Appendix A – RECM Outputs

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Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Todd Road at Standish Avenue Signalization Project

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.61	16.15	13.18	0.85	0.85	0.00	0.70	0.70	0.00	0.04	3,539.31	0.44	0.17	3,601.26
Grading/Excavation	1.44	12.14	11.99	0.58	0.58	0.00	0.44	0.44	0.00	0.04	4,292.53	0.84	0.18	4,366.81
Drainage/Utilities/Sub-Grade	3.68	29.78	33.14	1.65	1.65	0.00	1.43	1.43	0.00	0.08	7,373.38	1.82	0.21	7,480.37
Paving	2.42	23.19	22.86	1.28	1.28	0.00	1.08	1.08	0.00	0.05	4,815.45	1.00	0.18	4,895.07
Maximum (pounds/day)	3.68	29.78	33.14	1.65	1.65	0.00	1.43	1.43	0.00	0.08	7,373.38	1.82	0.21	7,480.37
Total (tons/construction project)	0.05	0.39	0.41	0.02	0.02	0.00	0.02	0.02	0.00	0.00	103.45	0.02	0.00	105.09

Notes:

Project Start Year ->	2021
Project Length (months) ->	2
Total Project Area (acres) ->	2
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	20	0	200	0	1,331	0
Grading/Excavation	20	0	200	0	1,331	0
Drainage/Utilities/Sub-Grade	0	0	200	0	1,331	0
Paving	0	0	200	0	1,331	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Todd Road at Standish Avenue Signalization Project

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.81	0.00	0.00	6.29
Grading/Excavation	0.01	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.05	0.01	0.00	30.50
Drainage/Utilities/Sub-Grade	0.02	0.20	0.22	0.01	0.01	0.00	0.01	0.01	0.00	0.00	49.68	0.01	0.00	45.72
Paving	0.01	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.90	0.00	0.00	12.82
Maximum (tons/phase)	0.02	0.20	0.22	0.01	0.01	0.00	0.01	0.01	0.00	0.00	49.68	0.01	0.00	45.72
Total (tons/construction project)	0.05	0.39	0.41	0.02	0.02	0.00	0.02	0.02	0.00	0.00	103.45	0.02	0.00	95.34

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix B – Special Status Species Tables

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Special-Status Plant Species in the Regional Vicinity (Nine Quad) of the Study Area

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Allium peninsulare var. *franciscanum* Franciscan onion	None/None G5T2/S2 1B.2	Cismontane woodland, Valley and foothill grassland. clay, volcanic, often serpentinite. 52 - 305 m. perennial bulbiferous herb. Blooms (Apr)May-Jun	Not Expected	Suitable elevation is not present.
Alopecurus aequalis var. *sonomensis* Sonoma alopecurus	FE/None G5T1/S1 1B.1	Marshes and swamps (freshwater), Riparian scrub. 5 - 365 m. perennial herb. Blooms May-Jul	Not Expected	Marshes, swamps, and riparian scrub are not present.
Amorpha californica var. *napensis* Napa false indigo	None/None G4T2/S2 1B.2	Broadleafed upland forest (openings), Chaparral, Cismontane woodland. 50 - 2000 m. perennial deciduous shrub. Blooms Apr-Jul	Not Expected	Suitable habitat and elevation are not present.
Amsinckia lunaris bent-flowered fiddleneck	None/None G3/S3 1B.2	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland. 3 - 500 m. annual herb. Blooms Mar-Jun	Not Expected	Native grasslands are not present. One historic occurrence (1940) has been reported 3.8 miles to the north (CDFW 2020a)
Arctostaphylos densiflora Vine Hill manzanita	None/SCE G1/S1 1B.1	Chaparral (acid marine sand). 50 - 120 m. perennial evergreen shrub. Blooms Feb-Apr	Not Expected	Suitable habitat and elevation are not present.
Arctostaphylos stanfordiana ssp. *decumbens* Rincon Ridge manzanita	None/None G3T1/S1 1B.1	Chaparral (rhyolitic), Cismontane woodland. 75 - 370 m. perennial evergreen shrub. Blooms Feb-Apr(May)	Not Expected	Suitable habitat and elevation are not present.
Astragalus claranus Clara Hunt's milk-vetch	FE/SCT G1/S1 1B.1	Chaparral (openings), Cismontane woodland, Valley and foothill grassland. serpentinite or volcanic, rocky, clay. 75 - 275 m. annual herb. Blooms Mar-May	Not Expected	Suitable habitat and elevation are not present.
Balsamorhiza macrolepis big-scale balsamroot	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. sometimes serpentinite. 45 - 1555 m. perennial herb. Blooms Mar-Jun	Not Expected	Suitable habitat and elevation are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Blennosperma bakeri Sonoma sunshine	FE/SCE G1/S1 1B.1	Valley and foothill grassland (mesic), Vernal pools. 10 - 110 m. annual herb. Blooms Mar-May	Not Expected	Ruderal grasslands within the project site are heavily disturbed and vernal pools are not present within the site. Eleven (11) occurrences, three (3) of which are historic, have been reported within 5 miles in undeveloped areas with seasonal wetlands and vernal pools (CDFW 2020a).
Brodiaea leptandra narrow-anthered brodiaea	None/None G3?/S3? 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland. volcanic. 110 - 915 m. perennial bulbiferous herb. Blooms May-Jul	Not Expected	Suitable habitat and elevation are not present.
Calamagrostis crassiglumis Thurber's reed grass	None/None G3Q/S2 2B.1	Coastal scrub (mesic), Marshes and swamps (freshwater). 10 - 60 m. perennial rhizomatous herb. Blooms May-Aug	Not Expected	Suitable habitat is not present.
Campanula californica swamp harebell	None/None G3/S3 1B.2	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Marshes and swamps (freshwater), North Coast coniferous forest. mesic. 1 - 405 m. perennial rhizomatous herb. Blooms Jun-Oct	Not Expected	Suitable habitat is not present.
Castilleja uliginosa Pitkin Marsh paintbrush	None/SCE GXQ/SX 1A	Marshes and swamps (freshwater). 240 - 240 m. perennial herb (hemiparasitic). Blooms Jun-Jul	Not Expected	Suitable habitat and elevation are not present.
Ceanothus confusus Rincon Ridge ceanothus	None/None G1/S1 1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland. volcanic or serpentinite. 75 - 1065 m. perennial evergreen shrub. Blooms Feb-Jun	Not Expected	Suitable habitat and elevation are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Ceanothus divergens Calistoga ceanothus	None/None G2/S2 1B.2	Chaparral (serpentinite or volcanic, rocky). 170 - 950 m. perennial evergreen shrub. Blooms Feb-Apr	Not Expected	Suitable habitat and elevation are not present.
Ceanothus foliosus var. *vineatus* Vine Hill ceanothus	None/None G3T1/S1 1B.1	Chaparral. 45 - 305 m. perennial evergreen shrub. Blooms Mar-May	Not Expected	Suitable elevation and habitat are not present.
Ceanothus purpureus holly-leaved ceanothus	None/None G2/S2 1B.2	Chaparral, Cismontane woodland. volcanic, rocky. 120 - 640 m. perennial evergreen shrub. Blooms Feb-Jun	Not Expected	Suitable elevation and habitat are not present.
Ceanothus sonomensis Sonoma ceanothus	None/None G2/S2 1B.2	Chaparral (sandy, serpentinite or volcanic). 215 - 800 m. perennial evergreen shrub. Blooms Feb-Apr	Not Expected	Suitable elevation and habitat are not present.
Centromadia parryi ssp. *parryi* pappose tarplant	None/None G3T2/S2 1B.2	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic). often alkaline. 0 - 420 m. annual herb. Blooms May-Nov	Not Expected	Suitable habitat is not present.
Chorizanthe valida Sonoma spineflower	FE/SCE G1/S1 1B.1	Coastal prairie (sandy). 10 - 305 m. annual herb. Blooms Jun-Aug	Not Expected	Suitable habitat is not present.
Clarkia imbricata Vine Hill clarkia	FE/SCE G1/S1 1B.1	Chaparral, Valley and foothill grassland. acidic sandy loam. 50 - 75 m. annual herb. Blooms Jun-Aug	Not Expected	Suitable elevation and habitat are not present.
Cordylanthus tenuis ssp. *capillaris* Pennell's bird's-beak	FE/SCR G4G5T1/S1 1B.2	Closed-cone coniferous forest, Chaparral. serpentinite. 45 - 305 m. annual herb (hemiparasitic). Blooms Jun-Sep	Not Expected	Suitable elevation and habitat are not present.
Cuscuta obtusiflora var. *glandulosa* Peruvian dodder	None/None G5T4?/SH 2B.2	Marshes and swamps (freshwater). 15 - 280 m. annual vine (parasitic). Blooms Jul-Oct	Not Expected	Suitable habitat is not present.
Delphinium luteum golden larkspur	FE/SCR G1/S1 1B.1	Chaparral, Coastal prairie, Coastal scrub. rocky. 0 - 100 m. perennial herb. Blooms Mar-May	Not Expected	Suitable habitat is not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Downingia pusilla dwarf downingia	None/None GU/S2 2B.2	Valley and foothill grassland (mesic), Vernal pools. 1 - 445 m. annual herb. Blooms Mar-May	Not Expected	Ruderal grasslands within the project site are heavily disturbed and vernal pools are not present within the site. Two (2) occurrences have been reported within 5 miles in undeveloped areas with vernal pools and swales (CDFW 2020a).
Erigeron serpentinus serpentine daisy	None/None G2/S2 1B.3	Chaparral (serpentinite, seeps). 60 - 670 m. perennial herb. Blooms May-Aug	Not Expected	Suitable elevation and habitat are not present.
Eryngium constancei Loch Lomond button-celery	FE/SCE G1/S1 1B.1	Vernal pools. 460 - 855 m. annual / perennial herb. Blooms Apr-Jun	Not Expected	Suitable elevation and habitat are not present.
Fritillaria liliacea fragrant fritillary	None/None G2/S2 1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. Often serpentinite. 3 - 410 m. perennial bulbiferous herb. Blooms Feb-Apr	Not Expected	Ruderal grasslands within the project site are heavily disturbed, and no native grasslands are present. Six (6) occurrences, four (4) of which are historic, have been reported within 5 miles. Non-historic occurrences are in undeveloped, protected open-space areas (CDFW 2020a).
Gilia capitata ssp. *tomentosa* woolly-headed gilia	None/None G5T1/S1 1B.1	Coastal bluff scrub, Valley and foothill grassland. Serpentinite, rocky, outcrops. 10 - 220 m. annual herb. Blooms May-Jul	Not Expected	Suitable habitat is not present.
Gratiola heterosepala Boggs Lake hedge-hyssop	None/SCE G2/S2 1B.2	Marshes and swamps (lake margins), Vernal pools. clay. 10 - 2375 m. annual herb. Blooms Apr-Aug	Not Expected	Suitable habitat is not present.
Hemizonia congesta ssp. *congesta* congested-headed hayfield tarplant	None/None G5T2/S2 1B.2	Valley and foothill grassland. sometimes roadsides. 20 - 560 m. annual herb. Blooms Apr-Nov	Low	Ruderal grasslands along roadsides are present within the site. Two (2) historic occurrences have been reported within 5 miles (CDFW 2020a).

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Horkelia tenuiloba thin-lobed horkelia	None/None G2/S2 1B.2	Broadleafed upland forest, Chaparral, Valley and foothill grassland. mesic openings, sandy. 50 - 500 m. perennial herb. Blooms May-Jul(Aug)	Not Expected	Suitable elevation and habitat are not present.
Lasthenia burkei Burke's goldfields	FE/SCE G1/S1 1B.1	Meadows and seeps (mesic), Vernal pools. 15 - 600 m. annual herb. Blooms Apr-Jun	Not Expected	Ruderal grasslands within the project site are heavily disturbed and vernal pools are not present within the site. Seven (7) occurrences presumed to be extant have been reported within 5 miles in undeveloped areas with vernal pools or wetland basins (CDFW 2020a).
Lasthenia californica ssp. *bakeri* Baker's goldfields	None/None G3T1/S1 1B.2	Closed-cone coniferous forest (openings), Coastal scrub, Meadows and seeps, Marshes and swamps. 60 - 520 m. perennial herb. Blooms Apr-Oct	Not Expected	Suitable elevation and habitat are not present.
Lasthenia conjugens Contra Costa goldfields	FE/None G1/S1 1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools. mesic. 0 - 470 m. annual herb. Blooms Mar-Jun	Not Expected	No native grasslands or vernal pools are present. No occurrences have been reported within 5 miles (CDFW 2020a).
Layia septentrionalis Colusa layia	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. sandy, serpentinite. 100 - 1095 m. annual herb. Blooms Apr-May	Not Expected	Suitable elevation and habitat are not present.
Legenere limosa legenere	None/None G2/S2 1B.1	Vernal pools. 1 - 880 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable habitat is not present.
Leptosiphon jepsonii Jepson's leptosiphon	None/None G2G3/S2S3 1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. usually volcanic. 100 - 500 m. annual herb. Blooms Mar-May	Not Expected	Suitable elevation and habitat are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Lilium pardalinum ssp. *pitkinense* Pitkin Marsh lily	FE/SCE G5T1/S1 1B.1	Cismontane woodland, Meadows and seeps, Marshes and swamps (freshwater). mesic, sandy. 35 - 65 m. perennial bulbiferous herb. Blooms Jun-Jul	Not Expected	Suitable habitat and soils are not present, and site is just below expected elevation range.
Limnanthes vinculans Sebastopol meadowfoam	FE/SCE G1/S1 1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools. vernally mesic. 15 - 305 m. annual herb. Blooms Apr-May	Not Expected	Native grasslands and vernal pools are not present. Thirty (30) occurrences have been reported within 5 miles in vernal pools and wet meadows in undeveloped areas (CDFW 2020a).
Lupinus sericatus Cobb Mountain lupine	None/None G2?/S2? 1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest. 275 - 1525 m. perennial herb. Blooms Mar-Jun	Not Expected	Suitable habitat and elevation are not present.
Microseris paludosa marsh microseris	None/None G2/S2 1B.2	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland. 5 - 355 m. perennial herb. Blooms Apr-Jun(Jul)	Not Expected	Native grasslands are not present. One historic occurrence has been reported within 5 miles (CDFW 2020a).
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	None/None G4T2/S2 1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools. Mesic. 5 - 1740 m. annual herb. Blooms Apr-Jul	Not Expected	Native grasslands and vernal pools are not present. Five (5) occurrences, three (3) of which are historic, have been reported within 5 miles (CDFW 2020a).
Navarretia leucocephala ssp. *plieantha* many-flowered navarretia	FE/SCE G4T1/S1 1B.2	Vernal pools (volcanic ash flow). 30 - 950 m. annual herb. Blooms May-Jun	Not Expected	Vernal pools and suitable soils are not present.
Penstemon newberryi var. *sonomensis* Sonoma beardtongue	None/None G4T2/S2 1B.3	Chaparral (rocky). 700 - 1370 m. perennial herb. Blooms Apr-Aug	Not Expected	Suitable habitat and elevation are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Plagiobothrys strictus Calistoga popcornflower	FE/SCT G1/S1 1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools. alkaline areas near thermal springs. 90 - 160 m. annual herb. Blooms Mar-Jun	Not Expected	Suitable habitat and elevation are not present.
Pleuropogon hooverianus North Coast semaphore grass	None/SCT G2/S2 1B.1	Broadleafed upland forest, Meadows and seeps, North Coast coniferous forest. open areas, mesic. 10 - 671 m. perennial rhizomatous herb. Blooms Apr-Jun	Not Expected	Suitable habitat is not present.
Poa napensis Napa blue grass	FE/SCE G1/S1 1B.1	Meadows and seeps, Valley and foothill grassland. alkaline, near thermal springs. 100 - 200 m. perennial herb. Blooms May-Aug	Not Expected	Suitable habitat and elevation are not present.
Potentilla uliginosa Cunningham Marsh cinquefoil	None/None GH/SH 1A	Marshes and swamps. Freshwater, permanent oligotrophic wetlands. 30 - 40 m. perennial herb. Blooms May-Aug	Not Expected	Suitable habitat is not present.
Puccinellia simplex California alkali grass	None/None G3/S2 1B.2BLM_S-Sensitive	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools. Alkaline, vernally mesic; sinks, flats, and lake margins. 2 - 930 m. annual herb. Blooms Mar-May	Not Expected	Suitable habitat and alkaline soils are not present. No occurrences have been reported within 5 miles (CDFW 2020a).
Rhynchospora alba white beaked-rush	None/None G5/S2 2B.2	Bogs and fens, Meadows and seeps, Marshes and swamps (freshwater). 60 - 2040 m. perennial rhizomatous herb. Blooms Jun-Aug	Not Expected	Suitable habitat and elevation are not present.
Rhynchospora californica California beaked-rush	None/None G1/S1 1B.1BLM_S-Sensitive	Bogs and fens, Lower montane coniferous forest, Meadows and seeps (seeps), Marshes and swamps (freshwater). 45 - 1010 m. perennial rhizomatous herb. Blooms May-Jul	Not Expected	Suitable habitat and elevation are not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Rhynchospora capitellata brownish beaked-rush	None/None G5/S1 2B.2	Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Upper montane coniferous forest. mesic. 45 - 2000 m. perennial herb. Blooms Jul-Aug	Not Expected	Suitable habitat and elevation are not present.
Rhynchospora globularis round-headed beaked-rush	None/None G4/S1 2B.1	Marshes and swamps (freshwater). 45 - 60 m. perennial rhizomatous herb. Blooms Jul-Aug	Not Expected	Suitable habitat and elevation are not present.
Sidalcea hickmanii ssp. *napensis* Napa checkerbloom	None/None G3T1/S1 1B.1	Chaparral. rhyolitic. 415 - 610 m. perennial herb. Blooms Apr-Jun	Not Expected	Suitable habitat and elevation are not present.
Sidalcea oregana ssp. *valida* Kenwood Marsh checkerbloom	FE/SCE G5T1/S1 1B.1	Marshes and swamps (freshwater). 115 - 150 m. perennial rhizomatous herb. Blooms Jun-Sep	Not Expected	Suitable habitat and elevation are not present.
Spergularia macrotheca var. *longistyla* long-styled sand-spurrey	None/None G5T2/S2 1B.2	Meadows and seeps, Marshes and swamps. Alkaline. 0 - 255 m. perennial herb. Blooms Feb-May(Jun)	Not Expected	Suitable habitat is not present, and no occurrences have been reported within 5 miles (CDFW 2020a).
Trifolium amoenum two-fork clover	FE/None G1/S1 1B.1	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite). 5 - 415 m. annual herb. Blooms Apr-Jun	Not Expected	Suitable habitat is not present.
Trifolium buckwestiorum Santa Cruz clover	None/None G2/S2 1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie. gravelly, margins. 105 - 610 m. annual herb. Blooms Apr-Oct	Not Expected	Suitable habitat and elevation are not present.
Trifolium hydrophilum saline clover	None/None G2/S2 1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools. 0 - 300 m. annual herb. Blooms Apr-Jun	Not Expected	Native grasslands and vernal pools are not present. Five (5) occurrences, three (3) of which are historic, have been reported within 5 miles in vernal pools and wet meadows.
Triquetrella californica coastal triquetrella	None/None G2/S2 1B.2	Coastal bluff scrub, Coastal scrub. soil. 10 - 100 m. moss.	Not Expected	Suitable habitat is not present.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Viburnum ellipticum oval-leaved viburnum	None/None G4G5/S3? 2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. 215 - 1400 m. perennial deciduous shrub. Blooms May-Jun	Not Expected	Suitable habitat and elevation are not present.

Regional Vicinity refers to within a 9-quad search radius of site.

FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate Species

SE = State Endangered ST = State Threatened SC = State Candidate SR = State Rare

CRPR (CNPS California Rare Plant Rank)

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Special-Status Animal Species in the Regional Vicinity (Nine Quad) of the Study Area

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Bombus crotchii Crotch bumble bee	None/SCE G3G4/S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia,* and *Eriogonum*.	Not Expected	Suitable host plants are available, however presence in the site is unlikely due to disturbance. No recorded occurrences within 5 miles.
Bombus occidentalis western bumble bee	None/SCE G2G3/S1	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Not Expected	Suitable host plants are available, however presence in the site is unlikely due to disturbance. One historic occurrence is recorded within 5 miles (CDFW 2020a).
Syncaris pacifica California freshwater shrimp	FE/SE G2/S2	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main streamflow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	Not Expected	Suitable riparian habitat is not present.
Fish				
Hysterocarpus traskii pomo Russian River tule perch	None/None G5T4/S4 SSC	Low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover. They also require deep (> 1 m) pool habitat.	Not Expected	Suitable aquatic habitats are not present.
Lavinia symmetricus navarroensis Navarro roach	None/None G4T1T2/S2S3 SSC	Habitat generalists. Found in warm, intermittent streams as well as cold, well-aerated streams.	Not Expected	Suitable aquatic habitats are not present.
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	FE/SE G4/S2	Federal listing = pops between Punta Gorda & San Lorenzo River. State listing = pops south of Punta Gorda. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water & sufficient dissolved oxygen.	Not Expected	Suitable aquatic habitats are not present.
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	FT/None G5T2T3Q/S2S3	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	Not Expected	Suitable aquatic habitats are not present.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Amphibians				
Ambystoma californiense California tiger salamander	FT/ST G2G3/S2S3 WL	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Low	The project site is located within USFWS-designated critical habitat for this species. Marginally suitable habitat is present in ruderal grasslands and drainage ditches within the project site. Adjacent ruderal fields may contain burrows. Seventy (70) occurrences recorded within 5 miles of the project (CDFW 2020a).
Dicamptodon ensatus California giant salamander	None/None G3/S2S3 SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Not Expected	Suitable aquatic habitats are not present.
Rana boylii foothill yellow-legged frog	None/SE G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not Expected	Suitable aquatic habitats are not present
Rana draytonii California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Not Expected	Suitable aquatic habitats are not present
Taricha rivularis red-bellied newt	None/None G4/S2 SSC	Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Isolated population of uncertain origin in Santa Clara County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	Not Expected	Suitable aquatic habitats are not present

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Reptiles				
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low	Suitable habitat is not present within the site. Ruderal fields to the south of the project site may provide suitable upland habitat. The closest body of water that provides marginally suitable aquatic habitat is the canal that runs north-south, 400 feet (0.12 km) to the east of the project boundary. The SMART rail tracks occur between the steep-sided canal, which has vertical concrete sides to the south of Todd Road, creating a barrier to movement, thus it is unlikely that pond turtles will cross the tracks and enter the project site. Fifteen (15) occurrences recorded within 5 miles, all near streams or ponds without concrete banks (CDFW 2020a). Closest recorded occurrence (2004) is 1.65 miles SW of project site, on the east side of Highway 101.
Birds				
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood plains; also, live oaks.	Low	Trees within the study area and in the vicinity provide suitable nesting habitat, despite the lack of riparian habitat within the site. One occurrence has been recorded, 2.7 miles north of the site (CDFW 2020a).
Accipiter striatus sharp-shinned hawk	None/None G5/S4 WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	Not Expected	Suitable nesting habitat is not present.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Agelaius tricolor tricolored blackbird	None/ST G2G3/S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Not Expected	Suitable nesting habitat is not present.
Ammodramus savannarum grasshopper sparrow	None/None G5/S3 SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	Not Expected	Native grasslands and suitable nesting habitat are not present.
Aquila chrysaetos golden eagle	None/None G5/S3 SFP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not Expected	Suitable nesting habitat is not present, and the site is too small to provide foraging habitat.
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	Suitable nesting habitat and prey base are not present due to the small size and disturbed nature of ruderal areas in the project site.
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Not Expected	Suitable wintering habitat is not present.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE G5T2T3/S1 WL	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not Expected	Suitable nesting habitat is not present.
Coturnicops noveboracensis yellow rail	None/None G4/S1S2 SSC WL	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Not Expected	Suitable habitat is not present.
Elanus leucurus white-tailed kite	None/None G5/S3S4 SFP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Not Expected	Suitable nesting habitat is not present.
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County; also main part of San Joaquin Valley and east to foothills. Short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not Expected	Suitable nesting habitat is not present in the project site. No occurrences recorded within 5 miles (CDFW 2020a).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Falco peregrinus anatum American peregrine falcon	FD/SD G4T4/S3S4 SS SFP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not Expected	Suitable nesting habitat is not present.
Pandion haliaetus osprey	None/None G5/S4 SS WL	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Not Expected	Suitable nesting habitat is not present.
Riparia bank swallow	None/ST G5/S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Not Expected	Suitable nesting habitat is not present.
Mammals				
Antrozous pallidus pallid bat	None/None G5/S3 SSC | WBWG_H-High Priority	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Not Expected	Suitable roost habitats are not present. No occurrences are recorded with 5 miles of the site (CDFW 2020a).
Corynorhinus townsendii Townsend's big-eared bat	None/None G3G4/S2 SSC | WBWG_H-High Priority	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not Expected	Suitable roost habitats are not present. No occurrences are recorded with 5 miles of the site (CDFW 2020a).
Lasiurus blossevillii western red bat	None/None G5/S3 CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Not Expected	Suitable roost habitats are not present. No occurrences are recorded with 5 miles of the site (CDFW 2020a).
Taxidea taxus American badger	None/None G5/S3 CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not Expected	Suitable habitats are not present.

Regional Vicinity refers to within a 9-quad search radius of site.

FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate Species FS=Federally Sensitive

SE = State Endangered ST = State Threatened SCE = State Candidate SS=State Sensitive

SSC = CDFW Species of Special Concern SFP = State Fully Protected WL=State Watch List