewhere
2B: plants rare, threatened, or endangered in California but more common elsewhere
0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2: Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
0 .3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
None = No conservation status.
Potential for Occurrence Ranks:
Moderate potential to occur. The study area or Project Boundary is within the known range of the species, and habitat for the species is present.
Low potential to occur. The study area or Project Boundary is within the known range of the species, but habitat for the species is marginal and of low quality.
Not expected to occur: The study area or Project Boundary is outside the known range of the species, and habitat for the species is either absent or of low quality.

Attachment E

Wildlife PTO Tables

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	None/SSC	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Not expected to occur.** Project Boundary does not contain suitable habitat for this species.
Rana boylii pop. 2	foothill yellow-legged frog - Feather River DPS	FPT/ST	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Not expected to occur.** Project Boundary does not contain suitable habitat for this species.
Spea hammondii	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	**Moderate potential to occur.** The study area within the Project Boundary contains urban and annual grassland habitat, and aquatic features that have the potential to be vernal pool features. Additionally, the surrounding vicinity has valley-foothill woodland sensitive communities.
Reptiles				
Emys marmorata	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Low potential to occur.** The study area within the Project Boundary offers marginal habitat for this species. The study area is an annual grassland habitat with aquatic features lacking suitable refugia and limited basking sites.
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	**Low potential to occur.** There is no sandy soil within the study area within the Project Boundary. There are no known occurrences of this species within a 5-mile radius.
Thamnophis gigas	giant garter snake	FT/ST	Freshwater marsh habitat and low-gradient streams; also uses canals and irrigation ditches	**Low potential to occur.** The study area within the Project Boundary does not offer freshwater marsh habitat for this species. Additionally, there are no known occurrences of this species within a 5-mile radius.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	**Low potential to occur.** The study area within the Project Boundary does not offer suitable vegetation for this species. The study area within the Project Boundary lacks cattails, tules, and brambles for this species. Additionally, there are no known occurrences of this species within a 5-mile radius.
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Moderate potential to occur.** The study area within the Project Boundary is an annual grassland habitat with active grazing and ground squirrels within the area.
Buteo swainsoni (nesting)	Swainson's hawk	None/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	**Low potential to occur.** The study area within the Project Boundary does not offer large enough trees for nesting. Height of trees within Project Boundary are approximately 20-25 feet maximum, however, there are known occurrences of this species within a 5-mile radius.
Falco peregrinus anatum (nesting)	American peregrine falcon	FPD/FP, SCD	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	**Moderate potential to occur.** The study area within the Project Boundary offers suitable nearby riparian habitat for foraging. In addition, there are known occurrences of this species within a 5-radius.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FPD/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	**Not expected to occur.** The Project Boundary does not contain large water bodies suitable for this species. Additionally, there are no known occurrences within a 5-mile radius of the Project Boundary.
Lanius ludovicianus (nesting)	loggerhead shrike	None/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	**Low potential to occur.** The study area within the Project Boundary offers suitable nesting habitat for this species on trees adjacent to the study area. The study area is largely open grazed grassland, however, there are no

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				known occurrences of this species within a 5-mile radius.
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	**Low potential to occur.** The study area within the Project Boundary does not offer tidal marsh habitat for this species, however, there are known occurrences of this species within a 5-mile radius.
Setophaga petechia (nesting)	yellow warbler	None/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	**Low potential to occur.** The study area within the Project Boundary does not offer suitable habitat for this species. Additionally, there are no known occurrences of this species within a 5-mile radius.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	**Low potential to occur.** The study area within the Project Boundary is outside of species' nesting range. There are known occurrences of this species within a 5-mile radius, however the Project Boundary does not provide suitable dense riparian thickets.
Fishes				
Acipenser medirostris pop. 1	green sturgeon – southern DPS	FT/None	Spawns in deep pools in large, turbulent, freshwater rivers; adults live in oceanic waters, bays, and estuaries	**Not expected to occur.** Project Boundary does not contain suitable habitat for this species.
Oncorhynchus mykiss irideus pop. 11	steelhead – Central Valley DPS	FT/None	Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead	**Not expected to occur.** Project Boundary does not contain suitable habitat for this species.
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	FT/None	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries	**Not expected to occur.** Project Boundary does not contain suitable habitat for this species.
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	**Not expected to occur.** The Project Boundary lacks roosting habitat. There are no known occurrences of this species within a 5-mile radius.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	**Not expected to occur.** The Project Boundary lacks roosting habitat. There are no known occurrences of this species within a 5-mile radius.
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	**Not expected to occur.** The Project Boundary lacks roosting habitat.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	**Low potential to occur.** No suitable denning habitat for American Badger within the Project Boundary. There are no known occurrences of this species within a 5-mile radius.
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/SCE	Open grassland and scrub communities supporting suitable floral resources.	**Low potential to occur.** There are minimal floral resources present within the study area due to active grazing. There are no recorded occurrences within a 5-mile radius.
Bombus occidentalis	western bumble bee	None/SCE	Once common and widespread, species has declined precipitously from central California to southern British Columbia, perhaps from disease	**Low potential to occur.** There are minimal floral resources present within the study area due to active grazing. There are no recorded occurrences within a 5-mile radius.
Branchinecta lynchi	vernal pool fairy shrimp	FT/None	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	**Moderate potential to occur.** The study area within the Project Boundary contains aquatic resources. An aquatic resources jurisdictional delineation would be able to confirm the presence or absence of vernal pools.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/None	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus nigra ssp. caerulea)	**Not expected to occur**. No elderberry bushes were identified within the study area during the survey.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Lepidurus packardi	vernal pool tadpole shrimp	FE/None	Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales	**Moderate potential to occur.** The study area within the Project Boundary contains aquatic resources. An aquatic resources jurisdictional delineation would be able to confirm the presence or absence of vernal pools. There are occurrences within a 5-mile radius.

Sources: CDFW 2023
Status:
Federal
BCC: Bird of conservation concern
FC: Federally listed as a candidate species
FE: Federally listed as endangered
FPD: Ferally delisted protected species
FP: Federally listed as protected
FT: Federally listed as threatened
State
SE: State listed as endangered
SSC: Species of special concern
SR: State listed as recovered
ST: State listed as threatened
Moderate potential to occur. The study area within the Project Boundary is within the known range of the species, and habitat for the species is present.
Low potential to occur. The study area within the Project Boundary is within the known range of the species, but habitat for the species is marginal and of low quality.
Not expected to occur: The study area within the Project Boundary is outside the known range of the species, and habitat for the species is either absent or of low quality.

Appendix C
Cultural Resources Letter Report