

Appendix A

**Air Quality, Greenhouse Gas,
and Energy Calculations**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

Tuolumne County Resilience Center_Construction Only
Tuolumne County, Summer**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	12.00	1000sqft	0.28	12,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

Project Characteristics - Construction Run only.

Land Use -

Construction Phase - Anticipated construction duration is 14 months beginning in March 2021 and complete by May 2022

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - no saws would be used during grading plus hauling trucks would be used.

Off-road Equipment -

Trips and VMT - assumed 20 workers/day

Grading - approved grading plans indicate, 8000 cy of material would be excavated and removed

Vehicle Trips - construction run only

Energy Use - construction run only

Water And Wastewater - construction run only

Solid Waste - construction run only

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	6000	0
tblAreaCoating	Area_Nonresidential_Interior	18000	0
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	100.00	145.00
tblConstructionPhase	NumDays	2.00	45.00
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	1.00	45.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	14,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	68.40	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	13.00	40.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblVehicleTrips	ST_TR	10.37	0.00
tblVehicleTrips	SU_TR	36.63	0.00
tblVehicleTrips	WD_TR	9.11	0.00
tblWater	IndoorWaterUseRate	375,466.90	0.00
tblWater	OutdoorWaterUseRate	587,268.74	0.00

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1197	25.7507	15.8682	0.0619	1.7855	0.5876	2.3731	0.6887	0.5428	1.2315	0.0000	6,250.9315	6,250.9315	0.8960	0.0000	6,273.3318
2022	9.4839	7.4835	9.7574	0.0153	0.3420	0.3761	0.7181	0.0910	0.3460	0.4371	0.0000	1,495.6981	1,495.6981	0.3838	0.0000	1,505.2940
Maximum	9.4839	25.7507	15.8682	0.0619	1.7855	0.5876	2.3731	0.6887	0.5428	1.2315	0.0000	6,250.9315	6,250.9315	0.8960	0.0000	6,273.3318

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.1197	25.7507	15.8682	0.0619	1.7855	0.5876	2.3731	0.6887	0.5428	1.2315	0.0000	6,250.9315	6,250.9315	0.8960	0.0000	6,273.3318
2022	9.4839	7.4835	9.7574	0.0153	0.3420	0.3761	0.7181	0.0910	0.3460	0.4371	0.0000	1,495.6981	1,495.6981	0.3838	0.0000	1,505.2940
Maximum	9.4839	25.7507	15.8682	0.0619	1.7855	0.5876	2.3731	0.6887	0.5428	1.2315	0.0000	6,250.9315	6,250.9315	0.8960	0.0000	6,273.3318

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

[illegible]

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2569	1.0000e-005	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005	0.0000	2.8000e-003

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.2569	1.0000e-005	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005	0.0000	2.8000e-003

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/15/2021	5/14/2021	5	45	
2	Grading	Grading	5/15/2021	7/16/2021	5	45	
3	Building Construction	Building Construction	7/17/2021	2/4/2022	5	145	
4	Paving	Paving	2/5/2022	3/18/2022	5	30	
5	Architectural Coating	Architectural Coating	3/19/2022	4/29/2022	5	30	

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,000; Non-Residential Outdoor: 6,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Off-Highway Trucks	2	6.00	402	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	40.00	0.00	1,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	40.00	0.00	1,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	40.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.2 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5654	0.0000	0.5654	0.0626	0.0000	0.0626			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	0.6403	7.8204	4.0274	9.7300e-003	0.5654	0.2995	0.8649	0.0626	0.2755	0.3381		942.5842	942.5842	0.3049		950.2055

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4005	13.3973	3.7309	0.0328	0.6689	0.0603	0.7292	0.1824	0.0577	0.2401		3,432.3436	3,432.3436	0.0680		3,434.0429
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.7992	13.6406	6.5666	0.0363	0.9975	0.0638	1.0614	0.2696	0.0609	0.3305		3,778.3779	3,778.3779	0.0963		3,780.7863

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.2 Site Preparation - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5654	0.0000	0.5654	0.0626	0.0000	0.0626			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	0.6403	7.8204	4.0274	9.7300e-003	0.5654	0.2995	0.8649	0.0626	0.2755	0.3381	0.0000	942.5842	942.5842	0.3049		950.2055

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4005	13.3973	3.7309	0.0328	0.6689	0.0603	0.7292	0.1824	0.0577	0.2401		3,432.3436	3,432.3436	0.0680		3,434.0429
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.7992	13.6406	6.5666	0.0363	0.9975	0.0638	1.0614	0.2696	0.0609	0.3305		3,778.3779	3,778.3779	0.0963		3,780.7863

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.3 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7879	0.0000	0.7879	0.4191	0.0000	0.4191			0.0000			0.0000
Off-Road	1.3206	12.1102	9.3016	0.0255		0.5238	0.5238		0.4819	0.4819		2,472.5536	2,472.5536	0.7997		2,492.5455
Total	1.3206	12.1102	9.3016	0.0255	0.7879	0.5238	1.3118	0.4191	0.4819	0.9010		2,472.5536	2,472.5536	0.7997		2,492.5455

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4005	13.3973	3.7309	0.0328	0.6689	0.0603	0.7292	0.1824	0.0577	0.2401		3,432.3436	3,432.3436	0.0680		3,434.0429
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.7992	13.6406	6.5666	0.0363	0.9975	0.0638	1.0614	0.2696	0.0609	0.3305		3,778.3779	3,778.3779	0.0963		3,780.7863

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.3 Grading - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7879	0.0000	0.7879	0.4191	0.0000	0.4191			0.0000			0.0000
Off-Road	1.3206	12.1102	9.3016	0.0255		0.5238	0.5238		0.4819	0.4819	0.0000	2,472.5536	2,472.5536	0.7997		2,492.5455
Total	1.3206	12.1102	9.3016	0.0255	0.7879	0.5238	1.3118	0.4191	0.4819	0.9010	0.0000	2,472.5536	2,472.5536	0.7997		2,492.5455

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4005	13.3973	3.7309	0.0328	0.6689	0.0603	0.7292	0.1824	0.0577	0.2401		3,432.3436	3,432.3436	0.0680		3,434.0429
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.7992	13.6406	6.5666	0.0363	0.9975	0.0638	1.0614	0.2696	0.0609	0.3305		3,778.3779	3,778.3779	0.0963		3,780.7863

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.5600e-003	0.2486	0.0838	5.5000e-004	0.0134	8.9000e-004	0.0143	3.8600e-003	8.5000e-004	4.7100e-003		57.2160	57.2160	1.6700e-003		57.2577
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.4082	0.4920	2.9195	4.0500e-003	0.3420	4.4600e-003	0.3465	0.0910	4.1400e-003	0.0952		403.2502	403.2502	0.0300		404.0010

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.4 Building Construction - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.5600e-003	0.2486	0.0838	5.5000e-004	0.0134	8.9000e-004	0.0143	3.8600e-003	8.5000e-004	4.7100e-003		57.2160	57.2160	1.6700e-003		57.2577
Worker	0.3986	0.2433	2.8358	3.5000e-003	0.3286	3.5700e-003	0.3322	0.0872	3.2900e-003	0.0905		346.0343	346.0343	0.0284		346.7434
Total	0.4082	0.4920	2.9195	4.0500e-003	0.3420	4.4600e-003	0.3465	0.0910	4.1400e-003	0.0952		403.2502	403.2502	0.0300		404.0010

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.939 3	1,103.939 3	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.939 3	1,103.939 3	0.3570		1,112.865 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.7900e-003	0.2378	0.0753	5.5000e-004	0.0134	8.1000e-004	0.0143	3.8600e-003	7.8000e-004	4.6400e-003		56.9425	56.9425	1.5500e-003		56.9813
Worker	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475
Total	0.3847	0.4577	2.6047	3.9300e-003	0.3420	4.1600e-003	0.3462	0.0910	3.8600e-003	0.0949		391.7588	391.7588	0.0268		392.4288

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.4 Building Construction - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.939 3	1,103.939 3	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.939 3	1,103.939 3	0.3570		1,112.865 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.7900e-003	0.2378	0.0753	5.5000e-004	0.0134	8.1000e-004	0.0143	3.8600e-003	7.8000e-004	4.6400e-003		56.9425	56.9425	1.5500e-003		56.9813
Worker	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475
Total	0.3847	0.4577	2.6047	3.9300e-003	0.3420	4.1600e-003	0.3462	0.0910	3.8600e-003	0.0949		391.7588	391.7588	0.0268		392.4288

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.824 6	1,035.824 6	0.3017		1,043.367 7
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.824 6	1,035.824 6	0.3017		1,043.367 7

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475
Total	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.5 Paving - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758	0.0000	1,035.824 6	1,035.824 6	0.3017		1,043.367 7
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758	0.0000	1,035.824 6	1,035.824 6	0.3017		1,043.367 7

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475
Total	0.3759	0.2199	2.5294	3.3800e-003	0.3286	3.3500e-003	0.3319	0.0872	3.0800e-003	0.0902		334.8163	334.8163	0.0253		335.4475

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.2700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	9.4745	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.4000e-003	5.5000e-003	0.0632	8.0000e-005	8.2100e-003	8.0000e-005	8.3000e-003	2.1800e-003	8.0000e-005	2.2600e-003		8.3704	8.3704	6.3000e-004		8.3862
Total	9.4000e-003	5.5000e-003	0.0632	8.0000e-005	8.2100e-003	8.0000e-005	8.3000e-003	2.1800e-003	8.0000e-005	2.2600e-003		8.3704	8.3704	6.3000e-004		8.3862

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

3.6 Architectural Coating - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.2700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	9.4745	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.4000e-003	5.5000e-003	0.0632	8.0000e-005	8.2100e-003	8.0000e-005	8.3000e-003	2.1800e-003	8.0000e-005	2.2600e-003		8.3704	8.3704	6.3000e-004		8.3862
Total	9.4000e-003	5.5000e-003	0.0632	8.0000e-005	8.2100e-003	8.0000e-005	8.3000e-003	2.1800e-003	8.0000e-005	2.2600e-003		8.3704	8.3704	6.3000e-004		8.3862

4.0 Operational Detail - Mobile

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Place of Worship	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Place of Worship	9.50	7.30	7.30	0.00	95.00	5.00	64	25	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Place of Worship	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Place of Worship	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Place of Worship	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Unmitigated	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2568					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Total	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2568					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Total	0.2569	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Summer

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

Tuolumne County Resilience Center_Construction Only
Tuolumne County, Annual**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	12.00	1000sqft	0.28	12,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

Project Characteristics - Construction Run only.

Land Use -

Construction Phase - Anticipated construction duration is 14 months beginning in March 2021 and complete by May 2022

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - no saws would be used during grading plus hauling trucks would be used.

Off-road Equipment -

Trips and VMT - assumed 20 workers/day

Grading - approved grading plans indicate, 8000 cy of material would be excavated and removed

Vehicle Trips - construction run only

Energy Use - construction run only

Water And Wastewater - construction run only

Solid Waste - construction run only

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	6000	0
tblAreaCoating	Area_Nonresidential_Interior	18000	0
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	100.00	145.00
tblConstructionPhase	NumDays	2.00	45.00
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	1.00	45.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	14,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	68.40	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	13.00	40.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblVehicleTrips	ST_TR	10.37	0.00
tblVehicleTrips	SU_TR	36.63	0.00
tblVehicleTrips	WD_TR	9.11	0.00
tblWater	IndoorWaterUseRate	375,466.90	0.00
tblWater	OutdoorWaterUseRate	587,268.74	0.00

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1492	1.5997	1.2001	3.3200e-003	0.0934	0.0485	0.1420	0.0278	0.0448	0.0726	0.0000	303.0209	303.0209	0.0475	0.0000	304.2082
2022	0.1705	0.2081	0.2907	4.5000e-004	8.9600e-003	0.0104	0.0194	2.3900e-003	9.7400e-003	0.0121	0.0000	38.9570	38.9570	9.0300e-003	0.0000	39.1827
Maximum	0.1705	1.5997	1.2001	3.3200e-003	0.0934	0.0485	0.1420	0.0278	0.0448	0.0726	0.0000	303.0209	303.0209	0.0475	0.0000	304.2082

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1492	1.5997	1.2001	3.3200e-003	0.0934	0.0485	0.1420	0.0278	0.0448	0.0726	0.0000	303.0207	303.0207	0.0475	0.0000	304.2081
2022	0.1705	0.2081	0.2907	4.5000e-004	8.9600e-003	0.0104	0.0194	2.3900e-003	9.7400e-003	0.0121	0.0000	38.9570	38.9570	9.0300e-003	0.0000	39.1826
Maximum	0.1705	1.5997	1.2001	3.3200e-003	0.0934	0.0485	0.1420	0.0278	0.0448	0.0726	0.0000	303.0207	303.0207	0.0475	0.0000	304.2081

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2021	5-31-2021	0.6725	0.6725
2	6-1-2021	8-31-2021	0.6166	0.6166
3	9-1-2021	11-30-2021	0.3163	0.3163
4	12-1-2021	2-28-2022	0.2785	0.2785
5	3-1-2022	5-31-2022	0.2101	0.2101
		Highest	0.6725	0.6725

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0469	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0469	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/15/2021	5/14/2021	5	45	
2	Grading	Grading	5/15/2021	7/16/2021	5	45	
3	Building Construction	Building Construction	7/17/2021	2/4/2022	5	145	
4	Paving	Paving	2/5/2022	3/18/2022	5	30	
5	Architectural Coating	Architectural Coating	3/19/2022	4/29/2022	5	30	

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,000; Non-Residential Outdoor: 6,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Off-Highway Trucks	2	6.00	402	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	40.00	0.00	1,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	40.00	0.00	1,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	40.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.2 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0127	0.0000	0.0127	1.4100e-003	0.0000	1.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0144	0.1760	0.0906	2.2000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	19.2397	19.2397	6.2200e-003	0.0000	19.3953
Total	0.0144	0.1760	0.0906	2.2000e-004	0.0127	6.7400e-003	0.0195	1.4100e-003	6.2000e-003	7.6100e-003	0.0000	19.2397	19.2397	6.2200e-003	0.0000	19.3953

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1400e-003	0.3131	0.0862	7.4000e-004	0.0145	1.3700e-003	0.0159	3.9800e-003	1.3100e-003	5.2900e-003	0.0000	69.7598	69.7598	1.4300e-003	0.0000	69.7955
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5200e-003	6.5900e-003	0.0614	7.0000e-005	7.1000e-003	8.0000e-005	7.1800e-003	1.8900e-003	7.0000e-005	1.9600e-003	0.0000	6.5681	6.5681	5.5000e-004	0.0000	6.5818
Total	0.0177	0.3196	0.1476	8.1000e-004	0.0216	1.4500e-003	0.0231	5.8700e-003	1.3800e-003	7.2500e-003	0.0000	76.3278	76.3278	1.9800e-003	0.0000	76.3774

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.2 Site Preparation - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0127	0.0000	0.0127	1.4100e-003	0.0000	1.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0144	0.1760	0.0906	2.2000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	19.2397	19.2397	6.2200e-003	0.0000	19.3952
Total	0.0144	0.1760	0.0906	2.2000e-004	0.0127	6.7400e-003	0.0195	1.4100e-003	6.2000e-003	7.6100e-003	0.0000	19.2397	19.2397	6.2200e-003	0.0000	19.3952

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1400e-003	0.3131	0.0862	7.4000e-004	0.0145	1.3700e-003	0.0159	3.9800e-003	1.3100e-003	5.2900e-003	0.0000	69.7598	69.7598	1.4300e-003	0.0000	69.7955
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5200e-003	6.5900e-003	0.0614	7.0000e-005	7.1000e-003	8.0000e-005	7.1800e-003	1.8900e-003	7.0000e-005	1.9600e-003	0.0000	6.5681	6.5681	5.5000e-004	0.0000	6.5818
Total	0.0177	0.3196	0.1476	8.1000e-004	0.0216	1.4500e-003	0.0231	5.8700e-003	1.3800e-003	7.2500e-003	0.0000	76.3278	76.3278	1.9800e-003	0.0000	76.3774

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.3 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0177	0.0000	0.0177	9.4300e-003	0.0000	9.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0297	0.2725	0.2093	5.7000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	50.4689	50.4689	0.0163	0.0000	50.8770
Total	0.0297	0.2725	0.2093	5.7000e-004	0.0177	0.0118	0.0295	9.4300e-003	0.0108	0.0203	0.0000	50.4689	50.4689	0.0163	0.0000	50.8770

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1400e-003	0.3131	0.0862	7.4000e-004	0.0145	1.3700e-003	0.0159	3.9800e-003	1.3100e-003	5.2900e-003	0.0000	69.7598	69.7598	1.4300e-003	0.0000	69.7955
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5200e-003	6.5900e-003	0.0614	7.0000e-005	7.1000e-003	8.0000e-005	7.1800e-003	1.8900e-003	7.0000e-005	1.9600e-003	0.0000	6.5681	6.5681	5.5000e-004	0.0000	6.5818
Total	0.0177	0.3196	0.1476	8.1000e-004	0.0216	1.4500e-003	0.0231	5.8700e-003	1.3800e-003	7.2500e-003	0.0000	76.3278	76.3278	1.9800e-003	0.0000	76.3774

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.3 Grading - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0177	0.0000	0.0177	9.4300e-003	0.0000	9.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0297	0.2725	0.2093	5.7000e-004		0.0118	0.0118		0.0108	0.0108	0.0000	50.4689	50.4689	0.0163	0.0000	50.8769
Total	0.0297	0.2725	0.2093	5.7000e-004	0.0177	0.0118	0.0295	9.4300e-003	0.0108	0.0203	0.0000	50.4689	50.4689	0.0163	0.0000	50.8769

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1400e-003	0.3131	0.0862	7.4000e-004	0.0145	1.3700e-003	0.0159	3.9800e-003	1.3100e-003	5.2900e-003	0.0000	69.7598	69.7598	1.4300e-003	0.0000	69.7955
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5200e-003	6.5900e-003	0.0614	7.0000e-005	7.1000e-003	8.0000e-005	7.1800e-003	1.8900e-003	7.0000e-005	1.9600e-003	0.0000	6.5681	6.5681	5.5000e-004	0.0000	6.5818
Total	0.0177	0.3196	0.1476	8.1000e-004	0.0216	1.4500e-003	0.0231	5.8700e-003	1.3800e-003	7.2500e-003	0.0000	76.3278	76.3278	1.9800e-003	0.0000	76.3774

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0465	0.4791	0.4358	6.8000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	60.0492	60.0492	0.0194	0.0000	60.5348
Total	0.0465	0.4791	0.4358	6.8000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	60.0492	60.0492	0.0194	0.0000	60.5348

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0153	5.4400e-003	3.0000e-005	7.8000e-004	5.0000e-005	8.3000e-004	2.3000e-004	5.0000e-005	2.8000e-004	0.0000	3.0926	3.0926	1.0000e-004	0.0000	3.0949
Worker	0.0227	0.0176	0.1637	2.0000e-004	0.0189	2.1000e-004	0.0192	5.0400e-003	2.0000e-004	5.2400e-003	0.0000	17.5148	17.5148	1.4700e-003	0.0000	17.5516
Total	0.0233	0.0329	0.1692	2.3000e-004	0.0197	2.6000e-004	0.0200	5.2700e-003	2.5000e-004	5.5200e-003	0.0000	20.6074	20.6074	1.5700e-003	0.0000	20.6465

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.4 Building Construction - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0465	0.4791	0.4358	6.8000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	60.0492	60.0492	0.0194	0.0000	60.5347
Total	0.0465	0.4791	0.4358	6.8000e-004		0.0269	0.0269		0.0247	0.0247	0.0000	60.0492	60.0492	0.0194	0.0000	60.5347

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9000e-004	0.0153	5.4400e-003	3.0000e-005	7.8000e-004	5.0000e-005	8.3000e-004	2.3000e-004	5.0000e-005	2.8000e-004	0.0000	3.0926	3.0926	1.0000e-004	0.0000	3.0949
Worker	0.0227	0.0176	0.1637	2.0000e-004	0.0189	2.1000e-004	0.0192	5.0400e-003	2.0000e-004	5.2400e-003	0.0000	17.5148	17.5148	1.4700e-003	0.0000	17.5516
Total	0.0233	0.0329	0.1692	2.3000e-004	0.0197	2.6000e-004	0.0200	5.2700e-003	2.5000e-004	5.5200e-003	0.0000	20.6074	20.6074	1.5700e-003	0.0000	20.6465

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.5800e-003	0.0878	0.0894	1.4000e-004		4.6500e-003	4.6500e-003		4.2800e-003	4.2800e-003	0.0000	12.5185	12.5185	4.0500e-003	0.0000	12.6197
Total	8.5800e-003	0.0878	0.0894	1.4000e-004		4.6500e-003	4.6500e-003		4.2800e-003	4.2800e-003	0.0000	12.5185	12.5185	4.0500e-003	0.0000	12.6197

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.0500e-003	1.0200e-003	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6411	0.6411	2.0000e-005	0.0000	0.6416
Worker	4.4600e-003	3.3000e-003	0.0303	4.0000e-005	3.9500e-003	4.0000e-005	3.9900e-003	1.0500e-003	4.0000e-005	1.0900e-003	0.0000	3.5302	3.5302	2.7000e-004	0.0000	3.5369
Total	4.5700e-003	6.3500e-003	0.0313	5.0000e-005	4.1100e-003	5.0000e-005	4.1600e-003	1.1000e-003	5.0000e-005	1.1500e-003	0.0000	4.1713	4.1713	2.9000e-004	0.0000	4.1785

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.4 Building Construction - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.5800e-003	0.0878	0.0894	1.4000e-004		4.6500e-003	4.6500e-003		4.2800e-003	4.2800e-003	0.0000	12.5185	12.5185	4.0500e-003	0.0000	12.6197
Total	8.5800e-003	0.0878	0.0894	1.4000e-004		4.6500e-003	4.6500e-003		4.2800e-003	4.2800e-003	0.0000	12.5185	12.5185	4.0500e-003	0.0000	12.6197

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.0500e-003	1.0200e-003	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.6411	0.6411	2.0000e-005	0.0000	0.6416
Worker	4.4600e-003	3.3000e-003	0.0303	4.0000e-005	3.9500e-003	4.0000e-005	3.9900e-003	1.0500e-003	4.0000e-005	1.0900e-003	0.0000	3.5302	3.5302	2.7000e-004	0.0000	3.5369
Total	4.5700e-003	6.3500e-003	0.0313	5.0000e-005	4.1100e-003	5.0000e-005	4.1600e-003	1.1000e-003	5.0000e-005	1.1500e-003	0.0000	4.1713	4.1713	2.9000e-004	0.0000	4.1785

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.5 Paving - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7000e-003	0.0888	0.1055	1.7000e-004		4.4400e-003	4.4400e-003		4.1400e-003	4.1400e-003	0.0000	14.0953	14.0953	4.1100e-003	0.0000	14.1979
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.7000e-003	0.0888	0.1055	1.7000e-004		4.4400e-003	4.4400e-003		4.1400e-003	4.1400e-003	0.0000	14.0953	14.0953	4.1100e-003	0.0000	14.1979

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9700e-003	0.0364	5.0000e-005	4.7400e-003	5.0000e-005	4.7900e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.2362	4.2362	3.3000e-004	0.0000	4.2443
Total	5.3500e-003	3.9700e-003	0.0364	5.0000e-005	4.7400e-003	5.0000e-005	4.7900e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.2362	4.2362	3.3000e-004	0.0000	4.2443

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.5 Paving - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7000e-003	0.0888	0.1055	1.7000e-004		4.4400e-003	4.4400e-003		4.1400e-003	4.1400e-003	0.0000	14.0953	14.0953	4.1100e-003	0.0000	14.1979
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.7000e-003	0.0888	0.1055	1.7000e-004		4.4400e-003	4.4400e-003		4.1400e-003	4.1400e-003	0.0000	14.0953	14.0953	4.1100e-003	0.0000	14.1979

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3500e-003	3.9700e-003	0.0364	5.0000e-005	4.7400e-003	5.0000e-005	4.7900e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.2362	4.2362	3.3000e-004	0.0000	4.2443
Total	5.3500e-003	3.9700e-003	0.0364	5.0000e-005	4.7400e-003	5.0000e-005	4.7900e-003	1.2600e-003	5.0000e-005	1.3100e-003	0.0000	4.2362	4.2362	3.3000e-004	0.0000	4.2443

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.6 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0700e-003	0.0211	0.0272	4.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	3.8299	3.8299	2.5000e-004	0.0000	3.8361
Total	0.1421	0.0211	0.0272	4.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	3.8299	3.8299	2.5000e-004	0.0000	3.8361

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	9.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1059	0.1059	1.0000e-005	0.0000	0.1061
Total	1.3000e-004	1.0000e-004	9.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1059	0.1059	1.0000e-005	0.0000	0.1061

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

3.6 Architectural Coating - 2022**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1391					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0700e-003	0.0211	0.0272	4.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	3.8299	3.8299	2.5000e-004	0.0000	3.8361
Total	0.1421	0.0211	0.0272	4.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	3.8299	3.8299	2.5000e-004	0.0000	3.8361

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	9.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1059	0.1059	1.0000e-005	0.0000	0.1061
Total	1.3000e-004	1.0000e-004	9.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1059	0.1059	1.0000e-005	0.0000	0.1061

4.0 Operational Detail - Mobile

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Place of Worship	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Place of Worship	9.50	7.30	7.30	0.00	95.00	5.00	64	25	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Place of Worship	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Mitigated

[illegible]

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Place of Worship	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Place of Worship	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Unmitigated	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Total	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Total	0.0469	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

7.0 Water Detail**7.1 Mitigation Measures Water**

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Place of Worship	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Place of Worship	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Place of Worship	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Place of Worship	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Tuolumne County Resilience Center_Construction Only - Tuolumne County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

Tuolumne County Resilience Center_Operational Run
Tuolumne County, Summer**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	12.00	1000sqft	0.28	12,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

Project Characteristics -

Land Use -

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Grading - this run is for operations only

Architectural Coating - this run is for operations only

Vehicle Trips - adjusted per VMT/trip rate provided by Wood Rodgers

Energy Mitigation -

Energy Use - Title 24-regulated energy reduced by 30% to adjust from 2016 to 2019 title 24

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,000.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	18,000.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblEnergyUse	T24E	0.62	0.43
tblEnergyUse	T24NG	3.20	2.24
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CC_TL	7.30	10.33
tblVehicleTrips	CC_TTP	95.00	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	64.00	100.00
tblVehicleTrips	ST_TR	10.37	28.82
tblVehicleTrips	SU_TR	36.63	28.82
tblVehicleTrips	WD_TR	9.11	28.82

2.0 Emissions Summary

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189	0.0000	104.6708	104.6708	7.2200e-003	0.0000	104.8514
2019	0.0710	0.3377	0.5471	1.0200e-003	0.0545	3.3900e-003	0.0579	0.0148	3.2300e-003	0.0180	0.0000	103.3314	103.3314	6.5700e-003	0.0000	103.4955
Maximum	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189	0.0000	104.6708	104.6708	7.2200e-003	0.0000	104.8514

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189	0.0000	104.6708	104.6708	7.2200e-003	0.0000	104.8514
2019	0.0710	0.3377	0.5471	1.0200e-003	0.0545	3.3900e-003	0.0579	0.0148	3.2300e-003	0.0180	0.0000	103.3314	103.3314	6.5700e-003	0.0000	103.4955
Maximum	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189	0.0000	104.6708	104.6708	7.2200e-003	0.0000	104.8514

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Energy	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216
Mobile	1.5543	4.6699	17.7103	0.0347	2.7716	0.0421	2.8137	0.7432	0.0395	0.7827		3,470.6311	3,470.6311	0.2067		3,475.7987
Total	1.8883	4.6782	17.7184	0.0347	2.7716	0.0427	2.8143	0.7432	0.0401	0.7834		3,480.4967	3,480.4967	0.2069	1.8000e-004	3,485.7231

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Energy	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216
Mobile	1.5543	4.6699	17.7103	0.0347	2.7716	0.0421	2.8137	0.7432	0.0395	0.7827		3,470.6311	3,470.6311	0.2067		3,475.7987
Total	1.8883	4.6782	17.7184	0.0347	2.7716	0.0427	2.8143	0.7432	0.0401	0.7834		3,480.4967	3,480.4967	0.2069	1.8000e-004	3,485.7231

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2018	11/14/2018	5	10	
2	Site Preparation	Site Preparation	11/15/2018	11/15/2018	5	1	
3	Grading	Grading	11/16/2018	11/19/2018	5	2	
4	Building Construction	Building Construction	11/20/2018	4/8/2019	5	100	
5	Paving	Paving	4/9/2019	4/15/2019	5	5	
6	Architectural Coating	Architectural Coating	4/16/2019	4/22/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	0	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	5.00	2.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	1.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.1 Mitigation Measures Construction**3.2 Demolition - 2018****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.2 Demolition - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

3.3 Site Preparation - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.3 Site Preparation - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

3.4 Grading - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.4 Grading - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

3.5 Building Construction - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0178	0.3203	0.1332	5.5000e-004	0.0134	3.7800e-003	0.0172	3.8600e-003	3.6200e-003	7.4800e-003		57.5909	57.5909	2.3900e-003		57.6508
Worker	0.0602	0.0407	0.4779	4.8000e-004	0.0411	5.3000e-004	0.0416	0.0109	4.9000e-004	0.0114		47.0799	47.0799	4.8300e-003		47.2007
Total	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189		104.6708	104.6708	7.2200e-003		104.8514

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.5 Building Construction - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0178	0.3203	0.1332	5.5000e-004	0.0134	3.7800e-003	0.0172	3.8600e-003	3.6200e-003	7.4800e-003		57.5909	57.5909	2.3900e-003		57.6508
Worker	0.0602	0.0407	0.4779	4.8000e-004	0.0411	5.3000e-004	0.0416	0.0109	4.9000e-004	0.0114		47.0799	47.0799	4.8300e-003		47.2007
Total	0.0780	0.3609	0.6111	1.0300e-003	0.0545	4.3100e-003	0.0588	0.0148	4.1100e-003	0.0189		104.6708	104.6708	7.2200e-003		104.8514

3.5 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0149	0.3008	0.1128	5.5000e-004	0.0134	2.8900e-003	0.0163	3.8600e-003	2.7600e-003	6.6300e-003		57.4614	57.4614	2.1500e-003		57.5151
Worker	0.0562	0.0369	0.4343	4.7000e-004	0.0411	5.0000e-004	0.0416	0.0109	4.6000e-004	0.0114		45.8700	45.8700	4.4200e-003		45.9804
Total	0.0710	0.3377	0.5471	1.0200e-003	0.0545	3.3900e-003	0.0579	0.0148	3.2200e-003	0.0180		103.3314	103.3314	6.5700e-003		103.4955

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.5 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0149	0.3008	0.1128	5.5000e-004	0.0134	2.8900e-003	0.0163	3.8600e-003	2.7600e-003	6.6300e-003		57.4614	57.4614	2.1500e-003		57.5151
Worker	0.0562	0.0369	0.4343	4.7000e-004	0.0411	5.0000e-004	0.0416	0.0109	4.6000e-004	0.0114		45.8700	45.8700	4.4200e-003		45.9804
Total	0.0710	0.3377	0.5471	1.0200e-003	0.0545	3.3900e-003	0.0579	0.0148	3.2200e-003	0.0180		103.3314	103.3314	6.5700e-003		103.4955

3.6 Paving - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.6 Paving - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

3.7 Architectural Coating - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0112	7.3800e-003	0.0869	9.0000e-005	8.2100e-003	1.0000e-004	8.3100e-003	2.1800e-003	9.0000e-005	2.2700e-003		9.1740	9.1740	8.8000e-004		9.1961
Total	0.0112	7.3800e-003	0.0869	9.0000e-005	8.2100e-003	1.0000e-004	8.3100e-003	2.1800e-003	9.0000e-005	2.2700e-003		9.1740	9.1740	8.8000e-004		9.1961

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

3.7 Architectural Coating - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0112	7.3800e-003	0.0869	9.0000e-005	8.2100e-003	1.0000e-004	8.3100e-003	2.1800e-003	9.0000e-005	2.2700e-003		9.1740	9.1740	8.8000e-004		9.1961
Total	0.0112	7.3800e-003	0.0869	9.0000e-005	8.2100e-003	1.0000e-004	8.3100e-003	2.1800e-003	9.0000e-005	2.2700e-003		9.1740	9.1740	8.8000e-004		9.1961

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5543	4.6699	17.7103	0.0347	2.7716	0.0421	2.8137	0.7432	0.0395	0.7827		3,470.6311	3,470.6311	0.2067		3,475.7987
Unmitigated	1.5543	4.6699	17.7103	0.0347	2.7716	0.0421	2.8137	0.7432	0.0395	0.7827		3,470.6311	3,470.6311	0.2067		3,475.7987

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Place of Worship	345.84	345.84	345.84	1,300,903	1,300,903
Total	345.84	345.84	345.84	1,300,903	1,300,903

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Place of Worship	0.00	10.33	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Place of Worship	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

5.0 Energy Detail

Historical Energy Use: N

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216
NaturalGas Unmitigated	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Place of Worship	83.8356	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216
Total		9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Place of Worship	0.0838356	9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216
Total		9.0000e-004	8.2200e-003	6.9000e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.8630	9.8630	1.9000e-004	1.8000e-004	9.9216

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Unmitigated	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2568					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Total	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2568					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003
Total	0.3331	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.6300e-003	2.6300e-003	1.0000e-005		2.8000e-003

7.0 Water Detail

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Summer

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

Tuolumne County Resilience Center_Operational Run
Tuolumne County, Annual**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	12.00	1000sqft	0.28	12,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	66
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

Project Characteristics -

Land Use -

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Off-road Equipment - this run is for operations only

Grading - this run is for operations only

Architectural Coating - this run is for operations only

Vehicle Trips - adjusted per VMT/trip rate provided by Wood Rodgers

Energy Mitigation -

Energy Use - Title 24-regulated energy reduced by 30% to adjust from 2016 to 2019 title 24

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,000.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	18,000.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblEnergyUse	T24E	0.62	0.43
tblEnergyUse	T24NG	3.20	2.24
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	CC_TL	7.30	10.33
tblVehicleTrips	CC_TTP	95.00	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	64.00	100.00
tblVehicleTrips	ST_TR	10.37	28.82
tblVehicleTrips	SU_TR	36.63	28.82
tblVehicleTrips	WD_TR	9.11	28.82

2.0 Emissions Summary

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.1400e-003	5.7000e-003	9.1100e-003	1.0000e-005	7.9000e-004	7.0000e-005	8.5000e-004	2.1000e-004	6.0000e-005	2.8000e-004	0.0000	1.3749	1.3749	1.0000e-004	0.0000	1.3773
2019	2.4300e-003	0.0124	0.0192	3.0000e-005	1.8600e-003	1.2000e-004	1.9800e-003	5.0000e-004	1.1000e-004	6.2000e-004	0.0000	3.1869	3.1869	2.1000e-004	0.0000	3.1920
Maximum	2.4300e-003	0.0124	0.0192	3.0000e-005	1.8600e-003	1.2000e-004	1.9800e-003	5.0000e-004	1.1000e-004	6.2000e-004	0.0000	3.1869	3.1869	2.1000e-004	0.0000	3.1920

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.1400e-003	5.7000e-003	9.1100e-003	1.0000e-005	7.9000e-004	7.0000e-005	8.5000e-004	2.1000e-004	6.0000e-005	2.8000e-004	0.0000	1.3749	1.3749	1.0000e-004	0.0000	1.3773
2019	2.4300e-003	0.0124	0.0192	3.0000e-005	1.8600e-003	1.2000e-004	1.9800e-003	5.0000e-004	1.1000e-004	6.2000e-004	0.0000	3.1869	3.1869	2.1000e-004	0.0000	3.1920
Maximum	2.4300e-003	0.0124	0.0192	3.0000e-005	1.8600e-003	1.2000e-004	1.9800e-003	5.0000e-004	1.1000e-004	6.2000e-004	0.0000	3.1869	3.1869	2.1000e-004	0.0000	3.1920

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-1-2018	1-31-2019	0.0119	0.0119
2	2-1-2019	4-30-2019	0.0104	0.0104
		Highest	0.0119	0.0119

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Energy	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	15.9109	15.9109	6.8000e-004	1.6000e-004	15.9765
Mobile	0.2481	0.9306	3.1323	5.9600e-003	0.4850	7.6600e-003	0.4927	0.1305	7.1900e-003	0.1377	0.0000	540.9195	540.9195	0.0329	0.0000	541.7420
Waste						0.0000	0.0000		0.0000	0.0000	13.8846	0.0000	13.8846	0.8206	0.0000	34.3985
Water						0.0000	0.0000		0.0000	0.0000	0.1191	1.1890	1.3081	0.0123	3.0000e-004	1.7047
Total	0.3091	0.9321	3.1336	5.9700e-003	0.4850	7.7700e-003	0.4928	0.1305	7.3000e-003	0.1378	14.0037	558.0195	572.0232	0.8664	4.6000e-004	593.8219

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Energy	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	15.9109	15.9109	6.8000e-004	1.6000e-004	15.9765
Mobile	0.2481	0.9306	3.1323	5.9600e-003	0.4850	7.6600e-003	0.4927	0.1305	7.1900e-003	0.1377	0.0000	540.9195	540.9195	0.0329	0.0000	541.7420
Waste						0.0000	0.0000		0.0000	0.0000	13.8846	0.0000	13.8846	0.8206	0.0000	34.3985
Water						0.0000	0.0000		0.0000	0.0000	0.1191	1.1890	1.3081	0.0123	3.0000e-004	1.7047
Total	0.3091	0.9321	3.1336	5.9700e-003	0.4850	7.7700e-003	0.4928	0.1305	7.3000e-003	0.1378	14.0037	558.0195	572.0232	0.8664	4.6000e-004	593.8219

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2018	11/14/2018	5	10	
2	Site Preparation	Site Preparation	11/15/2018	11/15/2018	5	1	
3	Grading	Grading	11/16/2018	11/19/2018	5	2	
4	Building Construction	Building Construction	11/20/2018	4/8/2019	5	100	
5	Paving	Paving	4/9/2019	4/15/2019	5	5	
6	Architectural Coating	Architectural Coating	4/16/2019	4/22/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	0	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	5.00	2.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	1.00	0.00		10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.1 Mitigation Measures Construction

3.2 Demolition - 2018

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.2 Demolition - 2018

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.2 Demolition - 2018

Mitigated Construction Off-Site

[illegible]

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

[illegible]

3.4 Grading - 2018

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.4 Grading - 2018

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.4 Grading - 2018

Mitigated Construction Off-Site

[illegible]

3.5 Building Construction - 2018

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	4.9600e-003	2.1500e-003	1.0000e-005	2.0000e-004	6.0000e-005	2.5000e-004	6.0000e-005	5.0000e-005	1.1000e-004	0.0000	0.7788	0.7788	3.0000e-005	0.0000	0.7797
Worker	8.6000e-004	7.4000e-004	6.9600e-003	1.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.5961	0.5961	6.0000e-005	0.0000	0.5976
Total	1.1300e-003	5.7000e-003	9.1100e-003	2.0000e-005	7.9000e-004	7.0000e-005	8.5000e-004	2.2000e-004	6.0000e-005	2.7000e-004	0.0000	1.3749	1.3749	9.0000e-005	0.0000	1.3773

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	4.9600e-003	2.1500e-003	1.0000e-005	2.0000e-004	6.0000e-005	2.5000e-004	6.0000e-005	5.0000e-005	1.1000e-004	0.0000	0.7788	0.7788	3.0000e-005	0.0000	0.7797
Worker	8.6000e-004	7.4000e-004	6.9600e-003	1.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.5961	0.5961	6.0000e-005	0.0000	0.5976
Total	1.1300e-003	5.7000e-003	9.1100e-003	2.0000e-005	7.9000e-004	7.0000e-005	8.5000e-004	2.2000e-004	6.0000e-005	2.7000e-004	0.0000	1.3749	1.3749	9.0000e-005	0.0000	1.3773

3.5 Building Construction - 2019

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0109	4.2600e-003	2.0000e-005	4.6000e-004	1.0000e-004	5.6000e-004	1.3000e-004	1.0000e-004	2.3000e-004	0.0000	1.8127	1.8127	7.0000e-005	0.0000	1.8145
Worker	1.8700e-003	1.5600e-003	0.0147	2.0000e-005	1.3800e-003	2.0000e-005	1.4000e-003	3.7000e-004	2.0000e-005	3.8000e-004	0.0000	1.3548	1.3548	1.3000e-004	0.0000	1.3581
Total	2.4000e-003	0.0124	0.0190	4.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.1000e-004	0.0000	3.1675	3.1675	2.0000e-004	0.0000	3.1726

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	0.0109	4.2600e-003	2.0000e-005	4.6000e-004	1.0000e-004	5.6000e-004	1.3000e-004	1.0000e-004	2.3000e-004	0.0000	1.8127	1.8127	7.0000e-005	0.0000	1.8145
Worker	1.8700e-003	1.5600e-003	0.0147	2.0000e-005	1.3800e-003	2.0000e-005	1.4000e-003	3.7000e-004	2.0000e-005	3.8000e-004	0.0000	1.3548	1.3548	1.3000e-004	0.0000	1.3581
Total	2.4000e-003	0.0124	0.0190	4.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.1000e-004	0.0000	3.1675	3.1675	2.0000e-004	0.0000	3.1726

3.6 Paving - 2019

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.6 Paving - 2019

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.6 Paving - 2019

Mitigated Construction Off-Site

[illegible]

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0194	0.0194	0.0000	0.0000	0.0194
Total	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0194	0.0194	0.0000	0.0000	0.0194

Mitigated Construction On-Site

[illegible]

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

3.7 Architectural Coating - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0194	0.0194	0.0000	0.0000	0.0194
Total	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0194	0.0194	0.0000	0.0000	0.0194

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2481	0.9306	3.1323	5.9600e-003	0.4850	7.6600e-003	0.4927	0.1305	7.1900e-003	0.1377	0.0000	540.9195	540.9195	0.0329	0.0000	541.7420
Unmitigated	0.2481	0.9306	3.1323	5.9600e-003	0.4850	7.6600e-003	0.4927	0.1305	7.1900e-003	0.1377	0.0000	540.9195	540.9195	0.0329	0.0000	541.7420

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Place of Worship	345.84	345.84	345.84	1,300,903	1,300,903
Total	345.84	345.84	345.84	1,300,903	1,300,903

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Place of Worship	0.00	10.33	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Place of Worship	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

5.0 Energy Detail

Historical Energy Use: N

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.2779	14.2779	6.5000e-004	1.3000e-004	14.3339
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.2779	14.2779	6.5000e-004	1.3000e-004	14.3339
NaturalGas Mitigated	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426
NaturalGas Unmitigated	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Place of Worship	30600	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426
Total		1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Place of Worship	30600	1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426
Total		1.7000e-004	1.5000e-003	1.2600e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6329	1.6329	3.0000e-005	3.0000e-005	1.6426

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Place of Worship	49080	14.2779	6.5000e-004	1.3000e-004	14.3339
Total		14.2779	6.5000e-004	1.3000e-004	14.3339

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Place of Worship	49080	14.2779	6.5000e-004	1.3000e-004	14.3339
Total		14.2779	6.5000e-004	1.3000e-004	14.3339

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Unmitigated	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Total	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004
Total	0.0608	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.3000e-004

7.0 Water Detail

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.3081	0.0123	3.0000e-004	1.7047
Unmitigated	1.3081	0.0123	3.0000e-004	1.7047

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Place of Worship	0.375467 / 0.587269	1.3081	0.0123	3.0000e-004	1.7047
Total		1.3081	0.0123	3.0000e-004	1.7047

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Place of Worship	0.375467 / 0.587269	1.3081	0.0123	3.0000e-004	1.7047
Total		1.3081	0.0123	3.0000e-004	1.7047

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.8846	0.8206	0.0000	34.3985
Unmitigated	13.8846	0.8206	0.0000	34.3985

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Place of Worship	68.4	13.8846	0.8206	0.0000	34.3985
Total		13.8846	0.8206	0.0000	34.3985

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Place of Worship	68.4	13.8846	0.8206	0.0000	34.3985
Total		13.8846	0.8206	0.0000	34.3985

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Tuolumne County Resilience Center_Operational Run - Tuolumne County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

GHG Emissions Summary

This sheet is used to calculate emissions from propane use, based on natural gas consumption outputs from CalEEMod.

Sector	MT CO2e/yr
Electricity	14.30
Propane	1.88
Area	0.00
water	1.70
waste	34.40
mobile	541.70
<i>Total</i>	<i>594</i>

CalEEMod Building Energy Outputs

Natural Gas

	kBTU/yr	CO2e MT/yr
Place of Worship	30600	1.63

Calculation: Propane Emissions

Land Use	kBTU/yr	CO2 MT/yr
Place of Worship	30600	1.88

Propane Emission Factor

61.46	kg co2 /mmbtu	Climate Registry, 2016
0.00006146	MT co2/kbtu	

Energy Calculations Summary

Operational Fuel Use Summary

Vehicle Class	Diesel Gallons	Gasoline Gallons
Passenger	225	24,263
Truck	10,034	24,927
Bus	575	254
Other	16	91
Total	10,849	49,535

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2014.
3. Annual VMT obtained from CalEEMod output file.

Energy Calculations Summary

Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
2021-2022	20,039	4,300	13,571	33,610
TOTAL	20,039	4,300	13,571	33,610

Total Gasoline	4,300	gallons
Total Diesel	33,610	gallons

Energy Calculations Summary

Operational Energy Use Summary

CalEEMod Output

Land Use	Electricity (kWh/year)	Natural Gas (kBtu/year)
Place of Worship	49,080	30,600
Total	49,080	30,600

Source:

CalEEMod default energy use for Place of Worship land use.

	Electricity (kWh/year)	Nat. Gas/Propane (kBtu/year)
Total	57,954	30,600,000 btu/year 0.00029 1 btu/kwh 8,874 kwh/year

Building energy all electricity so natural gas output from CalEEMod was converted to KWH and added to electricity use

Phase 3 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Architectural Coating	Air Compressors	1	6.00	78	0.48	30	337
Paving	Cement and Mortar Mixers	4	6.00	9	0.56	30	181
Grading	Off-Highway Trucks	2	6.00	402	0.38	45	4,125
Grading	Concrete/Industrial Saws	0	8.00	158	0.38	45	-
Building Construction	Cranes	1	4.00	231	0.29	145	1,943
Building Construction	Forklifts	2	6.00	89	0.20	145	1,549
Site Preparation	Graders	1	8.00	187	0.41	145	4,447
Paving	Pavers	1	7.00	130	0.42	30	573
Paving	Rollers	1	7.00	80	0.38	30	319
Grading	Rubber Tired Dozers	1	1.00	247	0.40	45	222
Building Construction	Tractors/Loaders/Balckhoes	2	8.00	97	0.37	145	4,163
Grading	Tractors/Loaders/Balckhoes	2	6.00	97	0.37	45	969
Paving	Tractors/Loaders/Balckhoes	1	7.00	97	0.37	45	565
Site Preparation	Tractors/Loaders/Balckhoes	1	8.00	97	0.37	45	646
TOTAL							20,039

33,610

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days/phase	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Architectural Coating	40	0	0	30	1200	0	0	10.80	7.30	20.00	12960	0	-	505	0
Building Construction	40	2	0	145	5,800	290	0	10.80	7.30	20.00	62,640.00	2,117.00	-	2,439	356
Grading	40	0	39	45	1,800	0	1755	10.80	7.30	20.00	19,440.00	0.00	35,100.00	757	5,908
Paving	40	0	39	30	1,200	0	1170	10.80	7.30	20.00	12,960.00	0.00	23,400.00	505	3,939
Site Preparation	5	0	22	45	225	0	1000	10.80	7.30	20.00	2,430.00	0.00	20,007.00	95	3,368
TOTAL														4,300	13,571

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Tuolumne

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 100 gallons/day	Diesel gas 100 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
Tuolumne	2022	LDA	Aggregated	Aggregated	GAS	12878.74	546934.8	80040.99	18.4747	0.00	29.60	25.68	5.94
Tuolumne	2022	LDT1	Aggregated	Aggregated	GAS	1924.413	57181.87	10486.76	2.560497	0.00	22.33		
Tuolumne	2022	LDT2	Aggregated	Aggregated	GAS	5964.166	248467.9	36427.59	11.7247	0.00	21.19		
Tuolumne	2022	T7 tractor	Aggregated	Aggregated	DSL	4.186595	400.0608	0	0.00	0.06734	5.94		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Tuolumne

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Class	MdYr
Tuolumne	2022	HHDT	Truck	Aggregated
Tuolumne	2022	HHDT	Truck	Aggregated
Tuolumne	2022	LDA	Passenger	Aggregated
Tuolumne	2022	LDA	Passenger	Aggregated
Tuolumne	2022	LDA	Passenger	Aggregated
Tuolumne	2022	LDT1	Truck	Aggregated
Tuolumne	2022	LDT1	Truck	Aggregated
Tuolumne	2022	LDT1	Truck	Aggregated
Tuolumne	2022	LDT2	Truck	Aggregated
Tuolumne	2022	LDT2	Truck	Aggregated
Tuolumne	2022	LHDT1	Truck	Aggregated
Tuolumne	2022	LHDT1	Truck	Aggregated
Tuolumne	2022	LHDT2	Truck	Aggregated
Tuolumne	2022	LHDT2	Truck	Aggregated
Tuolumne	2022	MCY	Passenger	Aggregated
Tuolumne	2022	MDV	Truck	Aggregated
Tuolumne	2022	MDV	Truck	Aggregated
Tuolumne	2022	MH	Other	Aggregated
Tuolumne	2022	MH	Other	Aggregated
Tuolumne	2022	MHDT	Truck	Aggregated
Tuolumne	2022	MHDT	Truck	Aggregated
Tuolumne	2022	OBUS	Bus	Aggregated
Tuolumne	2022	OBUS	Bus	Aggregated
Tuolumne	2022	SBUS	Bus	Aggregated
Tuolumne	2022	SBUS	Bus	Aggregated
Tuolumne	2022	UBUS	Bus	Aggregated
Tuolumne	2022	UBUS	Bus	Aggregated

Project VMT (mi/yr)

1,300,903

From CalEEMod output

Project Mobile Emissions (MT/yr)

542

From CalEEMod output

	Gas (gal)	Diesel (gal)
Passenger	24,263	225
Truck	24,927	10,034
Bus	254	575
Other	91	16
Total	49,535	10,849

Speed	Fuel	Population VMT (mi/day)		Trips	Fuel_Consumption (100 Fuel (gal/day)	
Aggregated	GAS	3.963826	300.6524251	79.30824	0.067692968	67.69296768
Aggregated	DSL	175.4729	13810.14242	0	2.643541054	2643.541054
Aggregated	GAS	12878.74	546934.7901	80040.99	18.47469632	18474.69632
Aggregated	DSL	153.5593	6604.617719	937.9682	0.172508906	172.5089059
Aggregated	ELEC	403.9945	24791.44212	2627.93	0	0
Aggregated	GAS	1924.413	57181.87133	10486.76	2.560497437	2560.497437
Aggregated	DSL	1.722172	37.82890759	8.153029	0.001343203	1.343203036
Aggregated	ELEC	0.176879	10.34058077	1.145402	0	0
Aggregated	GAS	5964.166	248467.9476	36427.59	11.7246994	11724.6994
Aggregated	DSL	7.190661	369.3173738	44.75403	0.012136187	12.13618653
Aggregated	GAS	797.3829	23891.21515	11879.82	2.528722848	2528.722848
Aggregated	DSL	1061.202	35531.00328	13348.59	2.086945375	2086.945375
Aggregated	GAS	45.55411	1822.104633	678.6883	0.207547338	207.5473377
Aggregated	DSL	182.8177	7156.338115	2299.617	0.463950516	463.950516
Aggregated	GAS	1474.284	8206.871483	2948.273	0.240491672	240.4916715
Aggregated	GAS	5525.44	185028.7555	32566.36	12.05329108	12053.29108
Aggregated	DSL	66.03322	3148.769705	403.0027	0.141028097	141.0280968
Aggregated	GAS	240.1969	2063.743297	24.0293	0.320014934	320.0149338
Aggregated	DSL	55.16236	520.3915851	5.516236	0.055073066	55.07306639
Aggregated	GAS	43.08285	1833.395053	862.0017	0.292236775	292.2367749
Aggregated	DSL	477.7404	20953.40835	0	2.549394395	2549.394395
Aggregated	GAS	23.59801	1134.834383	472.1489	0.176811435	176.8114349
Aggregated	DSL	37.19698	2800.984654	0	0.380864092	380.8640921
Aggregated	GAS	3.000271	158.2016244	12.00108	0.013531924	13.53192405
Aggregated	DSL	52.2607	1976.301593	0	0.272783538	272.783538
Aggregated	GAS	3.775781	590.8743655	15.10312	0.119932411	119.9324106
Aggregated	DSL	5.847118	915.0191451	23.38847	0.205867806	205.8678064

mi/gal	CO2_RUNEX (tons/day)	CO2 (lb/day)	% of vehicle class EMFAC	% vehicle class CalEEMod
4.441412977	0.590737951	1,181	0.021306555	0.026318
5.224107415	27.73011279	55,460	0.978693445	0.026318
29.60453479	166.8049205	333,610	0.945712632	0.578893
38.28566232	1.916765621	3,834	0.011420137	0.578893
#DIV/0!	0	0	0.042867231	0.578893
22.33232907	22.35767405	44,715	0.999158318	0.033999
28.16320883	0.014924478	30	0.000660997	0.033999
#DIV/0!	0	0	0.000180684	0.033999
21.19183948	105.6779779	211,356	0.998515828	0.21284
30.43108912	0.134846517	270	0.001484172	0.21284
9.44793739	22.4124157	44,825	0.40205862	0.010628
17.02536334	23.02325611	46,047	0.59794138	0.010628
8.779224312	1.877532554	3,755	0.202942168	0.004325
15.42478749	5.109802143	10,220	0.797057832	0.004325
34.12538751	1.561865737	3,124	1	0.005392
15.35089083	107.5799606	215,160	0.983267026	0.104491
22.32725093	1.566978853	3,134	0.016732974	0.104491
6.448896844	2.966024157	5,932	0.798620579	0.000566
9.449112228	0.61192296	1,224	0.201379421	0.000566
6.273663037	2.557953047	5,116	0.080458633	0.018736
8.218974824	27.9719126	55,944	0.919541367	0.018736
6.418331394	1.596761412	3,194	0.288335	0.001852
7.354289133	4.144858292	8,290	0.711665	0.001852
11.69099263	0.114787801	230	0.074116367	0.000598
7.244944499	2.814903442	5,630	0.925883633	0.000598
4.926727999	1.101526145	2,203	0.392374601	0.001362
4.444692743	2.287420071	4,575	0.607625399	0.001362

% vehicle class project	VMT by project vehicle class (mi/yr)	Gallons of fuel
0.000560746	729.4760392	164.2441365
0.025757254	33507.68911	6414.050565
0.547466423	712200.7114	24057.14923
0.006611038	8600.318582	224.6354917
0.02481554	32282.61036	0
0.033970384	44192.17401	1978.843043
2.24733E-05	29.23551867	1.038074846
6.14309E-06	7.991566808	0
0.212524109	276473.2507	13046.21295
0.000315891	410.9438495	13.50407959
0.004273079	5558.86131	588.3677125
0.006354921	8267.135774	485.5776413
0.000877725	1141.834923	130.0610262
0.003447275	4484.570552	290.7379149
0.005392	7014.468976	205.5498703
0.102742555	133658.0977	8706.862633
0.001748445	2274.557638	101.8736093
0.000452019	588.0331958	91.18353262
0.000113981	148.2779022	15.6922575
0.001507473	1961.076081	312.5886854
0.017228527	22412.64253	2726.938944
0.000533996	694.6775455	108.2333558
0.001318004	1714.594811	233.1421541
4.43216E-05	57.6580863	4.931838393
0.000553678	720.2819077	99.41855425
0.000534414	695.2210447	141.1121225
0.000827586	1076.608841	242.2234569

Gasoline Sum	49,535
Diesel Sum	10,849

Appendix B

Biological Constraints Analysis

Biological Constraints Analysis
for the
Tuolumne County Community Resilience Center Projects
(Tuolumne and Groveland)

PREPARED BY:

Ascent Environmental

Carlos Alvarado, Wildlife Biologist
916-444-7301
Carlos.Alvarado@ascentenvironmental.com

PREPARED FOR:

Tuolumne County

Maureen Frank, Deputy County Administrator
2 S. Green Street Sonora, CA 95370
209.533.5511
mfrank@co.tuolumne.ca.us

September 2018

TABLE OF CONTENTS

Section	Page
ACRONYMS AND ABBREVIATIONS	III
1 INTRODUCTION	1
2 METHODS.....	1
3 REGULATORY SETTING	3
3.1 Federal Regulations	3
3.2 State Regulations	3
3.3 Local Regulations	6
4 EXISTING CONDITIONS AND SITE SURVEY FINDINGS.....	13
4.1 Tuolumne Site Existing Conditions	13
4.2 Groveland Site Existing Conditions	14
4.3 Special-Status Species.....	18
4.4 Wetlands, Riparian Habitat, and Other Sensitive Natural Communities	19
4.5 Nesting Birds	20
4.6 Wildlife Movement.....	20
4.7 Tuolumne County Wildlife Handbook	21
4.8 Conflict with Local Policies or Ordinances	22
4.9 Conflict with Adopted Habitat Conservation Plans.....	22
5 SUMMARY	22
5.1 Tuolumne Site.....	22
5.2 Groveland Site	23
5.3 Recommendations	23
6 REFERENCES	26
 Attachments	
1 Database Queries	
2 Photographs	

Exhibits

Exhibit 1	Project Site	2
Exhibit 2	Tuolumne Site Land Cover	16
Exhibit 3	Groveland Site Land Cover	17

Tables

Table 1	Land Cover Types	21
---------	------------------------	----

ACRONYMS AND ABBREVIATIONS

AG	Agriculture
ASP	Aspen Grove
bop	Blue Oak-bull pine woodland
bow	Blue oak woodland
BRCH	Biological Resources Conservation Handbook
BTF	Big Trees Forest
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
chc	Chamise chaparral
CLF	Cliff
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CVRWQCB	Central Valley Regional Water Quality Control Board
dbh	diameter at breast height
DFW	California Department of Fish and Wildlife
ESA	Endangered Species Act
GAB	Gabbrodioritic soils
jpn	Jeffrey pine
low	Live oak woodland
lpn	Lodgepole pine
mch	Mixed chaparral
mcp	Montane chaparral
mhc	Montane hardwood-conifer
mhw	Montane hardwood
NGS	Native Grasslands
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
OGC	Old Growth Coniferous Forest
OGO	Old Growth Oak
PGS	Native Perennial Grasslands
ppn	Ponderosa pine
rfr	Red Fir
scn	Subalpine conifer
SER	Serpentine Soils
smc	Sierran mixed conifer
SWRCB	State Water Resources Control Board
TCWH	Tuolumne County Wildlife Handbook
TPZ	Timberland Production Zone
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOW	Valley Oak Woodland
wfr	White fir

This page intentionally left blank.

1 INTRODUCTION

This report presents the results of a biological constraints analysis for the Tuolumne Resilience Center Project located in Tuolumne and Groveland, California. The Tuolumne site consists of a parcel that would be located northeast of the intersection of Cherry Valley Boulevard and Bay Ave (APN 626702300) and a parcel located south of the intersection of Cherry Valley Boulevard and Bay Ave (APN 626702800) in the Tuolumne USGS 7.5-minute quadrangle (Exhibit 1). The Groveland site would be located on sections of two parcels located west of the intersection of Ferretti Road and Pine Mountain Drive (APNs 660306300 and 660903200) in the Groveland USGS 7.5-minute quadrangle (Exhibit 1). The proposed project would construct and operate Tuolumne County Resilience Centers at both locations. The purpose of this analysis is to identify the potential for sensitive biological resources to occur on the sites and recommend measures to avoid affecting sensitive biological resources.

2 METHODS

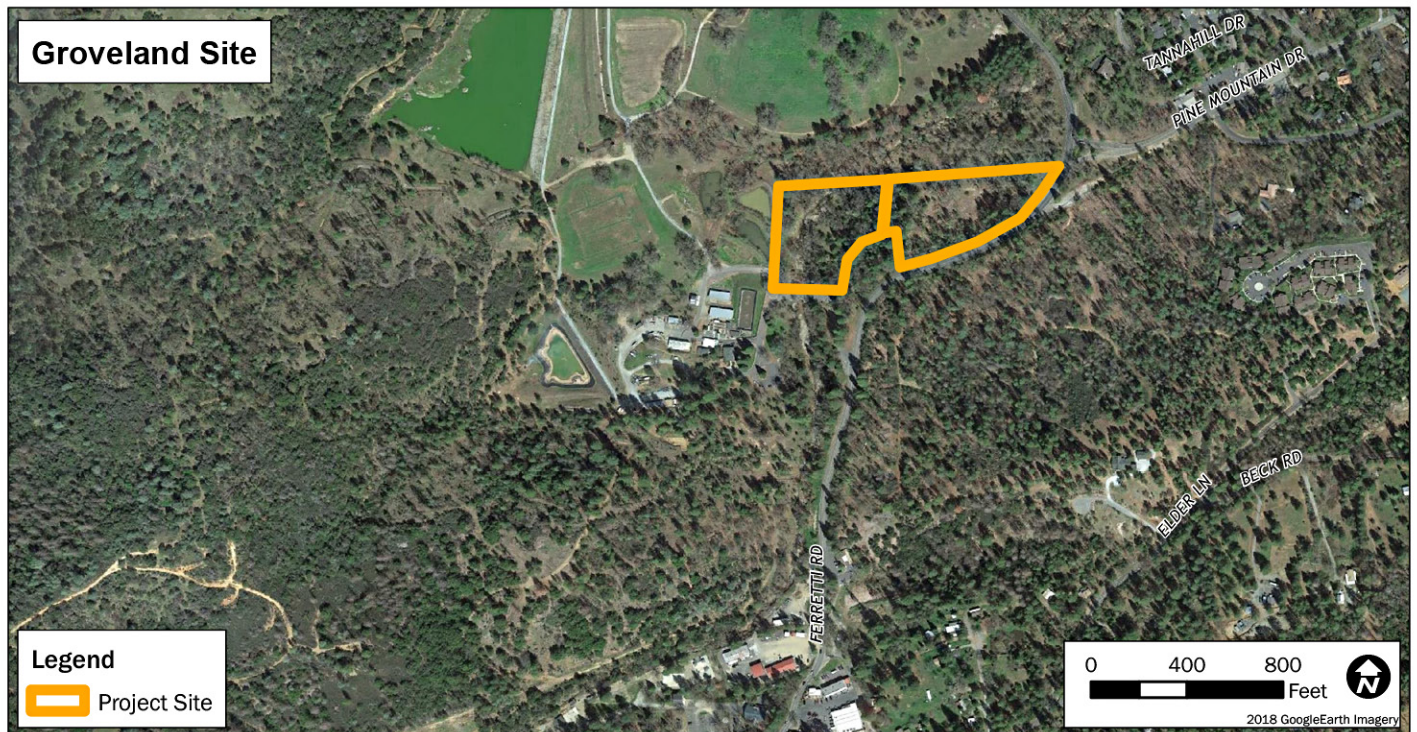
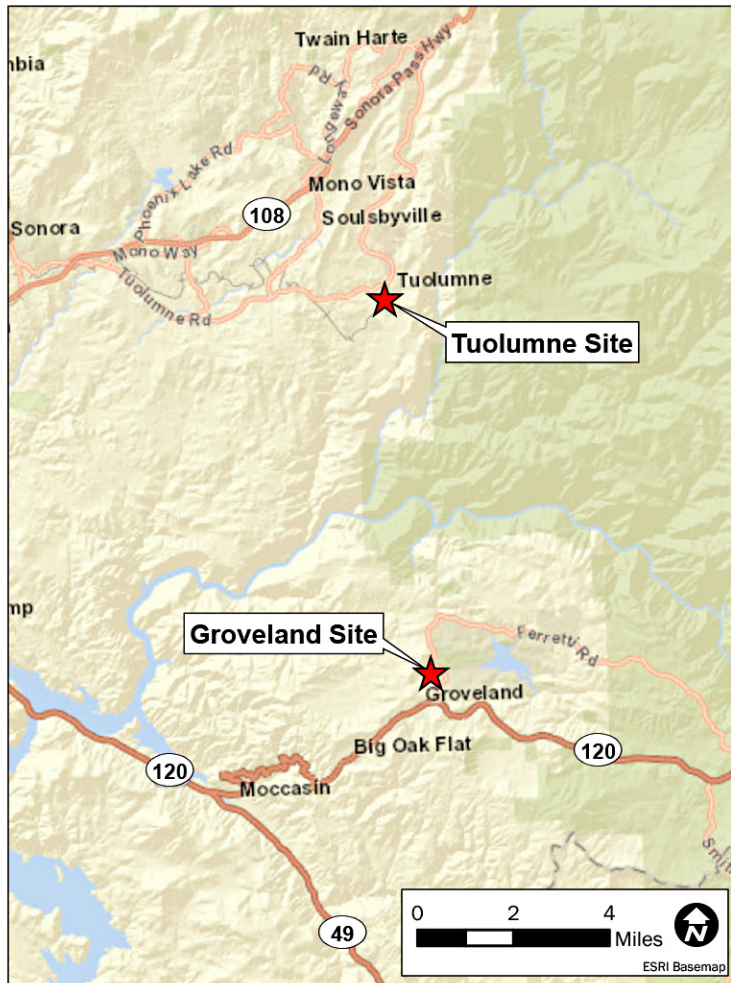
Potential biological constraints were evaluated by Ascent wildlife biologist Carlos Alvarado during a reconnaissance-level survey on the project sites on August 27, 2018. Information on sensitive biological resources previously recorded in the project sites was collected through review of U.S. Fish and Wildlife Service (USFWS) species lists, a search of the California Natural Diversity Database (CNDDDB), and other existing documentation pertaining to biological resources in the region. Resources and data reviewed included the following:

- ▲ CNDDDB record 5-mile search for the project sites California Department of Fish and Wildlife (CNDDDB 2018);
- ▲ USFWS Information for Planning and Consultation (IPaC) automatically generated list of Federal Endangered and Threatened Species that occur in or may occur within the Tuolumne and Groveland sites;
- ▲ USFWS National Wetlands Inventory (<http://www.fws.gov/wetlands/index.html>). Updated June 2018;
- ▲ California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (online edition, v8-03). Accessed on August 23, 2018; and
- ▲ Tuolumne County Wildlife Handbook (Tuolumne County 1987).

Based on the literature review and field site visit, the project sites do not provide suitable habitat for the California red-legged frog (*Rana draytonii*), are outside of the currently known of delta smelt (*Hypomesus transpacificus*) range, and are not within designated critical habitat for any federally listed species; therefore, these species and critical habitat are not discussed further in this report.

Tuolumne County adopted the Tuolumne County Wildlife Handbook (TCWH) in 1987 (Tuolumne County 1987). The TCWH and its associated maps detail the distribution of various habitat types throughout the county, evaluate their relative biological value, and established Tuolumne County's standards and thresholds for evaluating potential effects on biological resources pursuant to CEQA. The wildlife maps also provide some limited species information from local sources. The analysis in this report uses the TCWH as a guideline for evaluating potential impacts pursuant to CEQA. Where the TCWH does not provide guidance, prevailing state and/or federal regulations are used. A draft Biological Resources Review Guide was prepared in 2011 but has not been adopted and is not used in this report.

The TCWH wildlife maps were not immediately available and contain older information, and thus the CalFire's Fire Resources Assessment Program (FRAP), which uses the California Wildlife Habitat Relationship System (CWHR) classifications, were consulted to identify the habitat classification on both sites. FRAP only identified Annual Grassland habitat within the Tuolumne site, and Montane Hardwood and Ponderosa habitats in the Groveland site. Field survey observations were used to refine the habitats presented in Table 1 and Exhibit 2 and Exhibit 3 and follows the CWHR classification system.



Source: Data downloaded from Tuolumne County in 2018

18010111.01 GIS 023

3 REGULATORY SETTING

Biological resources in California are protected and/or regulated by a variety of federal and state laws and policies. Key statutes and regulations applicable to the proposed project are discussed below.

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

Pursuant to the Endangered Species Act (ESA), USFWS and National Marine Fisheries Service (NMFS) have authority over projects that may affect the continued existence of federally listed (threatened or endangered) species. Section 9 of ESA prohibits any person from "taking" an endangered or threatened fish or wildlife species or removing, damaging, or destroying a listed plant species on federal land or where the taking of the plant is prohibited by state law. Take is defined under ESA, in part, as killing, harming, or harassing. Under federal regulations, take is further defined to include habitat modification or degradation where it results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

If a proposed project would result in take of a federally listed species, the project applicant must consult with USFWS or NMFS before the take occurs under Section 10(a) of ESA or Section 7 of ESA if another federal agency is involved in the action. Conservation measures to minimize or compensate for the take are typically required.

3.1.2 Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

3.2 STATE REGULATIONS

3.2.1 California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from the California Department of Fish and Wildlife (DFW) is required for projects that could "take" a species state listed as threatened or endangered. Section 2080 of CESA prohibits take of state listed species. Under CESA, take is defined as any activity that would directly or indirectly kill an individual of a species. The definition does not include "harm" or "harass" like the federal act. As a result, the threshold for take under CESA is higher than under ESA (i.e., habitat modification is not necessarily considered take under CESA). Authorization for take of state-listed

species can be obtained through a California Fish and Game Code Section 2081 incidental take permit. California Fish and Game Code.

The California Fish and Game Code identifies Fully Protected Species in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. DFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

In addition, Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, and falcons), including their nests or eggs.

3.2.2 California Environmental Quality Act

CEQA applies to projects proposed to be undertaken or requiring approval by state and local governmental agencies. “Projects” are public agency actions with potential to have an impact on the physical environment. Once an activity is determined to be a “project” under CEQA, the lead agency must decide whether it is categorically or statutorily exempt. If it is not exempt, the lead agency must assess the potential for significant environmental effects to occur as a result of the project. For this analysis, thresholds of significance related to biological resources, as described below, are used to determine if a significant impact may occur. The significance criteria are based on applicable parts of Appendix G of the State CEQA Guidelines.

The project would have a significant impact on biological resources if it would:

- ▲ have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the DFW or USFWS;
- ▲ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by DFW or USFWS;
- ▲ have a substantial adverse effect on federally-protected wetlands, as defined by Section 404 of the Clean Water Act, through direct removal, filling, hydrological interruption, or other means;
- ▲ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- ▲ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- ▲ conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State conservation plan.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- ▲ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▲ deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake.

3.2.3 Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and each of nine local RWQCBs has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq., which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction*). The local RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.

3.2.4 Oak Woodlands Conservation Act and California Senate Bill 1334/Public Resources Code Section 21083.4

In 2001, the California legislature enacted the Oak Woodlands Conservation Act (Assembly Bill 242), which established requirements for the preservation and protection of oak woodlands and trees, and allocated funding managed by the Wildlife Conservation Board. To qualify to use these funds, counties and cities must adopt an oak conservation management plan. In 2004, to expand these conservation efforts, the legislature passed Senate Bill 1334 (*Oak Woodlands Conservation: Environmental Quality*), which added Section 21083.4 to the Public Resources Code. This statute requires that a county must determine whether a project would result in a significant impact on oak woodlands and, if it is determined that a project may result in a significant impact on oak woodlands, then the County shall require one or more of the following mitigation measures:

- ▲ conserve oak woodlands through the use of conservation easements;
- ▲ plant an appropriate number of trees, including maintenance of plantings and replacement of failed plantings;
- ▲ contribute funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; or

- ▲ other mitigation measures developed by the county.

3.3 LOCAL REGULATIONS

3.3.1 Tuolumne County General Plan

The existing Tuolumne County General Plan was adopted on December 26, 1996. It has a planning horizon of 25 years. The Conservation and Open Space element contains goals and policies related to the protection of biological resources and water resources relevant to the project.

BIOLOGICAL RESOURCES

GOAL 4.J: Employ a proactive planning approach to conserve biological resources by adopting predictable and consistent evaluation and mitigation standards.

Policies

- ▲ **4.J.1:** Recognize that agricultural and timberlands of 37 acres or larger provide open areas and habitat for wildlife and that most agricultural and timber management land uses are compatible with the conservation of biological resources.
- ▲ **4.J.2:** Maintain a biological resources conservation program to facilitate a consistent, fair and cost-effective approach to biological resource mitigation and provides for permit streamlining while conserving important biological resources and protecting the private property rights of the individual property owners while fulfilling all State and Federal mandates.
- ▲ **4.J.3:** Recognize that Tuolumne County contains a large percentage of publicly owned lands that provide open space for use by wildlife in formulating a biological resources conservation program for mitigation of impacts associated with discretionary entitlements subject to the California Environmental Quality Act (CEQA) on biological resources.
- ▲ **4.J.4:** Maintain an updated biological resources database to help eliminate redundant and costly biological studies.
- ▲ **4.J.5:** Comply with the "no net loss" policy, and any changes thereto, for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game by requiring new development which is subject to review under the California Environmental Quality Act (CEQA) to achieve "no net loss" of wetland habitat values through avoidance or appropriate mitigation in accordance with the County's Biological Resources Conservation Program referenced in Implementation Program 4.J.a and through the CEQA process.
- ▲ **4.J.6:** Require new development which is subject to review under the California Environmental Quality Act (CEQA) to achieve "no net loss" of habitat values for Valley Oak Woodland (VOW), Serpentine Soils (SER), Old Growth Coniferous Forest (OGC), Big Trees Forest (BTF), Old Growth Oak (OGO), Aspen Grove (ASP), Native Perennial Grasslands (PGS), Native Grasslands (NGS), and Cliff (CLF) habitats through avoidance or appropriate mitigation in accordance with the County's Biological Resources Conservation Program referenced in Implementation Program 4.J.a and through the CEQA process.
- ▲ **4.J.7:** Recognize that wildlife, fish and their habitats are important resources, which are valued by the County's citizens for recreational nature study, hunting and fishing, scientific research, education, shade, beauty, and open space. These resources enhance property value and attract visitors, a major source of revenue for the local economy. [Resolution 41-98 adopted March 24, 1998]

Implementation Programs

4.J.a: Maintain a Biological Resources Conservation Program

Maintain a Biological Resources Conservation Program which requires a land owner and/or applicant requesting a discretionary entitlement subject to the California Environmental Quality Act (CEQA) to mitigate impacts to biological resources in the manner set forth in the Tuolumne County Biological Resources Conservation Handbook (BRCH). This Handbook will be updated periodically as necessary to reflect changes in State and Federal laws or County ordinances. The adoption of the Tuolumne County Biological Conservation Handbook by the Board of Supervisors will supersede the Tuolumne County wildlife Handbook adopted by the Board of supervisors through Resolution 230-96 on December 26, 1996, to serve as the interim biological Resources Conservation Handbook.

The Tuolumne County Biological Resources Conservation Handbook shall be prepared in coordination with the State and Federal agencies having jurisdiction over such resources and the purpose of the Handbook shall be to provide a consistent, fair and cost effective approach to biological resource mitigation and conservation while providing for streamlining of the land use permitting process.

The Tuolumne County Biological Resources Conservation Handbook shall be implemented to mitigate impacts associated with a discretionary entitlement subject to the California Environmental Quality Act (CEQA). The Biological Resources Conservation Handbook shall provide an applicant the same or similar optional methodology for identifying impacts to biological resources and selecting mitigation measures for those impacts as contained in the Tuolumne County Wildlife Handbook. The Biological Resources Conservation Handbook and its associated site evaluations, aerial photographs, Geographic Information System biological resources inventory and database and the biological resources maps shall not be utilized to designate areas as Open Space on the General Plan land use maps. Zoning of land to Open Space to mitigate impacts on biological resources on private property shall only be accomplished in conjunction with a discretionary entitlement subject to CEQA and as agreed to by the property owner and/or applicant of the entitlement who has selected the Biological Resources Conservation Handbook option for such mitigation.

The Tuolumne County Biological Resources Conservation Handbook shall articulate the role and duties of the Planning Department relative to its implementation.

The Tuolumne County Biological Resources Conservation Handbook shall, at a minimum, address: a priority system of evaluating relative values of wildlife habitats on private lands, mitigation measures for listed threatened and endangered species and other special status species; avoidance of Second Priority habitats including setbacks from wetland areas; guidelines for determining the necessity for biological studies for special status species and habitats; mitigation for Third Priority habitats to avoid cumulative adverse impacts to those habitats; mitigation for offsetting impacts to habitats and species including avoidance, conservation easements, mitigation banks, enhancements and restoration of on-site and off-site properties to mitigate on-site impacts.

In formulating the Biological Resources Conservation Handbook, coordinate with the U.S. Fish and Wildlife Service, California Department of Fish and Game and other governmental agencies having jurisdiction over biological resources to develop and implement the following to mitigate cumulative impacts on biological resources:

1. Guidelines for determining when surveys for rare, threatened and endangered species shall be required on private lands in conjunction with land development applications.
2. Inventory and map of Gabbrodioritic soils (GAB), assessment of potential impacts to that habitat type and mitigation program for potential impacts.
3. Map of, and mitigation measures for impacts to, important deer migration corridors through the following Third Priority habitats: Ponderosa pine (ppn), Sierran mixed conifer (smc), Red Fir (rfr),

Lodgepole pine (lpn), White fir (wfr), Subalpine conifer (scn), and Jeffrey pine (jpn) located above 3,000 feet in elevation.

4. Minimum acreage preservation standards for the following third priority habitats: Blue oak woodland (bow), Blue Oak-bull pine woodland (bop), Chamise chaparral (chc), Mixed chaparral (mch), Montane chaparral (mcp), Montane hardwood (mhw), and Montane hardwood-conifer (mhc) and, if so determined by the California Department of Fish and Game, Live oak woodland (low) habitat.
5. Map of the distribution of the Live oak woodland (low) habitat, assessment of impacts to that habitat and mitigation program for potential impacts.
6. Minimum criteria for establishing and/or preserving existing species movement corridors between communities and buffers along riparian corridors to maintain the ability of wildlife to move to and from various habitats.

The Tuolumne County Biological Resources Conservation Handbook shall be updated at least once every five years to reflect new technical information and, if necessary, changes in local resource conditions. [Resolution 261-97 adopted December 2, 1997]

▲ **4.J.b: Recognize Open Space Value of Agricultural and Timber Lands**

Recognize the open space provided by agricultural and timberlands by exempting lands designated on the General Plan land use maps as Timberland Production Zone (TPZ), or Agriculture (AG) when the parcel is 37 acres or larger and supports an agricultural or residential land use or is vacant, from the County's programs for conserving non-targeted biological resources. [Resolution 41-98 adopted March 24, 1998]

▲ **4.J.c: No Net Loss of Wetland Habitat**

Coordinate with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game and any other governmental agency having jurisdiction over wetlands to comply with applicable Federal and State laws concerning "no net loss" of wetland areas. Develop, in coordination with these agencies, programs for mitigating impacts to wetlands that prioritize avoidance, on-site or off-site protection, and existing wetland acquisition higher than creation of new wetlands and include the programs in the County's Biological Resources Conservation Handbook referenced in Implementation Program 4.J.a and coordinate with these agencies at all levels of review of land development applications requiring a discretionary entitlement subject to the California Environmental Quality Act which do not utilize the County's Biological Resources Conservation Handbook to identify appropriate mitigation measures and to address Federal and State wetland laws. [Resolution 41-98 adopted March 24, 1998]

▲ **4.J.d: No Net Loss of Second Priority Habitat Values**

Require new development which is subject to review under the California Environmental Quality Act (CEQA) to achieve "no net loss" of habitat values for Valley Oak Woodland (VOW), Serpentine Soils (SER), Old Growth Coniferous Forest (OGC), Big Trees Forest (BTF), Old Growth Oak (OGO), Aspen Grove (ASP), Native Perennial Grasslands (PGS), Native Grasslands (NGS), and Cliff (CLF) habitats through avoidance or appropriate mitigation in accordance with the County's Biological Resources Conservation Program referenced in Implementation Program 4.J.a and through the CEQA process. Develop, in coordination with Federal and State agencies with jurisdiction over these habitats, programs for mitigating impacts to such habitats for inclusion in the County's Biological Resources Conservation Handbook referenced in Implementation Program 4.J.a and coordinate with these agencies at all levels of review of land development applications requiring a discretionary entitlement subject to the California Environmental Quality Act which do not utilize the County's Biological Resources Conservation Handbook to identify appropriate mitigation measures and to address Federal and State policies relative to these habitats.

▲ **4.J.e: Minimize Conflicts Between Wildlife and Vehicular Traffic**

Work with the California Department of Fish and Game, the California Highway Patrol and other resource and public safety officials to address the impacts associated with, and identify mitigation for, the inherent conflicts between wildlife and roadways.

WATER RESOURCES

GOAL 4.L: Conserve the quality and quantity of the County's water resources, while protecting the rights of the land owner.

Policies

- ▲ **4.L.1:** Protect the quality of the County's water resources. Prevent surface water and groundwater contamination by insuring Tuolumne County development standards are adequate to protect water resources. [Resolution 41-98 adopted March 24, 1998]
- ▲ **4.L.2:** Require new urbanization to locate in areas where public water and sewer services are available or can be developed. [Resolution 41-98 adopted March 24, 1998]
- ▲ **4.L.3:** Support the efforts of the local water agencies in identifying and procuring new water resources to meet projected future demands from growth in the County, including the use of reclaimed water for non-potable uses.
- ▲ **4.L.4:** Encourage the conservation of water resources in a systematic manner that is sensitive to the maintenance of water quality, natural capacities, ecological values, and consideration of the many water related needs of the County.
- ▲ **4.L.5:** Require new development to connect to public water and public sewer where harmful areawide impacts to groundwater exist based on known hazard areas. [Resolution 41-98 adopted March 24, 1998]
- ▲ **4.L.6:** Recognize that the decisions made by the County of Tuolumne concerning water resources has an effect on the State of California's ability to meet its water supply needs for all beneficial uses of water, including urban, agricultural, environmental and other uses, such as recreation and power generation and that Tuolumne County has an important stakeholder interest in the success of the State's water management efforts.
- ▲ **4.L.7:** Support the State's efforts to implement the Water Resources and Delta Restoration Clean, Safe, Reliable Water Supply for Cities, Farms, and the Environment Act of 1996 by encouraging water conservation and watershed rehabilitation programs initiated by water agencies, other public agencies and private entities.
- ▲ **4.L.8:** Participate in the State and Federal sponsored CAL-FED program to develop comprehensive and long-term solutions to the problems of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (bay-delta) which is nationally recognized as both an important feature of the State's environment and an important component of the State's water supply system by promoting improved management of watersheds in Tuolumne County to contribute to long- term bay-delta recovery and protection.
- ▲ **4.L.9:** Recognize that clean water is essential to the public health, safety and welfare; fosters economic development and job creation; protects the environment; maintains fish and wildlife; and supports recreation.
- ▲ **4.L.10:** Encourage water resources to be protected from pollution, conserved, and recycled whenever possible to provide for continued economic, community, and social growth.

- ▲ **4.L.11:** Promote improved watershed health and improved water quality and water quantity yields of the watersheds in Tuolumne County.

Implementation Programs

▲ **4.L.a: Develop Conservation Program for Water Resources**

Develop a conservation program for important water resources in conjunction with the County's biological resources conservation program which has been sanctioned by the Federal and State agencies having jurisdiction over such resources to facilitate a consistent, fair and cost-effective approach to water resource mitigation and encourages and supports the restoration of degraded riparian areas through public education programs demonstrating the value of healthy riparian habitats in protecting water quality, and provide for permit streamlining while conserving important water resources. Applicants seeking discretionary entitlements subject to the California Environmental Quality Act shall have the option of using the County's water resource conservation program to mitigate impacts from their projects on such resources or pursue a project specific mitigation program to comply with environmental regulations in effect at that time. They shall also be entitled to mitigation credits for restoration projects in degraded riparian areas as provided in the County's water resources conservation program. Important water resource areas include reservoirs, lakes, ponds, marshes, springs, vernal pools, wetlands, rivers, water supply ditches, and perennial and intermittent streams as identified on the United States Geological Survey (USGS) maps. The water conservation program shall address the following minimum standards:

1. Provision for the continued implementation of the National Pollution Discharge Elimination System (NPDES) permitting program enforced by the Central Valley Regional Water Quality Control Board (CVRWQCB).
2. Maintaining vegetative filters and/or buffers adjacent to water resources to assist in reducing the introduction of sediments and pollutants into surface water resources.
3. Best Management Practices for grading on steep slopes, maintaining sediments on-site, preserving adjacent parcel owner property values by avoiding or reducing substantial runoff over neighboring properties and revegetating and/or terracing on large cut and fill slopes.
4. Flexible development standards for reducing grading, where appropriate.
5. Methods for avoiding and maintaining water resources which are to be avoided during construction and maintained on-site.
6. Assignment of responsibility for the maintenance of sedimentation control facilities on and revegetating graded areas that are abandoned during construction. [Resolution 41-98 adopted March 24, 1998]

▲ **4.L.b: Land Uses Adjacent to Public Drinking Water Reservoirs**

Participate in the State Source Water Assessment Program. Amend Tuolumne County Ordinance Codes to provide for local source water protection and wellhead protection programs to protect the sources of drinking water supplies in compliance with the State Source Water Assessment Program. In the interim, require new areas proposed for urban land uses (HDR, MDR, LDR, NC, GC, HC, and MU) and industrial land uses (BP, LI, and HI) on the General Plan maps to avoid being located above public drinking water reservoirs and open (uncovered or unlined) public drinking water conveyances (ditches, flumes, and canals) where discharge or contamination is likely to occur, unless public water and sewer are available or can be developed, or impacts can be mitigated. [Resolution 41-98 adopted March 24, 1998]

▲ **4.L.c: Landscaping Standards**

Promote the use of xeriscape landscaping plants and materials to conserve water, the use of water conserving irrigation systems for landscaping, and the use of reclaimed or reuse water for irrigation.

▲ **4.L.d: Provide for Graywater Irrigation**

Allow the subsurface irrigation of non-food plants from sinks, showers, washing machines, car washing bays and other non-sewage sources, and educate property owners in the proper use of graywater systems.

▲ **4.L.e: Consider Regulating Groundwater Exportation**

Consider regulating the exportation of groundwater to preserve the County's limited groundwater reserves for use by its residents and businesses.

▲ **4.L.f: Require Confirmation of Water Availability for New Development**

Continue to require new urban development needing discretionary entitlements to secure a letter from the jurisdictional public water agency stating that the proposed project can be served by that agency and that there is an available water supply.

▲ **4.L.g: Require Connection to Public Sewer**

Continue to require new urban residential development with a density of three dwelling units per acre, or greater, and commercial development, except that on land designated Special Commercial (SC) by the General Plan, to connect to public sewer.

▲ **4.L.h: Require Connection to Public Water**

Continue to require all new urban development, except on land designated as Special Commercial (SC) by the General Plan land use maps, to be served with public water.

▲ **4.L.i: Create and Update Septic System Hazard Maps**

Create and update, as needed, Septic System Hazard Maps indicating areas of high ground water, impervious soils, limestone or other hazards which, either by themselves or in combination, create potentially serious health conditions due to failing septic systems or which are inappropriate for on-site sewage treatment and disposal on an areawide basis.

▲ **4.L.j: Address Septic System Hazard Areas**

Continue to develop and evaluate criteria to allow development to occur in septic system hazard areas without degrading the water resources.

▲ **4.L.k: Provide Grading and Surface Runoff Standards**

Provide grading and surface runoff standards necessary to protect water resources in compliance with State and Federal water quality regulations and with the County's water conservation program referenced in Implementation Program 4.L.a.

▲ **4.L.l: Expand List of Permitted Uses in Open Space-1 Zoning District**

Expand the list of permitted uses in the O-1 (Open Space-1) zoning district in Title 17 of the Tuolumne County Ordinance Code for the conservation and utilization of the County's water resources to include such uses as water monitoring installations excluding wells; improvements to aquatic, plant and wildlife habitat; erosion control projects; and vegetation removal for flood control.

▲ **4.L.m: Address Water Supply Sources for Anticipated Growth**

Continue to coordinate the County's long range land use planning program with local public water agencies to determine that water supplies and delivery systems can meet the demands of the anticipated new development and population growth of the County. Prepare and maintain a water supply and demand chart summarizing projected water needs based on growth projections and anticipated supply levels from the Tuolumne Utilities District, Tuolumne County Water District #1, Groveland Community Services District, Lake Don Pedro Community Services District and other local public water agencies. In accordance with Section 65352.5 of the California Government Code, the General Plan Land Use Diagrams were formulated in coordination with the applicable urban water plans from these agencies and any amendments to those diagrams shall be reviewed in coordination with the respective public water agency serving the parcel or parcels affected by the proposed amendment.

▲ **4.L.n: Watershed Rehabilitation Projects**

Promote the development of plans for watershed rehabilitation projects which provide for such watershed improvements as:

1. A reduction in the presence of contaminants in drinking water by addressing the origins of the contaminants, including, to the maximum extent practicable, the specific activities that affect the drinking water supply of a community or communities.
2. An increase in the quantity of water available from the watershed.
3. The improvement, restoration, or enhancement of fisheries habitat, including riparian habitat, in and along streams and watercourses in the watershed. These projects may address factors which increase sedimentation in streams and watercourses in the watershed.
4. The improvement of overall forest health, including the reduction of factors which may contribute to the severity of wildfires in the watershed.

▲ **4.L.o: Formulation of Watershed Rehabilitation Plans**

Initiate or assist in the formulation of plans for watershed rehabilitation projects by serving as the coordinating agency for the various stakeholders in such a plan, such as property owners, water agencies, other public agencies, private industry, recreational facility providers and other interested groups and organizations. Provide technical assistance in the development of plans for watershed rehabilitation projects through such means as data sharing.

▲ **4.L.p: Funding for Watershed Improvement**

Submit applications for grants from the CAL-FED and other programs which become available for funding for County initiated or sponsored watershed rehabilitation projects and support the efforts of other public agencies, water agencies, such as the Tuolumne County Water Agency, and other entities in their efforts to seek funding for their respective watershed projects. This support may manifest itself in such ways as adopting a resolution of support or co-sponsoring an application for funding for a watershed project.

▲ **4.L.q: Coordination Among Agencies**

Cooperate and coordinate with Federal, State and local agencies, such as the Tuolumne County Water Agency, in promoting the stewardship of the watersheds within the County. Coordinate with these agencies to avoid duplication of effort and to maximize use of public resources in working towards a common goal of improving the watersheds within Tuolumne County which will, in turn, contribute to the State and Federal objective of providing long-term bay-delta recovery and protection.

3.3.2 Tuolumne County Ordinance Code

CHAPTER 9.24 PREMATURE REMOVAL OF NATIVE OAK TREES

This ordinance provides protection for premature removal of native oak trees (native to California), oak woodlands, individual valley oaks measuring 5 inches or greater in diameter at breast height (dbh), and/or removal of any old growth oak tree (defined as any native oak tree that is 24 inches or greater in dbh). Premature removal of native oak trees is defined as removal of native oaks tree, oak woodland from a project site within the five (5) years preceding the submittal of an application for a discretionary entitlement from the County of Tuolumne for a land development project on that site.

CHAPTER 16.24 PARCEL MAPS

Section 16.24.180 Drainage Easements

- A. Where a land division is traversed by a watercourse, drainageway, channel or stream, there shall be provided a storm water easement or drainage right-of-way fifteen feet in width along the centerline of ephemeral drainages, thirty feet in width along the centerline of intermittent drainages and fifty feet along the centerline of perennial streams conforming substantially to the lines of such watercourse. Wherever safe and feasible, as determined by the director, it is desirable that the drainage be maintained by an open channel with landscaped banks and adequate width for maximum potential volume of flow.
- B. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within road rights-of-way, perpetual unobstructed easements at least fifteen feet in width for such drainage facilities shall be provided across the subject property outside the road lines and with satisfactory access to the road. Easements shall be indicated and dedicated on the map but shall not be accepted for maintenance by the county. Only those drainageways lying adjacent to or beneath county-maintained roads, and within dedicated road easements, shall be maintained by the county. Drainage easements shall be carried from the road to a natural watercourse or to other drainage facilities.
- C. When a proposed drainage system will carry water across private land outside the subdivision, appropriate drainage rights must be secured and indicated on the final map. The applicant shall dedicate a drainage easement along both sides of existing watercourses, of a width to be determined by the director. (Ord. 2864 §24, 2007; Ord. 1562 §2 (part), 1987).

3.3.3 Tuolumne County Wildlife Handbook

Tuolumne County adopted the Tuolumne County Wildlife Handbook (TCWH) in 1987 (Tuolumne County, 1987). The TCWH and its associated maps detail the distribution of various habitat types countywide, evaluate their relative biological value, and establish Tuolumne County's standards and thresholds for evaluating the potential biological impacts pursuant to CEQA. The avoidance and mitigation measures provided in the TCWH are intended to facilitate a consistent, fair, and cost-effective approach to wildlife mitigation that provides the greatest protection for the most sensitive resources. The TCWH requires that all first and second priority habitats be avoided and protected through Open Space zoning to minimize potential impacts to these habitats pursuant to CEQA. Per the TCWH, third priority habitats should be included in Open Space only where protection of first and second priority does not already total 20% of the project site.

4 EXISTING CONDITIONS AND SITE SURVEY FINDINGS

A site reconnaissance was conducted on August 27, 2018 at each of the project sites. A description of existing conditions that were observed is provided below for each site. In addition, a description of existing vegetation, animal species observed, and water features identified are included.

4.1 TUOLUMNE SITE EXISTING CONDITIONS

As mentioned previously, the Tuolumne site consists of two urban parcels across each other along Bay Street in Tuolumne, California. The north parcel is bounded to the north by an undeveloped lot, to the east by sycamore trees and the West Side Lumber Company building, to the south by Bay Street, and to the west by an undeveloped lot. The south parcel is bounded to the north by Bay Street, to the east by a toddler play area and a horseshoe game pit area, to the south by undeveloped riparian area and to the west by Cherry Valley Boulevard South. The two parcels have been historically disturbed. Both parcels have sloped trenches associated with

previous disturbance and installation of storm drainage culverts. Both parcels support annual grassland consisting of mostly ruderal (weedy) vegetation with both parcels supporting similar plant composition (Exhibit 2). (See Attachment 2 - Photo 1 and Photo 2). The south parcel also includes a parking area, which is under construction just south of the Tuolumne City Library and swimming pool.

Observed plants include typical weedy plants associated with disturbed sites: yellow star thistle (*Centaurea solstitialis*), ripgut brome (*Bromus diandrus*), bermuda grass (*Cynodon dactylon*), dogtail grass (*Cynosurus echinatus*), wild oats (*Avena fatua*), wild radish (*Raphanus raphanistrum*), sweet pea (*Lathyrus latifolius*), English plantain (*Plantago lanceolata*), nutsedge (*Cyperus* sp.), curly dock (*Rumex crispus*), Himalayan blackberry (*Rubus armeniacus*), chicory (*Cichorium intybus*), field vetch (*Vicia villosa*). Interior live oak (*Quercus wislizenii*), black oak (*Quercus kelloggii*), pine (*Pinus* sp.), and cypress (*Cupressus* sp.) were observed growing along Bay Street for the north parcel. Only a willow (*Salix* sp.) was observed growing along Bay Street for the south parcel. Approximately eight cottonwood (*Populus* sp.) saplings are also growing within the south parcel adjacent to a depression left by previous ground disturbance north of the riparian area associated with a historical drainage.

The south parcel of the Tuolumne site is located west of a toddler play area and a horseshoe game pit area, which are irrigated. Due to the slope and drain patterns, the irrigation drains onto the parcel and has created a seasonal wetland where wetland vegetation such as nutsedge, curly dock, and cocklebur (*Xanthium strumarium*) are growing (See Attachment 2 - Photo 3).

A larger seasonal wetland was also observed within the south parcel. Removal of old railroad tracks, and improper grading resulted in a low spot where cocklebur and cottonwood saplings were observed (See Attachment 2 - Photo 4). The south parcel is bounded to the south by a riparian area associated with a storm drainage area that eventually drains into Turnback Creek.

Wildlife observed in the Tuolumne project site include species associated with urban environments such as feral cat (*Felis silvestris*), house sparrow (*Passer domesticus*), lesser goldfinch (*Spinus psaltria*), house finch (*Carpodacus mexicanus*), California scrub-jay (*Aphelocoma californica*), Anna's hummingbird (*Calypte anna*), western fence lizard (*Sceloporus occidentalis*), and desert cottontail (*Sylvilagus audubonii*).

4.2 GROVELAND SITE EXISTING CONDITIONS

The Groveland site also consists of adjacent portions within two parcels that are undeveloped. The parcels are bounded to the north by undeveloped forested land, to the east by Ferretti Road and the Pine Mountain Lake Association, south by Ferretti Road and the driveway to the Groveland Community Service District, and west by the Groveland Community Service District waste water treatment plant evaporation ponds. The west parcel has an intermittent creek that drains into Pine Mountain Lake. The east parcel has an ephemeral drainage that drains into the intermittent creek (Exhibit 3).

The Groveland site supports montane hardwood-conifer habitat and includes foothill pine (*Pinus sabiniana*), ponderosa pine (*Pinus ponderosa*), incense cedar (*Calocedrus decurrens*), black oak, interior live oak, California black walnut (*Juglans californica*), willow (*Salix* sp.), and manzanita (*Arctostaphylos* sp.) (See Attachment 2 - Photo 5). Understory vegetation varies in density and consists of native and weedy species such as ripgut brome, dogtail grass, starthistle, deergrass (*Muhlenbergia rigens*), little rattlesnake grass (*Briza minor*), hairgrass (*Aira caryophyllaea*), wild pea, long trefoil (*Acmispon* spp.), woolly mullein (*Verbascum thapsus*), dove weed (*Croton setiger*), poison oak (*Toxicodendron diversilobum*), Himalayan blackberry, vinegar weed (*Trichostema lanceolatum*), tarplant (*Holocarpha virgata*), and navarretia (*Navarretia* sp.).

The west parcel supports riparian vegetation associated with the intermittent creek; willows, interior live oak, black oak, California walnut, and incense cedar form the canopy and the understory is composed of blackberry, perennial pepperweed (*Lepidium latifolium*), medusa head grass (*Taeniatherum caput-medusae*), cocklebur, bedstraw, dove weed, curly dock, stinging nettle (*Urtica dioica*), and poison oak.

The east parcel supports an ephemeral drainage that conveys water from the road and the south side of Ferretti Road onto the parcel and eventually drains into the intermittent creek. The ephemeral drainage supports vegetation associated with the montane hardwood-conifer habitat described above and most of the vegetation observed consisted of upland vegetation. Due to scouring experienced during rain events, some root exposure of the oaks and pines has occurred.

Areas of pine trees were recently removed from the Groveland site because of pine bark beetle infestation (Frank, pers. comm., 2018) and thus, the site has openings within the montane hardwood-conifer habitat canopy. The openings are categorized as annual grassland supporting ruderal (weedy) plants (See Attachment 2 - Photo 6). The annual grassland supports ruderal (weedy) species such as ripgut brome, dogtail grass, starthistle, deergrass, little rattlesnake grass, hairgrass, wild pea, long trefoil, woolly mullein, dove weed, poison oak, Himalayan blackberry, vinegar weed, tarplant, and navarretia and it is associated with disturbed areas in both the east and west parcel.

Wildlife observed within the Groveland site include mule deer (*Odocoileus hemionus*), western gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), lesser goldfinch, western fence lizard, acorn woodpecker (*Melanerpes formicivorus*), white-breasted nuthatch (*Sitta carolinensis*), bushtit (*Psaltiriparus minimus*), California quail (*Callipepla californica*), Steller's jay (*Cyanocitta stelleri*), brown creeper (*Certhia americana*), band-tailed pigeon (*Patagioenas fasciata*), and spotted towhee (*Pipilo maculatus*).

All of the wildlife species observed are common wildlife species expected to occur in urban and semi-rural environments.

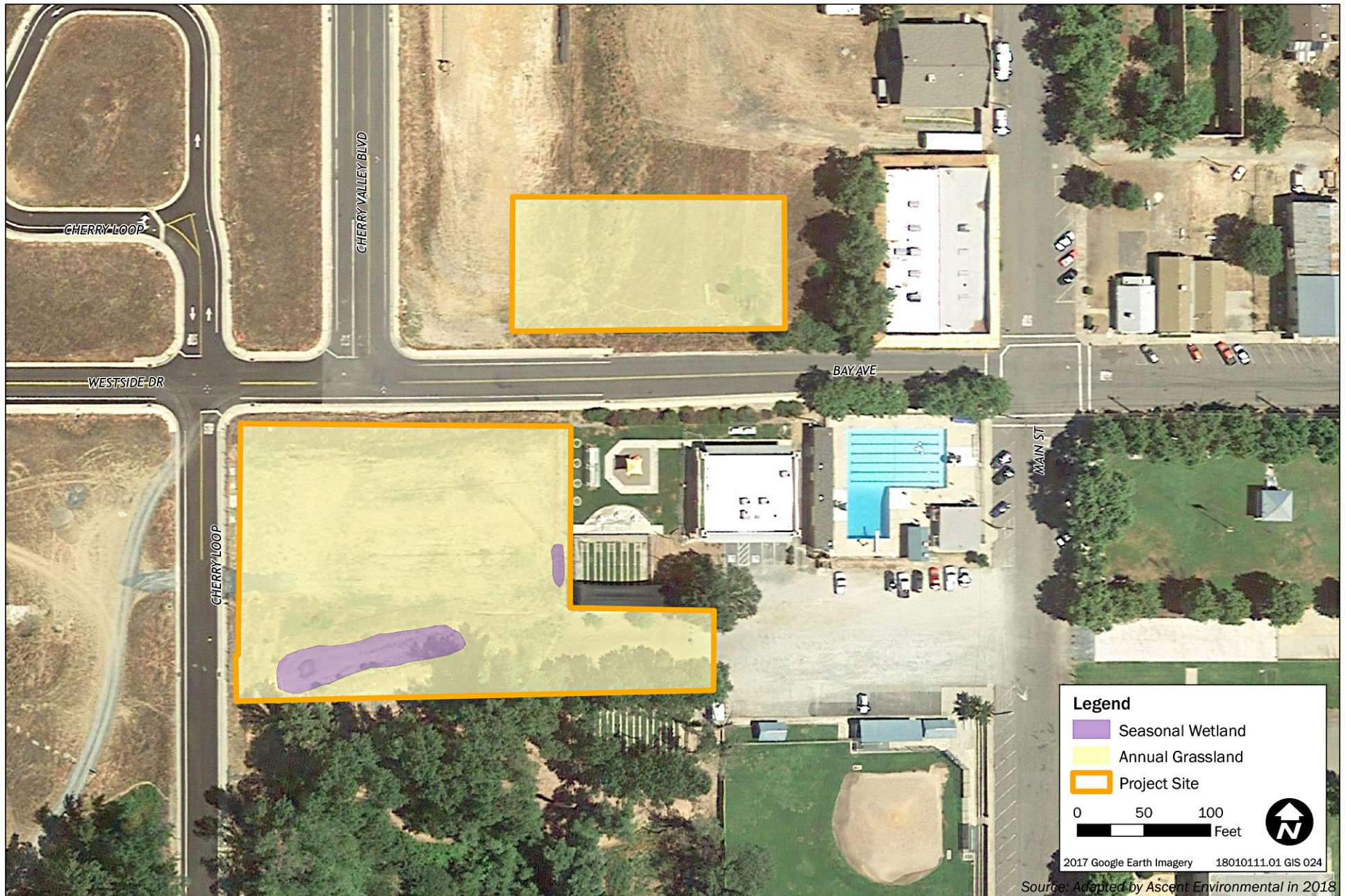


Exhibit 2

Tuolumne Site Land Cover



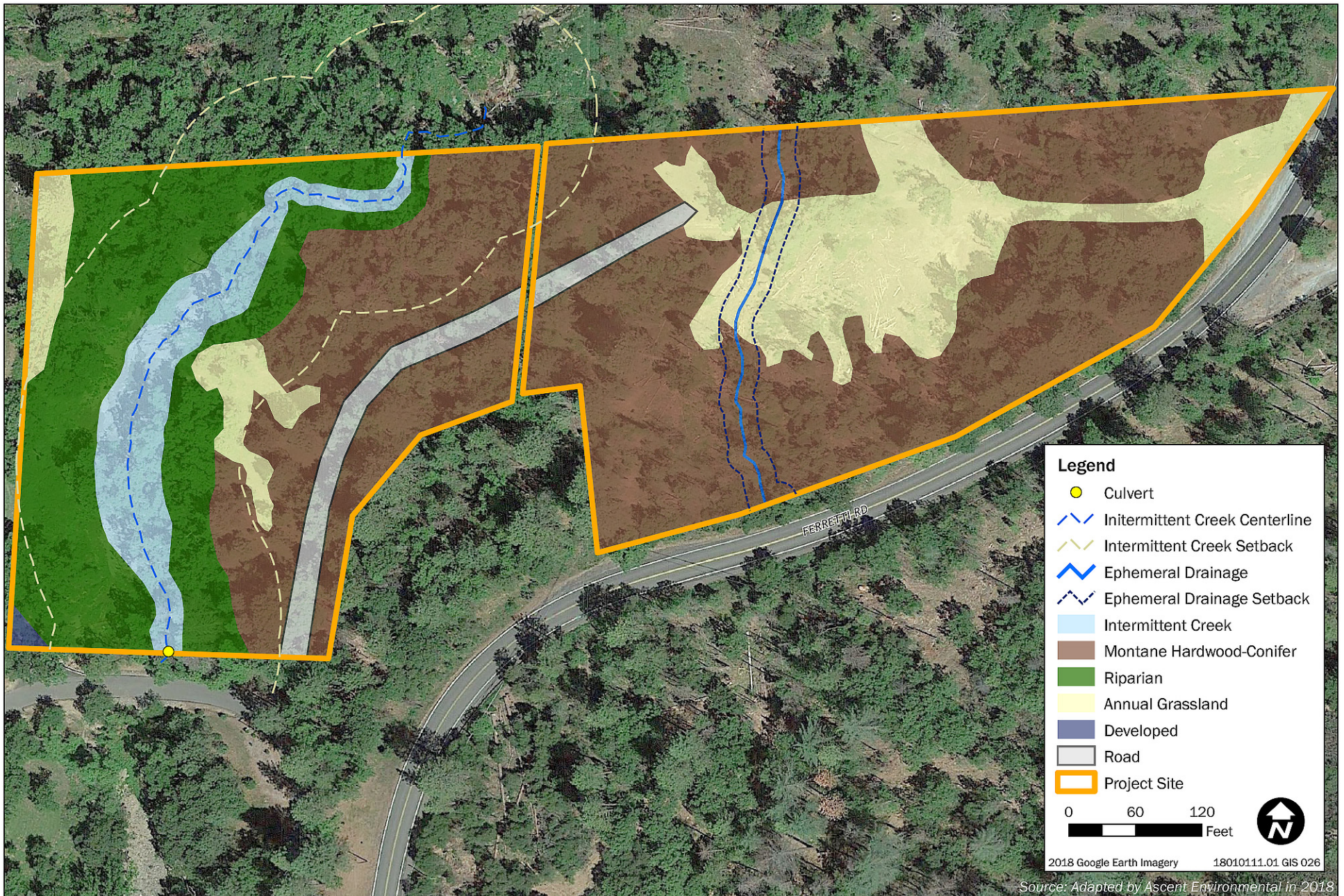


Exhibit 3

Groveland Site Land Cover

4.3 SPECIAL-STATUS SPECIES

Special-status species are plants and animals in the following categories:

- ▲ listed or proposed for listing as threatened or endangered under federal ESA or candidates for possible future listing;
- ▲ listed or candidates for listing by the State of California as threatened or endangered under CESA;
- ▲ listed as Fully Protected under the California Fish and Game Code;
- ▲ animals identified by DFW as species of special concern;
- ▲ plants considered by DFW to be “rare, threatened or endangered in California” (California Rare Plant Ranks of 1A, presumed extinct in California; 1B, considered rare or endangered in California and elsewhere; and 2, considered rare or endangered in California but more common elsewhere). Note, that while these ranking do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under CEQA;
- ▲ considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- ▲ otherwise meets the definition of rare or endangered under CEQA § 15380(b) and (d).

4.3.1 Tuolumne Site

No special-status plant or wildlife species are expected to occupy the Tuolumne project site because of a lack of suitable habitat and disturbed nature of the site.

4.3.2 Groveland Site

No special-status plant species are expected to occupy the Groveland project site because of a lack of suitable habitat. Three special-status wildlife species, western pond turtle, pallid bat, and western mastiff bat have the potential to be present in the Groveland site or to use it occasionally and are discussed in more detail below. See Attachment 1 for USFWS, CNDDDB, and CNPS records within 5 miles of the project sites.

WESTERN POND TURTLE

Western pond turtle is a California species of special concern. Western pond turtles are generally associated with permanent or near-permanent aquatic habitats, such as lakes, ponds, streams, freshwater marshes, and agricultural ditches. They require still or slow-moving water with emergent woody debris, rocks, or similar features for basking sites. Pond turtles are highly aquatic but can venture far from water to lay eggs. Nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils. Pond turtles can overwinter in upland sites.

Western pond turtles have been known to utilize waste water ponds and could seasonally utilize the intermittent stream at the Groveland site during the wet season to move between the waste water treatment plant ponds and Pine Mountain Lake. Due to the closed canopy within the riparian area, the project site does

not provide suitable basking areas for the western pond turtle. The upland area in the Groveland site does not provide suitable nesting habitat for the turtle because of its closed canopy and the north aspect of the upland area of the stream.

PALLID BAT

Pallid bat is a California species of special concern. Pallid bat typically occupies a wide variety of habitats, including grasslands, shrublands, woodlands, and forest from sea level up through mixed conifer forests. This bat is most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Roosts must protect bats from high temperatures. Bats move deeper into cover if temperatures rise. Night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but the bat probably uses rock crevices. There are no caves, rock crevices, mines or buildings within the project sites that could provide roosting habitat for this species, however, some of the large oaks with hollows or pines with exfoliating bark at the Groveland site may provide suitable roosting habitat for this species.

WESTERN MASTIFF BAT

Western mastiff bat is a California species of special concern. Western mastiff bat typically occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban habitats. Roosts in crevices in cliff faces, high buildings, trees, and tunnels are required for roosting. There are no rock crevices, high buildings, or tunnels within the project sites that could provide roosting habitat for this species; however, some of the large oaks with hollows or pines with exfoliating bark at the Groveland site provide suitable roosting habitat for this species.

4.4 WETLANDS, RIPARIAN HABITAT, AND OTHER SENSITIVE NATURAL COMMUNITIES

4.4.1 Tuolumne Site

The two parcels have drainage ditches that help drain upland areas. The north parcel has a drainage ditch that did not support wetlands plants or other indicators. The south parcel also has drainage ditch which receives water from the north parcel through a culvert, no wetland vegetation or other wetland indicators were observed within this ditch either. A culvert directs the water from this ditch south and the culvert daylight just on the other side of a gravel driveway on uplands at which point another culvert drains from the parcel southwest of the intersection between Cherry Valley Boulevard N and Bay Street.

The east boundary of the south parcel received runoff from the toddler play area, as well as from the horseshoe game pit area creating a seasonal wetland. Runoff from these areas accumulates on a low spot and wetland vegetation such as curly dock, plantain, nutsedge, and rush (*Eleocharis* sp.) were observed within the moist soil (See Attachment 2 - Photo 3). A larger seasonal wetland is also present within the Tuolumne south parcel and support wetland vegetation. These two seasonal wetlands may be waters of the United States due to potential connectivity with the adjacent riparian area.

4.4.2 Groveland Site

The Groveland west parcel at this site supports an intermittent creek that drains into Pine Mountain Lake and supports riparian vegetation along its banks (See Attachment 2 - Photo 11 and Photo 12). This creek would likely be considered a water of the United States. Similarly, the riparian area surrounding this creek

would be subject to regulation by the California Department of Fish and Wildlife under the Fish and Game Code because of its value to fish and wildlife species.

An ephemeral drainage is also present on the Groveland east parcel. This feature drains roadway storm water onto the site. High water flows have created a gully, but no wetland vegetation was observed within the drainage, the bed and bank dissipate and water overflows as evident by bent grasses and debris flow. Because this drainage drains into the intermittent creek, this drainage may also be considered a water of the United States (See Attachment 2 - Photo 7 and Photo 8).

4.5 NESTING BIRDS

4.5.1 Tuolumne Site

The Tuolumne site does not provide suitable habitat for nesting birds due to sparse vegetation and does not provide adequate nesting substrate. Although the Tuolumne site does not provide suitable nesting habitat, the cottonwood trees in the riparian area of the adjacent lot provide suitable habitat for raptors.

4.5.2 Groveland Site

The Groveland site provides suitable nesting habitat for ground and shrub/tree nesting birds. No nesting birds were observed during the field surveys; however, the surveys were conducted during the end of the nesting season. The Groveland site provides suitable nesting habitat for ground nesting birds such as the California quail (*Callipepla californica*), spotted towhee, mallard duck (*Anas platyrhynchos*), and wild turkey (*Meleagris gallopavo*). The shrubs, pines, and oak trees also provide suitable nesting habitat for shrub/tree nesting birds and raptors.

4.6 WILDLIFE MOVEMENT

Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors as these features can provide cover and access across a landscape.

4.6.1 Tuolumne Site

The Tuolumne site does not support a wildlife movement corridor because it is within the urban area of Tuolumne.

4.6.2 Groveland Site

Although a portion of the Groveland site supports an intermittent creek and riparian area, it does not contain an important regional wildlife corridor because the creek connects the developed areas of Groveland with the Pine Mountain Lake community and does not provide connectivity to larger patches of natural habitat on the landscape. Since the project would need to observe a 100-foot setback from the centerline of the creek (see discussion below), the riparian corridor would be protected, and the existing vegetation would act as a buffer so any local wildlife movement (e.g., skunk, raccoon) could still occur.

4.7 TUOLUMNE COUNTY WILDLIFE HANDBOOK

According to the TCWH, all target habitats (first and second priority) shall be protected through Open Space zoning to minimize potential impacts to these habitats pursuant to CEQA. Per the TCWH third priority habitat are to be included within Open Space only where protection of first and second priority habitats does not already total 20 percent of the project site.

4.7.1 Tuolumne Site

The majority of the Tuolumne site is annual grassland, which is a fourth priority habitat. The seasonal wetlands, which are a second priority habitat, occupy approximately 4 percent of the site (Table 1). Conversion of these habitat types, if they cannot be avoided, would require permitting and mitigation.

4.7.2 Groveland Site

The Groveland site contains intermittent creek and riparian habitat, which are second priority habitats, and montane conifer hardwood, which is a third priority habitat. The remainder of the site is annual grassland or developed, which are fourth priority habitat types, or ephemeral drainage, which does not have a prioritization category (Table 1).

Table 1 Land Cover Types

Project Site	Land Cover Type ¹	Habitat Value per TCHW	Approximate Acreage	Percentage of Project Site
Tuolumne North Parcel	Annual grassland - ruderal	Fourth	0.47	100
Tuolumne North Parcel Total			0.47	100
Tuolumne South Parcel	Annual grassland - ruderal	Fourth	1.25	69.06
Tuolumne South Parcel	Seasonal Wetland	Second	0.08	4.42
Tuolumne South Parcel	Urban/Developed	Fourth	0.48	26.52
Tuolumne South Parcel Total			1.81	100
Groveland East	Ephemeral drainage	N/A	0.02	0.48
Groveland East	Montane hardwood-conifer	Third	2.96	70.64
Groveland East	Annual grassland - ruderal	Fourth	1.14	27.21
Groveland East	Urban/Developed	Fourth	0.07	1.67
Groveland East Total			4.19	100
Groveland West	Intermittent creek	Second	0.55	14.10
Groveland West	Montane riparian woodland	Second	1.50	38.46
Groveland West	Montane hardwood-conifer	Third	1.34	34.36
Groveland West	Urban/Developed	Fourth	0.22	5.90
Groveland West	Annual grassland - ruderal	Fourth	0.28	7.10
Groveland West Total			3.9	100

Notes: Ascent Environmental 2018 Field Surveys and Tuolumne County Wildlife Handbook.

¹ See Locations on Exhibit 2 and Exhibit 3

The 100-foot buffer from the centerline of the intermittent creek, protects both the creek and the riparian habitat (both second priority habitats) totaling 52.56 percent of the total Groveland west site. This setback also protects 0.69 acre of montane hardwood-conifer, totaling 17.69 percent of the total Groveland west site. Similarly, the ephemeral drainage 15-foot buffer from the centerline of the drainage protects the entire ephemeral drainage (0.48 percent of the total acreage of the Groveland east parcel and 3.58 percent of montane hardwood-conifer (a third priority habitat) of the Groveland east parcel. These buffers meet the 20 percent protection of second priority habitat and third priority habitat, and together with the recommended measures would reduce effects on the intermittent creek, riparian corridor, and ephemeral drainage.

If these buffers cannot be implemented, the TCWH allows for other mitigation that can include creating, protecting, or improving habitats as similar as possible to those being disturbed by the project. This replacement habitat should be located adjacent to the project site or where most advantageous to wildlife of the County (TCWH Mitigation Measure HH).

4.8 CONFLICT WITH LOCAL POLICIES OR ORDINANCES

Construction in both sites could result in encroachment to potential wetlands. If these wetlands are not avoided and the loss of wetlands is not mitigated, the proposed project would conflict with Tuolumne County General Plan Policy 4.J.5 No Net Loss of Wetland Habitat.

Construction in the Groveland site could result in encroachment into the creek and/or drainage areas. The Tuolumne County Ordinance Code 16.24.180 Drainage Easements requires that fifteen feet in width drainage right-of-way be provided along the centerline of ephemeral drainages and thirty feet along the centerline of intermittent drainages. Constructing the proposed project within these drainage setbacks would conflict with Tuolumne County Ordinance Code.

Construction could result in the removal of montane hardwood conifer habitat which is designated as a third priority habitat. As such the project would need to observe a minimum acreage preservation of habitat (It should be noted that the Tuolumne County Wildlife Handbook states that Third Priority Habitat should be 20 percent of the site but setbacks around Second Priority Habitats [i.e., creeks, riparian areas] can count towards this 20 percent.) Constructing the project without minimizing impacts to montane hardwood conifer or observing a minimum acreage preservation would conflict with General Plan Implementation Program 4.J.a-4.

4.9 CONFLICT WITH ADOPTED HABITAT CONSERVATION PLANS

The Tuolumne and Groveland sites are not within an adopted Habitat Conservation Plan area, as such, construction of the project would not conflict with the provisions of an adopted Habitat Conservation Plan, or other approved conservation plan in the area.

5 SUMMARY

5.1 TUOLUMNE SITE

- ▲ The Tuolumne site is disturbed. Two seasonal wetlands are present within the south parcel, these wetlands may be waters of the United States.
- ▲ Due to its disturbed nature, the Tuolumne site does not provide suitable habitat for special-status plants or wildlife.

- Although not proposed for disturbance, the riparian area is immediately south of the Tuolumne project site, and the dripline of these trees encroach into the project site.
- The Tuolumne Site is not within an adopted habitat conservation plan area and does not provide an important wildlife movement corridor.

5.2 GROVELAND SITE

- The Groveland site is forested, but has had recent disturbance due to pine bark beetle tree management
- The Groveland east parcel supports an ephemeral drainage and the Groveland west parcel supports an intermittent creek and associated riparian area and an ephemeral drainage. The ephemeral drainage and the intermittent creek may be waters of the United States.
- The forested portions of the Groveland site provide suitable habitat for nesting birds and two special-status bat species. The intermittent creek area provides marginal habitat for western pond turtle.
- The riparian area within the Groveland site does not represent an important wildlife corridor since it connects two urban areas.
- The TCWH requires that all second priority habitats (i.e., intermittent creek, riparian area) be preserved with Open Space zoning, furthermore third priority habitat are to be included within Open Space only where protection of first and/or second priority habitats does not already total 20 percent of the project site, however, the setback already protects 52.56 percent of the Groveland west parcel.
- Potential conflicts with Tuolumne County General Plan and Code of Ordinance could occur if wetlands are not avoided or if drainage setbacks are not implemented.
- The Groveland site is not within an adopted habitat conservation plan area.

5.3 RECOMMENDATIONS

5.3.1 Aquatic Resources

The Tuolumne site supports two seasonal wetlands and the Groveland Site supports an intermittent creek and an ephemeral drainage. It is recommended that these features be avoided. In the event that these features cannot be avoided, an aquatic resources delineation would need to be conducted and submitted to the U.S. Army Corps of Engineers (USACE) for verification.

PROTECTIVE MEASURES

There are a number of available measures that the County could consider to avoid impacts to waters of the U.S. and waters of the State. These are listed below.

TUOLUMNE SITE

- On the Tuolumne site, it is recommended that the seasonal wetland adjacent to the toddler playing area and the horseshow pit area and the larger seasonal wetland be avoided entirely.
- Although the riparian area adjacent to the Tuolumne site is not proposed for disturbance, the dripline of some of these riparian trees encroach onto the Tuolumne project site area. To ensure that no impacts to

the riparian area occur, all project activities should avoid the dripline of the riparian trees. If the dripline of these trees cannot be avoided, an arborist should evaluate if there would be an impact to the health and survival of the trees.

GROVELAND SITE

- ▲ On the Groveland site, to comply with the TCWH, the required O (Open Space) zoning for the riparian area should be adopted before issuance of a grading permit or building permit for project construction. Note that the County may determine that methods of perpetual open-space conservation other than zoning (i.e., conservation easements) would be consistent with the intent of the TCWH.
- ▲ Similarly, all construction elements within the Groveland site should be constructed at least 100-feet from the centerline of the unnamed intermittent creek, and at least 15-feet from the centerline of the ephemeral drainage. The 100-foot buffer is recommended to fully protect existing riparian vegetation along the unnamed intermittent drainage. All construction within the Tuolumne site should avoid the identified boundaries of the seasonal wetlands.

FOR BOTH LOCATIONS

- ▲ All areas to be avoided during construction activities should be fenced or flagged as close to construction limits as possible.
- ▲ Where wetlands or other waters cannot be avoided by project-related activities, a preliminary wetland delineation should be conducted and submitted to USACE for verification. The aquatic resources may also be subject to RWQCB, and DFW regulation under Section 1602 of the Fish and Game Code. No grading, fill, vegetation removal, or other ground disturbing activities should occur within these features until all required permits, regulatory approvals, and permit conditions for effects on aquatic resources are secured.
- ▲ For those wetlands that cannot be avoided, Tuolumne County should commit to replace, restore, or enhance on a “no net loss” basis (in accordance with USACE, RWQCB, and DFW). Wetland habitat should be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, RWQCB, and DFW, as appropriate, depending on agency jurisdiction, and as determined during the permitting processes. This measure would be consistent with TCWH mitigation.

5.3.2 Western Pond Turtle

GROVELAND SITE

Due to the proximity of wastewater treatment ponds and the presence of the intermittent creek, there is a moderate to low potential for western pond turtle to occur within the Groveland site. To avoid injury or mortality of western pond turtle the following protective measures are provided.

PROTECTIVE MEASURES

- ▲ Before ground disturbance, the County or its contractor should identify the limits of construction, access route and avoidance areas.
- ▲ A pre-construction survey for western pond turtle should be conducted by a qualified biologist within 24 hours before the commencement of ground disturbance activities. Surveys should be conducted within the project disturbance areas and all access routes to avoid and minimize injury or mortality of western pond turtle. If a western pond turtle is found within the work areas, exclusion fencing should be installed surrounding the construction areas and the western pond turtle should be allowed to move outside of

the construction area on its own volition. If this is not feasible, the turtle(s) should be captured by a qualified biologist and relocated out of the construction area to suitable habitat at least 100 feet from the work area.

5.3.3 Occupied Roosting Bats

GROVELAND SITE

The forested habitat within the Groveland site would require some tree removal. Some of these trees could provide suitable day roosts, maternity colony roosts, and/or hibernation roosts for bats. Special-status bats that could roost on site include pallid bat and western mastiff bat.

Removal of roosting trees, or other construction activities that cause noise, vibration, or physical disturbance to these trees, could affect the survival of adult or young bats if they are present within the trees identified for removal at the time of the activity.

PROTECTIVE MEASURES

Surveys for roosting bats on the project site should be conducted by a qualified biologist. Surveys should consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and/or an evening emergence survey to note the presence or absence of bats. The type of survey would depend on the condition of the trees to be removed. If no bat roosts are found, then no further study would be required. If evidence of bat use is observed, the number and species of bats using the roost should be determined.

If roosts of pallid, and/or western mastiff bats are determined to be present and must be removed, the bats should be excluded from the roosting site before the tree is removed. A program addressing compensation, exclusion methods, and roost removal procedures should be developed in consultation with DFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter) or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) should be replaced in consultation with DFW and may include salvaging of the roost tree and securing it to a tree within the Open space zone area or construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement should be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the trees may be removed or sealed.

5.3.4 Nesting Birds

BOTH SITES

To minimize potential disturbance to nesting birds, project activities, including vegetation removal and grading, should occur during the non-breeding season (September 1 – February 1) unless it is not feasible to do so, in which case the following measures should be applied. Although the Tuolumne site does not provide suitable nesting habitat, the adjacent riparian area may provide suitable nesting habitat and activities within the project site may affect nesting birds if present.

- ▲ Removal of trees greater than 5 inches diameter at breast height should be limited to the greatest degree possible.
- ▲ If construction activity is scheduled to occur during the nesting season (February 14 to September 14), a qualified biologist should conduct preconstruction surveys to identify active nests on and within 500 feet

of the project site that could be affected by project construction. The surveys should be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction in a particular area. If no nests are found, no further mitigation is required.

- ▲ If active nests are found, impacts on nesting native birds should be avoided by establishment of appropriate buffers around the nests. No project activity should commence within the buffer area until a qualified biologist confirms that any young have fledged, or the nest is no longer active. A 500-foot buffer around raptor nests and a 35-foot buffer around other native bird nests are generally adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with DFW depending on species and site-specific conditions. If construction cannot be delayed within the buffer area, monitoring of the nest by a qualified biologist during construction activities should be required if the activity has potential to adversely affect the nest.

6 REFERENCES

- California Natural Diversity Database. 2018. Geographic Information System database search for 5-mile radius of the Tuolumne and Groveland sites. Biogeographic Data Branch, California Department of Fish and Game, Sacramento, California. August 23, 2018.
- California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants (online edition, v8-03). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed August 23, 2018].
- CNDDb. See California Natural Diversity Database.
- CNPS. See California Native Plant Society, Rare Plant Program.
- Frank, Maureen. Deputy County Administrator, Tuolumne County. August 27, 2018—spoke with Carlos Alvarado of Ascent Environmental regarding the two project locations and trees removed at the Groveland site due to pine bark beetle infestation. Sonora, CA.
- Tuolumne County. 1996. *Tuolumne County General Plan*. Website <https://www.tuolumnecounty.ca.gov/185/General-Plan-Policy> [accessed September 5, 2018]
- Tuolumne County. 1987. *Tuolumne County Wildlife Handbook*. Tuolumne County Planning Department. Sonora CA.
- U.S. Fish and Wildlife Service. 2018. Information for Planning and Consultation Resource List for the Tuolumne and Groveland Sites. <https://ecos.fws.gov/ipac/location/CIXVK4MFFNDZTEJATDNQIWOJE4/resources> and <https://ecos.fws.gov/ipac/location/NF3MIPPLUZB2ZF3SNDUT2ZWKRA/resources>. Accessed August 23, 2018.
- USFWS. See U.S. Fish and Wildlife Service.

Attachment 1

Database Queries

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Tuolumne County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project-level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following.

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the Fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered. IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location.

Amphibians

name	status
California Red-legged Frog: <i>Rana dybowskii</i> There is no critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2991	Threatened

Fishes

name	status
Delta Smelt: <i>Hypomesus transpacificus</i> There is no critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Bird Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links.

- Birds of Conservation Concern <http://www.fws.gov/ids/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/ids/management/impact-assessment-101-b-and-guidance/conservation-measures.php>

<https://ecos.fws.gov/ipac/location/C/D/K/K4MF/FNDZTEJATDNOJOJE4/e/sources#wetlands>

2/4

- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwideconservationmeasures.pdf>

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BOC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey banding](#) and [citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10 m grid cells within your project. Insects, and that have been identified as warranting special attention because they are a BOC species in that area, a eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource List includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey banding](#) and [citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e., breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology's All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology's eBird](#) birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the time frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BOC Range-wide" birds are [Birds of Conservation Concern \(BOC\)](#) that are of concern throughout the range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands).
2. "BOC - BCR" birds are BOC that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA, and
3. "Non-BOC - Vulnerable" birds are not BOC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibility to offshore areas from certain types of development or activities (e.g., offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BOC species of eagle concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Biodiversity Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCEM's Interactive Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [National Audubon Society](#) or contact [Caitlin Selinger](#) or [Pam Lorch](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location?". Please be aware this report provides the "probability of presence" of birds within the 10 m grid cells that overlap your project, not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird list resources page.

Facilities

Wildlife refuges and fish hatcheries

RIGHT AND DEEDS MATCHERY INFORMATION IS NOT AVAILABLE AT THE TIME

Wetlands in the National Wetlands Inventory

Impacts to [Wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THE LOCATION.

Data Limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analyst, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National Mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reef communities (coral or tube/dome worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt in either the design or products of this inventory to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetlands should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdiction that may affect such activities.

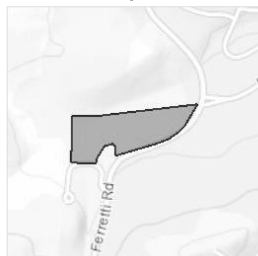
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Tuolumne County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following.

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the Fisheries Division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered. IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location.

Amphibians

name	status
California Red-legged Frog: <i>Rana draytonii</i> There is no critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2991	Threatened

Fishes

name	status
Delta Smelt: <i>Hypomesus transpacificus</i> There is no critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Critical habitats

Potential effects to critical habitats in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Bird Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links.

- Birds of Conservation Concern: <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds: <http://www.fws.gov/birds/management/impact-assessment-toolkit-and-guidance/conservation-measures.php>

<https://ecos.fws.gov/ipac/location/NF3MIPP/LUZB2ZF3SNDUT2ZM/KRA/resources#wetlands>

2/6

- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwideandoutconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BOC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [Field data mapping tool](#) (Tip: enter your location, desired date range and species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST. THE BIRD MAY BREED IN YOUR PROJECT AREA SOME TIME WITHIN THE FOLLOWING SPECIFIC DATES, WHICH IS A VERY BROAD ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS EVERYWHERE" INDICATES THAT THE BIRD DOES NOT KNOWNLY BREED IN YOUR PROJECT AREA.)
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BOC) in this area, but warrants attention because of the Eagle Act for potential susceptibility in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1586	Breeds Jan 1 to Aug 31
Common Yellowthroat <i>Geothlypis trichas s. inornata</i> This is a Bird of Conservation Concern (BOC) only in particular Bird Conservation Regions (BCRs) in the continental USA. https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BOC) in this area, but warrants attention because of the Eagle Act for potential susceptibility in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1580	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch <i>Carduelis lawrencei</i> This is a Bird of Conservation Concern (BOC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Mourning Woodpecker <i>Picoides murallii</i> This is a Bird of Conservation Concern (BOC) only in particular Bird Conservation Regions (BCRs) in the continental USA. https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BOC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9686	Breeds Mar 15 to Jul 15
Rufous Hummingbird <i>Selasphorus rufus</i> This is a Bird of Conservation Concern (BOC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BOC) only in particular Bird Conservation Regions (BCRs) in the continental USA. 	Breeds Feb 20 to Sep 5
Spotted Towhee <i>Pipilo maculatus clemensae</i> This is a Bird of Conservation Concern (BOC) only in particular Bird Conservation Regions (BCRs) in the continental USA. https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
White Headed Woodpecker <i>Picoides albolarvatus</i> This is a Bird of Conservation Concern (BOC) only in particular Bird Conservation Regions (BCRs) in the continental USA. https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Wren tit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BOC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project areas. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (i)

Each green bar represents the bird's relative probability of presence in the 10 km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps.

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (ii)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project areas.

Survey Effort (i)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10 km grid cell(s) your project areas overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

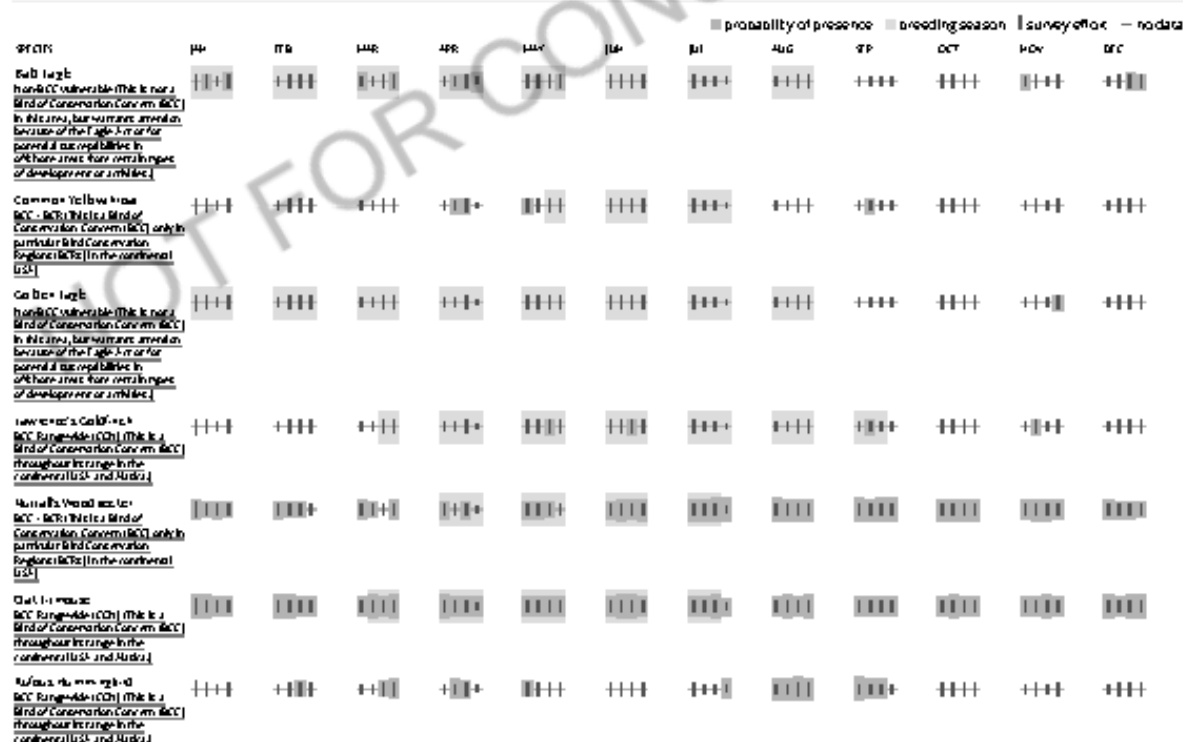
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

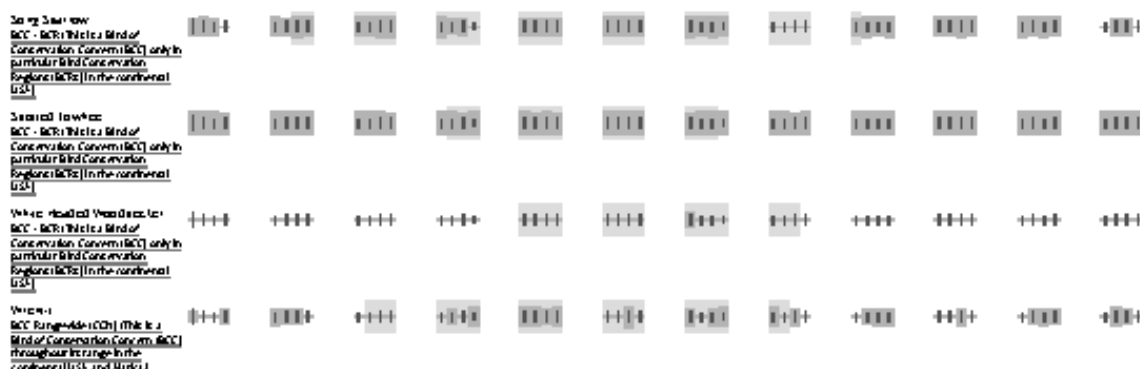
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Habitat Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the [Probability of Presence Summary](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BOC\)](#) and one species that may vary in species listing in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 100 m grid cell(s) within your project footprint, and that have been identified as warranting special attention because they are a BOC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activity or development.

Again, the Migratory Bird Resource List includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explorer Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the [Probability of Presence Summary](#) and click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e., breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology's All About Birds Bird Guide](#). Or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds Guide](#). If a bird on your migratory bird species list has a breeding season associated with it, that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BOC Range-wide" birds are [Birds of Conservation Concern \(BOC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands).
2. "BOC - BCR" birds are BOCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA, and
3. "Non-BOC - Vulnerable" birds are not BOC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibility to offshore areas from certain types of development or activities (e.g., offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BOC species of eagle-like concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Offshore Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternatively, you may download the bird model results files underlying the Portal maps through the [NOAA-NEOS Interactive Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [seabird studies](#) or contact [Caleb Selinger](#) or [Pam Lecher](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location?". Please be aware this report provides the "probability of presence" of birds within the 100 m grid cell(s) that overlap your project, not your exact project footprint. On the graphs

provided, please take care to fully rate the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort, or no data bar, means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THE LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWAI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWAI data being shown may be out of date. We are currently working to update our NWAI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RMFRH

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analyst, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National Mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include saltgrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reed communities (such as rice field worm reeds) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in the design or production of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specific agency regulatory programs and proprietary jurisdiction that may affect such activities.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: BIOS selection

Groveland Site

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Allium tuolumnense</i> Rawhide Hill onion	PMLIL022W0	None	None	G2	S2	1B.2
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Banksula tuolumne</i> Tuolumne cave harvestman	ILARA14090	None	None	G1	S1	
<i>Clarkia biloba ssp. australis</i> Mariposa clarkia	PDONA05051	None	None	G4G5T3	S3	1B.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Cryptantha spithamea</i> Red Hills cryptantha	PDBOR0A2M2	None	None	G2	S2	1B.3
<i>Diplacus pulchellus</i> yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2	S2	1B.2
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	PDAP10Z0P0	None	None	G2	S2	1B.2
<i>Erythranthe filicaulis</i> slender-stemmed monkeyflower	PDSCR1B150	None	None	G2	S2	1B.2
<i>Erythronium tuolumnense</i> Tuolumne fawn lily	PMLIL0U0H0	None	None	G2G3	S2S3	1B.2
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<i>Lasiurus blossevillei</i> western red bat	AMACC05060	None	None	G5	S3	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Monadenia circumcarinata</i> keeled sideband	IMGASC7020	None	None	G1	S1	
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Strix nebulosa</i> great gray owl	ABNSB12040	None	Endangered	G5	S1	
<i>Stygobromus harai</i> Hara's Cave amphipod	ICMAL05470	None	None	G1G2	S1S2	

Record Count: 19



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: BIOS selection

Tuolumne Site

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Clarkia australis</i> Small's southern clarkia	PDONA05040	None	None	G2	S2	1B.2
<i>Clarkia biloba ssp. australis</i> Mariposa clarkia	PDONA05051	None	None	G4G5T3	S3	1B.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Diplacus pulchellus</i> yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2	S2	1B.2
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	PDAP10Z0P0	None	None	G2	S2	1B.2
<i>Erythronium tuolumnense</i> Tuolumne fawn lily	PMLIL0U0H0	None	None	G2G3	S2S3	1B.2
<i>Euderma maculatum</i> spotted bat	AMACC07010	None	None	G4	S3	SSC
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Lavinia symmetricus ssp. 1</i> San Joaquin roach	AFCJB19021	None	None	G4T3Q	S3	SSC
<i>Lomatium stebbinsii</i> Stebbins' lomatium	PDAP11B1V0	None	None	G2	S2	1B.1
<i>Margaritifera falcata</i> western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
<i>Monadenia circumcarinata</i> keeled sideband	IMGASC7020	None	None	G1	S1	
<i>Monadenia mormonum buttoni</i> Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1S2	
<i>Monadenia tuolumneana</i> Tuolumne sideband	IMGASC7100	None	None	G1	S1	
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC

Record Count: 18



California Native Plant Society

Inventory of Rare and Endangered Plants

Plant List

15 matches found. [Click on scientific name for details](#)

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3], Found in Quads 3712082, 3712083 3712073 and 3712072;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifefrom	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	1B.2	S2	G2
Allium tuolumnense	Rawhide Hill onion	Alliaceae	perennial bulbiferous herb	Mar-May	1B.2	S2	G2
Clarkia australis	Small's southern clarkia	Onagraceae	annual herb	May-Aug	1B.2	S2	G2
Clarkia biloba ssp. australis	Mariposa clarkia	Onagraceae	annual herb	Apr-Jul	1B.2	S2S3	G4G5T2T3
Clarkia rostrata	beaked clarkia	Onagraceae	annual herb	Apr-May	1B.3	S2S3	G2G3
Cryptantha spithamea	Red Hills cryptantha	Boraginaceae	annual herb	Apr-May	1B.3	S2	G2
Diplacus pulchellus	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	Apr-Jul	1B.2	S2	G2
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual / perennial herb	May-Aug	1B.2	S2	G2
Erythranthe filicaulis	slender-stemmed monkeyflower	Phrymaceae	annual herb	Apr-Aug	1B.2	S2	G2
Erythronium tuolumnense	Tuolumne fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jun	1B.2	S2S3	G2G3
Lomatium congdonii	Congdon's lomatium	Apiaceae	perennial herb	Mar-Jun	1B.2	S2	G2
Lupinus spectabilis	shaggyhair lupine	Fabaceae	annual herb	Apr-May	1B.2	S2	G2
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2
Pseudobahia bairdii	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	1B.1	S2	G2
Senecio clevelandii var. heterophyllus	Red Hills ragwort	Asteraceae	perennial herb	May-Jul	1B.2	S2	G4T2Q

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v6-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 23 August 2018].

Search the Inventory

[Simple Search](#)
[Advanced Search](#)
[Glossary](#)

Information

[About the Inventory](#)
[About the Rare Plant Program](#)
[CNPS Home Page](#)
[About CNPS](#)
[Join CNPS](#)

Contributors

[The California Database](#)
[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalP Photos](#)

Questions and Comments

rareplants@cnps.org

© Copyright 2010-2018 California Native Plant Society. All rights reserved.

This page intentionally left blank.

Attachment 2

Photographs



Source: Ascent 2018

Photo 1. Representative view of Tuolumne south parcel.



Source: Ascent 2018

Photo 2. Representative view of Tuolumne south parcel.



Source: Ascent 2018

Photo 3. Tuolumne south parcel - Representative photograph of wetland plants growing adjacent to eastern boundary with toddler play area.



Source: Ascent 2018

Photo 4. Tuolumne south parcel - Representative photograph of human-created wetland outside of the south parcel.



Source: Ascent 2018

Photo 5. Groveland east parcel - Representative view of the montane hardwood-conifer habitat.



Source: Ascent 2018

Photo 6. Groveland east parcel - pine removal due for pine beetle control.



Source: Ascent 2018

Photo 7. Groveland east parcel - Representative view of ephemeral drainage.



Source: Ascent 2018

Photo 8. Groveland east parcel - ephemeral drainage within pine removal area.



Source: Ascent 2018

Photo 9. Groveland east parcel - representative view of electric utility corridor.



Source: Ascent 2018

Photo 10. Groveland site - representative view of existing access road connecting the east and west parcels.



Source: Ascent 2018

Photo 11. Groveland west parcel -representative view of intermittent creek and riparian area.



Source: Ascent 2018

Photo 12. Groveland west parcel - Culvert under the Groveland Community Service District access road showing scouring pool.



Source: Ascent 2018

Photo 13. Groveland west parcel – representative view of montane hardwood-conifer habitat.



Source: Ascent 2018

Photo 14. Groveland west parcel – representative view of unknown wells.

This page intentionally left blank.

Appendix C

Noise Calculations

Construction Source Noise Prediction Model: Tuolumne

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)	Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet ¹	Usage Factor ¹
Threshold Residence 1	2,706	50.0	Front End Loader	80	0.4
	100	78.6	Grader	85	0.4
	300	69.1	Dozer	85	0.4

Ground Type	HARD
Source Height	8
Receiver Height	5
Ground Factor ²	0.00

Predicted Noise Level ³	L_{eq} dBA at 50 feet ³
Front End Loader	76.0
Grader	81.0
Dozer	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.7

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS si	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jac	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-tru	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0

Source:

FHWA Roadway Construction Noise Model, January 2006. Table 9.1

U.S. Department of Transportation

CA/T Construction Spec. 721.560

Distance Propagation Calculations for Stationary Sources of Ground Vibration



KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

- If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.
- If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level		
	vibration level (VdB)	@	distance (ft)
large bull dozer	87.0	@	25

STEP 3A: Select the distance to the receiver.

Attenuated Noise Level at Receptor		
vibration level (VdB)	@	distance (ft)
80.2	@	42

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level		
	vibration level (PPV)	@	distance (ft)
large bull dozer	0.089	@	25

STEP 3B: Select the distance to the receiver.

Attenuated Noise Level at Receptor		
vibration level (PPV)	@	distance (ft)
0.089	@	25

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 12-11 of FTA 2006. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Traffic Noise Spreadsheet Calculator



Project:

Segment Description and Location				Existing	Existing +	Δ Existing –	Cumulative	Δ Cumulative –
Number	Name	From	To	Conditions	Project	Existing +	Cumulative	+Project
Summary of Net Changes				Conditions	Conditions	Project	Conditions	Cumulative +
1	Bay Street	Cherry Valley Blvd	Pine Street	50.8	51.7	0.9		
2	Cherry Valley Blvd	Bay St	Tuolumne Rd	51.0	51.6	0.6	#N/A	#N/A
3	Tuolumne Road	Wards Ferry Road	Cherry Valley Road	58.3	58.4	0.1	#N/A	#N/A
4	Tuolumne Road	Cherry Valley Road	SR 108	57.0	57.0	0.0	#N/A	#N/A

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator



Project:

Noise Level Descriptor: CNEL

Site Conditions: Soft

Traffic Input: ADT

Traffic K-Factor:

Input

Output

[illegible]

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

**Project:**

Noise Level Descriptor: CNEL

Site Conditions: Soft

Traffic Input: ADT

Traffic K-Factor:

[illegible]

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation # Citations

- | | | |
|----|--|--|
| 1 | Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60. | Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17. |
| 2 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60. | Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17. |
| 3 | Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32. | FHWA 2004 TNM Version 2.5 |
| 4 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48. | FHWA 2004 TNM Version 2.5 |
| 5 | Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56. | Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-51, 52. |
| 6 | Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57. | Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-53. |
| 7 | Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53. | Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57. |
| 8 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45. | FHWA 2004 TNM Version 2.5 |
| 9 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45. | FHWA 2004 TNM Version 2.5 |
| 10 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45. | FHWA 2004 TNM Version 2.5 |
| 11 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49. | FHWA 2004 TNM Version 2.5 |
| 12 | Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49. | FHWA 2004 TNM Version 2.5 |
| 13 | Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67 | |
| 14 | Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69 | |
| 15 | Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69 | |

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed August 17, 2017.

California Department of Transportation (Caltrans). 2013 (September). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed August 17, 2017.

Federal Highway Administration. 2004. Traffic Noise Model Version 2.5. Available: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/. Accessed August 17, 2017.

Appendix D

Transportation Impact Study

Tuolumne Community Resiliency Center

Tuolumne County, CA

Transportation Impact Study



Final Report

Prepared For:

Ascent Environmental, Inc.

March 2019

Prepared By:



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

**Tuolumne Community Resiliency Center
Tuolumne County, CA**

TRANSPORTATION IMPACT STUDY

FINAL REPORT

**Prepared For:
Ascent Environmental, Inc.**

Prepared By



**3301 C Street, Building 100-B
Sacramento, CA 95816
(916) 341-7760**

March 2019

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
1. INTRODUCTION.....	3
1.1 Project Description	3
1.2 Study Area.....	3
1.2.1 Roadway Segments.....	3
1.3 Analysis Scenarios.....	5
1.4 Analysis Methods.....	5
1.5 Level of Service Standards and Significant Impact Criteria	7
1.6 Report Organization	7
2. EXISTING CONDITIONS.....	8
2.1 Existing Roadway Network	8
2.2 Pedestrian Facilities	8
2.3 Bicycle Facilities	8
2.4 Existing Transit Service	9
2.5 Existing Roadway Segment Volumes	9
2.6 Existing Roadway Segment Operations	10
3. EXISTING PLUS PROJECT CONDITIONS.....	12
3.1 Project Site Description.....	12
3.2 Project Generated Trips	12
3.2.1 Trip Generation.....	12
3.2.2 Project Trip Distribution and Assignment.....	13
3.3 “Existing plus Project” Roadway Segment Operations.....	16
4. NEAR-TERM NO PROJECT	17
4.1 Roadway Segment Operations.....	17
5. NEAR-TERM PLUS PROJECT.....	19
5.1 Roadway Segment Operations.....	19
6. CUMULATIVE (LONG-TERM) NO PROJECT.....	21
6.1 Roadway Segments Operations	21
7. CUMULATIVE (LONG-TERM) PLUS PROJECT.....	23
7.1 Roadway Segments Operations	23
8. IMPACTS AND MITIGATION MEASURES.....	25
8.1 Roadway Segments.....	25
8.2 Vehicle Miles Traveled.....	25
8.3 Bicycle, Pedestrian and Transit Facilities	25
9. SITE ACCESS AND CIRCULATION	26
9.1 Project Parking.....	26
9.2 Project Driveways and Internal Circulation.....	26
9.3 Sight Distance at Project Driveways and Distance between Approaches	26

LIST OF FIGURES

Figure 1. Project Location and Study Facilities	4
Figure 2. "Existing" Traffic Volumes	11
Figure 3. "Project Only" Trip Distribution and Assignment	14
Figure 4. "Existing plus Project" Traffic Volumes	15
Figure 5. "Near-term No Project" Traffic Volumes.....	18
Figure 6. "Near-term plus Project" Traffic Volumes	20
Figure 7. "Cumulative (long-term) No Project" Traffic Volumes.....	22
Figure 8. "Cumulative (long-term) plus Project" Traffic Volumes.....	24

LIST OF TABLES

Table 1. TCTC Generalized Roadway ADT LOS Lookup Table	6
Table 2. "Existing" Conditions Roadway Segment Traffic Operations	10
Table 3. Project Trip Generation Rates.....	13
Table 4. Project Trip Generation Volumes.....	13
Table 5. "Existing plus Project" Conditions Roadway Segments Traffic Operations	16
Table 6. "Near-term No Project" Conditions Roadway Segments Traffic Operation.....	17
Table 7. "Near-term plus Project" Conditions Roadway Segment Traffic Operations	19
Table 8. "Cumulative (long-term) No Project" Conditions Roadway Segment Traffic Operations...	21
Table 9. "Cumulative (long-term) plus Project" Conditions Roadway Segment Traffic Operations .	23
Table 10. Sight Distance at Project Driveways and Distance between Approaches	27

APPENDICES

Appendix A – Project Site Plan

Appendix B – Raw Count Sheets

Appendix C – Required Minimum Intersection Sight Distance Triangles

EXECUTIVE SUMMARY

This report has been prepared to present the results of a Transportation Impact Study (TIS) performed by Wood Rodgers, Inc. for a proposed Community Resiliency Center (Project) in the community of Tuolumne, California. This analysis has been performed to determine any impacts the proposed Project may have on surrounding transportation facilities and potential mitigation measures that could be implemented to address any significant impacts. This TIS report was prepared in accordance with Tuolumne County, California Environmental Quality Act (CEQA), and National Environmental Policy Act (NEPA) requirements and guidelines.

PROJECT SITE DESCRIPTION

The Project envisions development of two currently vacant parcels located at the intersection of Cherry Valley Boulevard and Bay Street in Tuolumne, CA. An approximately 12,000 square foot Community Resiliency Center building and adjacent parking lot is planned to be located directly south of the Cherry Valley Boulevard / Bay Street intersection and west of the Tuolumne Youth Center (southern parcel). An additional Project parking lot would be constructed on the northeast quadrant of the Cherry Valley Boulevard / Bay Street intersection (northern parcel). The southern parcel would gain access to the surrounding roadway network via a proposed driveway to be located on Cherry Loop. The northern parcel would gain access to the surrounding roadway network via one proposed driveway on Bay Street and one proposed driveway on Cherry Valley Boulevard.

PROJECT GENERATED TRIPS

New trips generated by the proposed Project were estimated using rates from the *Institute of Transportation Engineers Trip Generation Manual, 10th Edition*. The proposed Project is anticipated to generate a total of 346 daily trips, 22 new AM peak hour (15 inbound, 7 outbound), and 28 new PM peak hour (13 inbound, 15 outbound) trips under typical annual average traffic demand conditions.

ROADWAY SEGMENT OPERATIONS, IMPACTS, AND MITIGATION MEASURES

This TIS report analyzed four (4) study roadway segments under “Existing”, “Existing plus Project”, “Near-term No Project”, “Near-term plus Project”, “Cumulative (long-term) No Project”, and “Cumulative (long-term) plus Project” weekday daily conditions. Study roadway segments were chosen based on projected travel patterns of Project site trips, knowledge of the area, and engineering judgement. Average Daily Traffic (ADT)-based Level of Service (LOS) standards and significant impact criteria used in this TIS were based on the Tuolumne County Transportation Council (TCTC) Roadway ADT LOS Lookup Table shown in **Table 1**.

All study roadway segments are projected to operate at acceptable LOS “D” or better under “Existing”, “Existing plus Project”, “Near-term No Project”, “Near-term plus Project”, “Cumulative (long-term) No Project”, and “Cumulative (long-term) plus Project” weekday daily conditions.

The Project would generate approximately 3,564 daily Vehicle Miles Traveled (VMT) in Tuolumne County.

PROJECT DRIVEWAY SIGHT DISTANCES AND DISTANCES BETWEEN APPROACHES

Driveway sight distances for the Project were analyzed against sight distance requirements for commercial roads/driveways contained in the *Tuolumne County Community Resources Agency Roads Division Encroachment Permit Information Packet* (Tuolumne County, 2014). The distances between the proposed Project driveways and the nearest approaches were also analyzed against the minimum

recommended distances between a commercial approach and any other approach contained in the *County Encroachment Permit Information Packet*. All proposed Project driveways are projected to meet the County's sight distance and distance between approaches requirements.

I. INTRODUCTION

This report has been prepared to present the results of a TIS performed by Wood Rodgers, Inc. for a proposed Community Resiliency Center located in the census-designated place of Tuolumne in Tuolumne County (County), California. This analysis has been performed to determine any impacts the proposed Project may have on surrounding transportation facilities and potential mitigation measures that could be implemented to address any significant impacts caused by the Project. This analysis focuses on typical weekday operating conditions at the Project site, and not special event scenarios such as during a natural disaster. This TIS includes sight distance analysis for potential Project site driveway locations.

I.1 PROJECT DESCRIPTION

The Project site consists of two parcels located at the intersection of Cherry Valley Boulevard and Bay Street in Tuolumne, CA. An approximately 12,000 square foot community resiliency center building and adjacent parking lot is planned to be located on the south side of the Cherry Valley Boulevard / Bay Street T-intersection, west of the Tuolumne Youth Center. An additional Project parking lot would be constructed on the northeast quadrant of the Cherry Valley Boulevard / Bay Street intersection. Total paved parking area between the two parcels would be approximately 65,000 square feet. The Project site would provide approximately 200 parking stalls for its users. The Project site location is shown on the map in **Figure 1**. The Project Site Plan (Lionakis, dated September 25, 2019) may be found in **Appendix A**.

The Community Resiliency Center will be designed with flexible spaces and areas that can be utilized by multiple people/groups at the same time. The building is planned to contain the following spaces: a lobby area, a large gathering room (100-200 person capacity), a few small classroom type rooms, a commercial kitchen, and restrooms. The County will be contracting with Non-Profit Groups to oversee the activities of the facility and schedule meetings. One (1) Facilities Management staff may also be required. Non-Emergency facility uses and activities include rentals by various community groups and businesses for meetings, trainings, parties, and fundraisers. Governmental Entities will also use these facilities to hold town hall meetings and make presentations. Emergency uses and activities include utilizing the facility as an emergency shelter, as temporary housing, for possible feeding of first responders, and for emergency responders to conduct community briefings during emergency events.

I.2 STUDY AREA

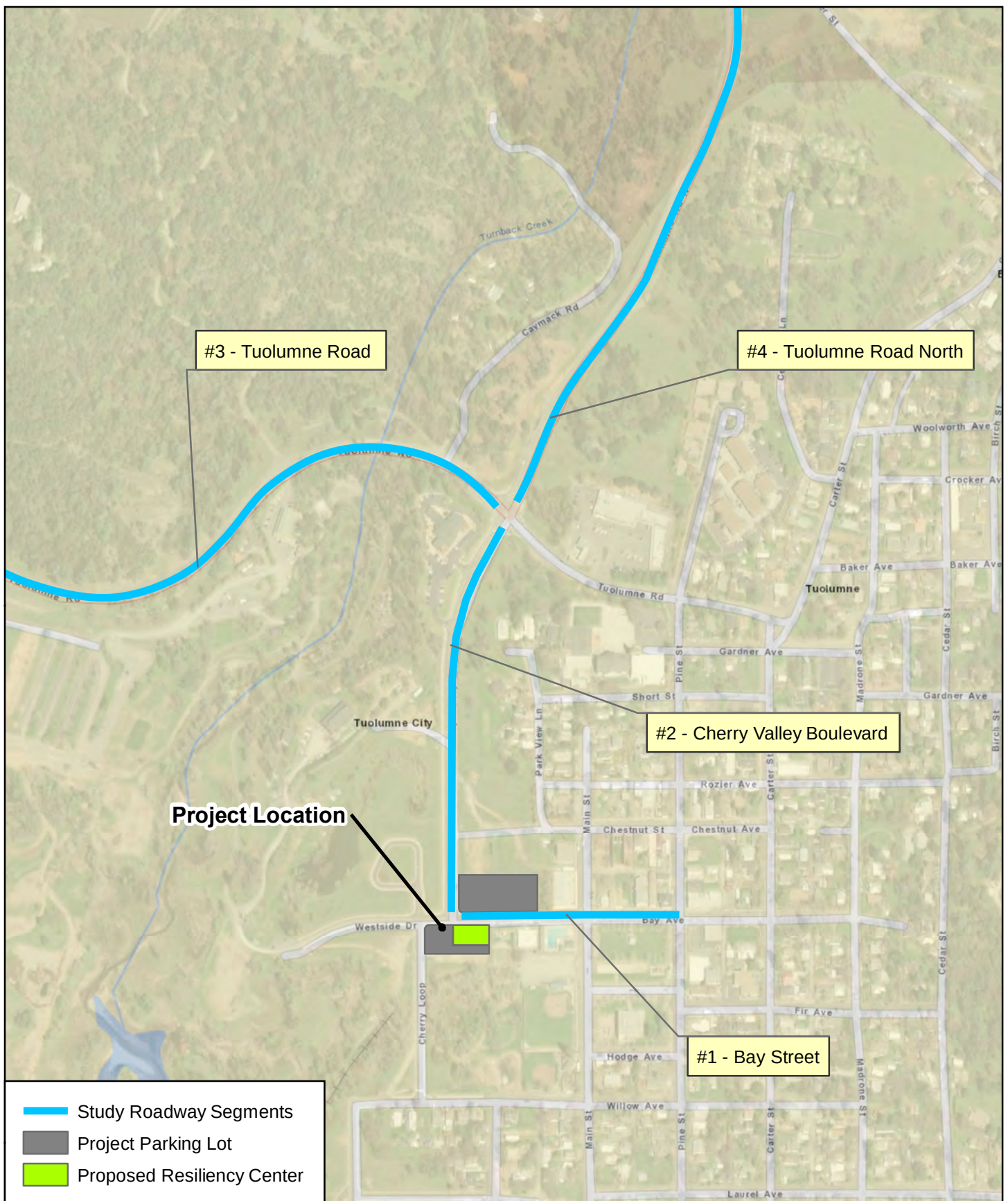
The Project study area extends along Bay Street and Cherry Valley Boulevard in proximity of the Project site, as well as Tuolumne Road from Wards Ferry Road (western limit) to SR 108 (eastern limit). Study facilities include the roadway segments discussed below.

I.2.1 Roadway Segments

Roadway segments were selected for analysis based on projected travel patterns of Project site trips, knowledge of the area, and engineering judgement. The list of study roadway segments was reviewed by County staff prior to preparation of the TIS. The following four (4) existing study roadway segments were analyzed in this TIS:

1. Bay Street between Cherry Valley Boulevard and Pine Street
2. Cherry Valley Boulevard between Bay Street and Tuolumne Road
3. Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard
4. Tuolumne Road between Cherry Valley Boulevard and SR 108

The locations of the above roadway segments are shown on **Figure 1**.



Project Location and Study Facilities
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019

Figure 1

I.3 ANALYSIS SCENARIOS

Four roadway segments were evaluated under weekday daily conditions for the following scenarios:

- **Existing Conditions:** Existing traffic volumes from counts.
- **Existing plus Project Conditions:** Existing traffic volumes plus traffic projected to be generated by the proposed Project.
- **Near-term No Project Conditions:** Analysis of near-term future year 2020 traffic conditions developed by applying a yearly growth rate, calculated from the Tuolumne County Regional Travel Demand Model (RTDM), to existing traffic volume counts.
- **Near-term plus Project Conditions:** “Near-term No Project” volumes plus traffic projected to be generated by the proposed Project.
- **Cumulative (long-term) No Project Conditions:** Analysis of long-term future year 2040 traffic conditions developed by applying a yearly growth rate, calculated from the Tuolumne County RTDM, to existing traffic volume counts.
- **Cumulative (long-term) plus Project Conditions:** “Cumulative (long-term) No Project” volumes plus traffic projected to be generated by the proposed Project.

I.4 ANALYSIS METHODS

All study roadways were classified as urban or rural, and all roadways were further classified as rolling or mountainous. Roadway segment LOS was calculated by comparing study roadway ADT volumes, obtained from recent traffic counts, to the corresponding TCTC Roadway ADT LOS thresholds for the roadway type contained in the *Tuolumne County General Plan and Regional Transportation Plan Update EIR Traffic Study* (Wood Rodgers, August 2015). The TCTC Roadway ADT LOS Lookup Table is shown in **Table 1**.

Intersection analysis was not included in this TIS. According to the *Guide of the Preparation of County of Tuolumne Traffic Impact Studies*, a full TIS is needed when a project generates over 50 peak hour trips assigned to a County roadway or a highway. Based on the trip generation performed for this Project (see Section 3.2.1 of this TIS for trip generation details), the Project would generate up to 28 peak hour trips, and therefore would not trigger the County requirement for a full TIS with intersection analysis.

Typical daily weekday analysis was performed for this TIS. It was determined that existing traffic volumes on study roadways remained generally consistent (within five percent of each other) on weekdays and weekends, and therefore weekday traffic counts were a reasonable approximation of weekend traffic counts for study roadway segments (see Section 2.5 of this TIS for additional discussion). It was also determined that *Institute of Transportation Engineers Trip Generation Manual, 10th Edition* based weekday trip generation rates were a reasonably conservative estimate of Project generated trips on both weekdays and weekends, consistent with County estimates of site usage (see Section 3.2.1 of this TIS for additional discussion). Therefore, the typical daily weekday analysis included in this TIS could also be considered a reasonable estimate of daily weekend operating conditions with and without the Project.

Table 1. TCTC Generalized Roadway ADT LOS Lookup Table

FHWA FC#	Roadway Type	Type #	Area Type	Maximum Two-way Average Daily Traffic (ADT) Volume-carrying Capacity for each LOS Designation				
				LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
4	Rural Arterial (4-lane) Divided	1	ROLLING	6,240	12,480	18,720	26,520	31,200
4	Rural Arterial (4-lane) Undivided	2		4,820	9,640	14,460	20,485	24,100
4	Rural Minor Arterial (4-lane)	3		6,080	12,160	18,240	25,840	30,400
4	Rural Minor Arterial (with left-turn Lane)	4		4,600	9,200	13,800	19,550	23,000
4	Rural Minor Arterial (2-lane)	5		3,120	6,240	9,360	13,260	15,600
5	Major Collector (34 ft. - 36 ft.)	6		3,420	6,840	10,260	14,535	17,100
5	Major/Minor Collector (23 ft. - 32 ft.)	7		2,900	5,800	8,700	12,325	14,500
5	Major/Minor Collector (20 ft. - 23 ft.)	8		2,590	5,180	7,770	11,008	12,950
5	Major/Minor Collector (18 ft. - 20 ft.)	9		2,300	4,600	6,900	9,775	11,500
5	Major/Minor Collector (Less than 18 ft.)	10		1,920	3,840	5,760	8,160	9,600
6	Local Road	11		1,920	3,840	5,760	8,160	9,600
4	Rural Arterial (4-lane) Divided	101	MOUNTAINOUS	5,810	11,610	17,410	24,670	29,020
4	Rural Arterial (4-lane) Undivided	102		4,490	8,970	13,450	19,060	22,420
4	Rural Minor Arterial (4-lane)	103		5,660	11,310	16,970	24,040	28,280
4	Rural Minor Arterial (with left-turn Lane)	104		4,280	8,560	12,840	18,190	21,390
4	Rural Minor Arterial (2-lane)	105		2,910	5,810	8,710	12,340	14,510
5	Major Collector (34 ft. - 36 ft.)	106		3,190	6,370	9,550	13,520	15,910
5	Major/Minor Collector (23 ft. - 32 ft.)	107		2,700	5,400	8,100	11,470	13,490
5	Major/Minor Collector (20 ft. - 23 ft.)	108		2,410	4,820	7,230	10,240	12,050
5	Major/Minor Collector (18 ft. - 20 ft.)	109		2,140	4,280	6,420	9,100	10,700
5	Major/Minor Collector (Less than 18 ft.)	110		1,790	3,580	5,360	7,590	8,930
6	Local Road	111		1,790	3,580	5,360	7,590	8,930
2	4-Lane Freeway	201	URBAN	28,000	43,200	61,600	74,400	80,000
2	3-Lane Freeway	202		10,100	20,200	30,300	42,925	50,500
2	2-Lane Freeway + Auxiliary Lanes	203		8,392	16,784	25,176	35,666	41,960
2	2-Lane Freeway	204		6,680	13,360	20,040	28,390	33,400
2	4-Lane Expressway	205		24,000	28,000	32,000	36,000	40,000
2	2-Lane Expressway	206		12,000	14,000	16,000	18,000	20,000
3	6-Lane Divided Arterial (with left-turn lane)	207		32,000	38,000	43,000	49,000	54,000
3	4-Lane Divided Arterial (with left-turn lane)	208		22,000	25,000	29,000	32,500	36,000
3	4-Lane Undivided Arterial (no left-turn lane)	209		18,000	21,000	24,000	27,000	30,000
4	2-Lane Principal/Minor Arterial (with left-turn lane)	210		2,900	7,700	14,300	20,100	31,300
4	2-Lane Principal/Minor Arterial (no left-turn lane)	211		2,900	7,200	11,900	16,100	24,200
5	2-Lane Major/Minor Collector (with left-turn lane)	212		3,400	6,900	11,600	15,800	29,400
5	2-Lane Major/Minor Collector (no left-turn lane)	213		2,700	5,600	9,200	12,800	23,500
6	2-Lane Local Street	214		2,300	4,900	8,400	11,400	21,200

Notes:

1. Values shown corresponding to LOS A through E are roadway ADT traffic volumes
2. Collector width is measured from the edge of pavement to the edge of pavement
3. Roadways with continuous grade steeper than 6% or above 4,000 ft. elevation should use mountainous terrain LOS thresholds
4. Site Specific LOS maybe necessary
5. Peak Hour LOS threshold is assumed to be 10% of the daily traffic volume unless site specific analysis shows a different peak hour to daily traffic ratio
6. Examples LOS A (0.20 of capacity), LOS B (0.21 to 0.40 of capacity), LOS C (0.41 to 0.60 of capacity), LOS D (0.61 to 0.85 of capacity), LOS E (0.86 to 0.92 of capacity)

All volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

I.5 LEVEL OF SERVICE STANDARDS AND SIGNIFICANT IMPACT CRITERIA

Consistent with the *2018 General Plan Update Appendix B: Tuolumne County General Plan and Regional Transportation Plan Update EIR Traffic Study* (Wood Rodgers, August 2015), the minimum LOS standard for Minor Collectors, Major Collectors, Rural Arterials and Urban Local Streets (County facilities) was assumed to be LOS “D”, unless an exception is made by the County. The minimum LOS standard for rural local roads and residential roads was assumed to be LOS “C”. The minimum peak hour LOS standard for all County intersections was assumed to be LOS “D”.

I.6 REPORT ORGANIZATION

The remainder of this report is divided into the following chapters:

- Chapter 2: Existing Conditions – Describes existing conditions and operations of the study area intersections, transit system, pedestrian facilities, and bicycle facilities.
- Chapter 3: Existing Plus Project Conditions – Describes the methods used to estimate and distribute Project generated traffic and the resulting study area operations.
- Chapter 4: Near-term No Project – Describes projected conditions and operations of study area facilities under Near-term No Project conditions.
- Chapter 5: Near-term plus Project – Describes projected conditions and operations of study area facilities under Near-term plus Project conditions.
- Chapter 6: Cumulative (long-term) No Project – Describes projected conditions and operations of study area facilities under Cumulative (long-term) No Project conditions.
- Chapter 7: Cumulative (long-term) plus Project – Describes projected conditions and operations of study area facilities under Cumulative (long-term) plus Project conditions.
- Chapter 8: Project Impacts and Mitigation Measures – Describes the projected impacts the Project will have on study area facilities (if any) and presents potential mitigations.
- Chapter 9: Site Access and Circulation – Describes site access, circulation, and Project Driveway sight distances for the Project Site.

2. EXISTING CONDITIONS

This chapter describes the existing roadway network, transit services, pedestrian facilities, and bicycle facilities within the study area. It also presents existing ADT at study roadway segments and existing study roadway segment LOS.

2.1 EXISTING ROADWAY NETWORK

This section provides descriptions of the study area roadways.

Bay Street is a two-lane local street that runs east-west between Cherry Valley Boulevard and Madrone Street. Bay Street forms a one-way stop-controlled T-intersection with Cherry Valley Boulevard. As Bay Street is a local street, the speed limit is assumed to be 25 miles per hour (mph).

Cherry Valley Boulevard is a two-lane minor collector that runs north-south between Bay Street and Tuolumne Road, where it becomes Tuolumne Road North. As Cherry Valley Boulevard is a minor collector, the speed limit is assumed to be 35 mph. Cherry Valley Boulevard forms a signalized intersection with Tuolumne Road.

Cherry Loop is a two-lane local street that runs north-south between Bay Street and Willow Avenue. As Cherry Loop is a local street, the speed limit is assumed to be 25 mph.

Tuolumne Road is a two-lane major collector that runs east-west between Mono Way and Carter Street. The posted speed limit on Tuolumne Road near the Cherry Valley Boulevard intersection is 25 mph. The speed limit increases to 45 mph west of Westside Road. Tuolumne Road forms a signalized intersection with Cherry Valley Boulevard.

Tuolumne Road North is a two-lane major collector roadway that runs north-south between SR 108 and Tuolumne Road, where it becomes Cherry Valley Boulevard. The posted speed limit on Tuolumne Road North is 35 mph.

2.2 PEDESTRIAN FACILITIES

Pedestrian sidewalks exist along the north and west frontage of the southern Project parcel. A pedestrian sidewalk also exists along the west side of the additional Project parking lot. There is no pedestrian sidewalk along the south-east Bay Street frontage of the additional Project parking lot. There are no pedestrian crossings at the Cherry Valley Boulevard / Bay Street intersection or the Cherry Loop / Bay Street intersection. Marked pedestrian crosswalks exist on all legs of the all-way stop-controlled Main Street / Bay street intersection and the signalized Cherry Valley Boulevard / Tuolumne Road intersection.

2.3 BICYCLE FACILITIES

The *Tuolumne County 2016 Regional Transportation Plan* (ICTC, January 2017) classifies bikeways as follows:

- Class I Bike Path – Provides a completely separate right of way designated for exclusive use of bicycles and pedestrians with cross-flows by motorists minimized.
- Class II Bike Lanes –Provides a restricted right-of-way through signs and pavement striping designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrian prohibited, but with vehicle cross-flows by pedestrian and motorists permitted. In California, the Manual on Uniform Traffic Control Devices (MUTCD) sign #R3-17 normally designates class II facilities.

Study area bicycle facilities have been identified using information from the *Tuolumne County 2016 Regional Transportation Plan*. No bike lanes were detected within or near the Project study area. Shoulders of 4 feet width were detected along Cherry Valley Boulevard. Shoulders of 4 feet width were detected at the south side of Bay Street, along Project site frontage, and the north side of Bay Street approximately 150 feet east of Cherry Valley Boulevard.

2.4 EXISTING TRANSIT SERVICE

Tuolumne County Transit provides bus service within the Project study area. Tuolumne County Transit provides general on demand, dial-a-ride service seven days a week in the Project study area. Bus Route 5 – Tuolumne/Sonora passes through Tuolumne Road, Carter Street, Bay Street, makes a loop around West Side Memorial Park, passes through Bay Street by Project site frontage, and exits the community of Tuolumne through Cherry Valley Boulevard to Tuolumne Road North. The closest Flag Stop area to the Project site is within 800 feet, located on Pine Street east of West Side Memorial Park. Another Flag Stop area is located approximately 1,300 feet north of the Project site, on Cherry Valley Boulevard at the Me Wuk Health Care Clinic. Flag Stops are indicated locations along an existing route that the bus can safely stop at if a potential passenger flags the bus down. Flag Stops have no scheduled stops. Flagging an approaching bus involves indicating early and clearly to the driver that one desires the bus to stop. Flag Stops are at the discretion of the bus driver, taking into consideration the safety of passengers on board. One scheduled bus stop is located within 1,700 feet of the Project site at Tuolumne Post Office on Carter Street. This location has six scheduled bus stops throughout the day.

2.5 EXISTING ROADWAY SEGMENT VOLUMES

Project study roadway segment traffic operations were evaluated for typical existing daily weekday conditions. Wood Rodgers conducted new 24 hour vehicular traffic counts at the following roadway segments on Tuesday October 16, 2018:

1. Bay Street between Cherry Valley Boulevard and Pine Street
2. Cherry Valley Boulevard between Bay Avenue and Tuolumne Road
3. Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard
4. Tuolumne Road North between Cherry Valley Boulevard and SR 108

24 hour weekend counts were also conducted on Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard on Saturday October 20, 2018. Weekend ADT on this segment was found to be within five percent of the existing weekday count. Therefore, traffic operations on the weekend were assumed to be similar to those during the week. **Figure 1** illustrates existing study roadway segments and **Figure 2** illustrates “Existing” conditions study roadway segment ADTs. Roadway segment raw count sheets are included in **Appendix B**.

2.6 EXISTING ROADWAY SEGMENT OPERATIONS

Table 2 presents existing study roadway segment traffic operations under “Existing” roadway ADT volumes.

As shown in **Table 2**, all study roadway segments are currently operating at acceptable level of service conditions (LOS “D” or better).

Table 2. “Existing” Conditions Roadway Segment Traffic Operations

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,530	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	1,581	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	8,498	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,134	B
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table						



"Existing" Traffic Volumes
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019

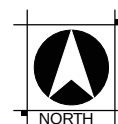


Figure 2

3. EXISTING PLUS PROJECT CONDITIONS

This chapter provides a description of the proposed Project, a discussion of the trip generation and distribution/assignment methods used to come up with “Project Only” volumes at study roadway segments, and an analysis of projected traffic operations due to the proposed Project.

3.1 PROJECT SITE DESCRIPTION

The proposed Project plans to develop a community resiliency center on two parcels totaling 1.7 acres. The building will be approximately 12,000 square feet. The area to be paved for parking will be approximately 65,000 square feet, with approximately 200 parking stalls.

The County provided the following estimates of anticipated usage of the Tuolumne Community Resiliency Center:

- Weekday Daytime Use (Monday – Thursday) 20 – 30 people per day
- Weekday Evening Use (Monday – Thursday) 20 – 60 people per day
- Weekend Use (Friday – Sunday) 40 – 200 people per day

The usage estimates above were based on the current schedule for an existing Community Center in Tuolumne.

3.2 PROJECT GENERATED TRIPS

3.2.1 Trip Generation

The following trip generation rates from the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition* were used to estimate Project generated trips:

Recreational Community Center – For the proposed community resiliency center, the Recreational Community Center (Code 495) trip generation rate is used. ITE Trip Generation describes the Recreational Community Center as: “...stand-alone public facility similar to and including YMCAs. These facilities often include classes and clubs for adults and children: a day care or nursery school; meeting rooms; swimming pools and whirlpools; saunas; tennis, racquetball, handball, basketball and volleyball courts; outdoor athletic fields/ courts; exercise classes; weightlifting and gymnastics equipment; locker rooms; and a restaurant or snack bar. Public access is typically allowed but a fee may be charged.”

ITE trip generation rates were used to estimate trips generated by the Project as they are generally accepted as an industry standard method of estimating traffic generation and they produced trips that were generally consistent with, or slightly more conservative than, the County’s estimate of Project usage included in Section 3.1. **Table 3** summarizes the trip generation rates used for the proposed Project and **Table 4** summarizes the trip generation volumes and reductions for the proposed Project.

According to the ITE trip generation rates, the Recreation Community Center land use type generates more trips on weekdays than on weekends. In order to remain conservative, it was assumed that the weekday trip generation rates could generally be used as a reasonable estimate of Project generated traffic on both weekdays and weekends.

Table 3. Project Trip Generation Rates

Land Use Category	Source	ITE Code	Rate Unit	Weekday Daily Trip Rate/Unit	Weekday AM Peak Hour Rate/Unit			Weekday PM Peak Hour Rate/Unit		
					Total	In%	Out%	Total	In%	Out%
Recreational Community Center	ITE	495	KSF ¹	28.82	1.76	66%	34%	2.31	47%	53%
Note: ¹ KSF – 1000 Square Foot Floor Area										

Table 4. Project Trip Generation Volumes

Land Use	Units	Quantity	Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Recreational Community Center	KSF ¹	12	346	22	15	7	28	13	15
Note: ¹ KSF – 1000 Square Foot Floor Area									

As illustrated in **Table 4**, the proposed Project is anticipated to generate a total of 346 daily trips, 22 AM peak hour (15 inbound, 7 outbound) trips, and 28 PM peak hour (13 inbound, 15 outbound) trips under typical “annual average” traffic demand conditions. ITE Trip Generation average rates were used in place of fitted curve equations to better capture the realistic trip generation of the small square footage being developed.

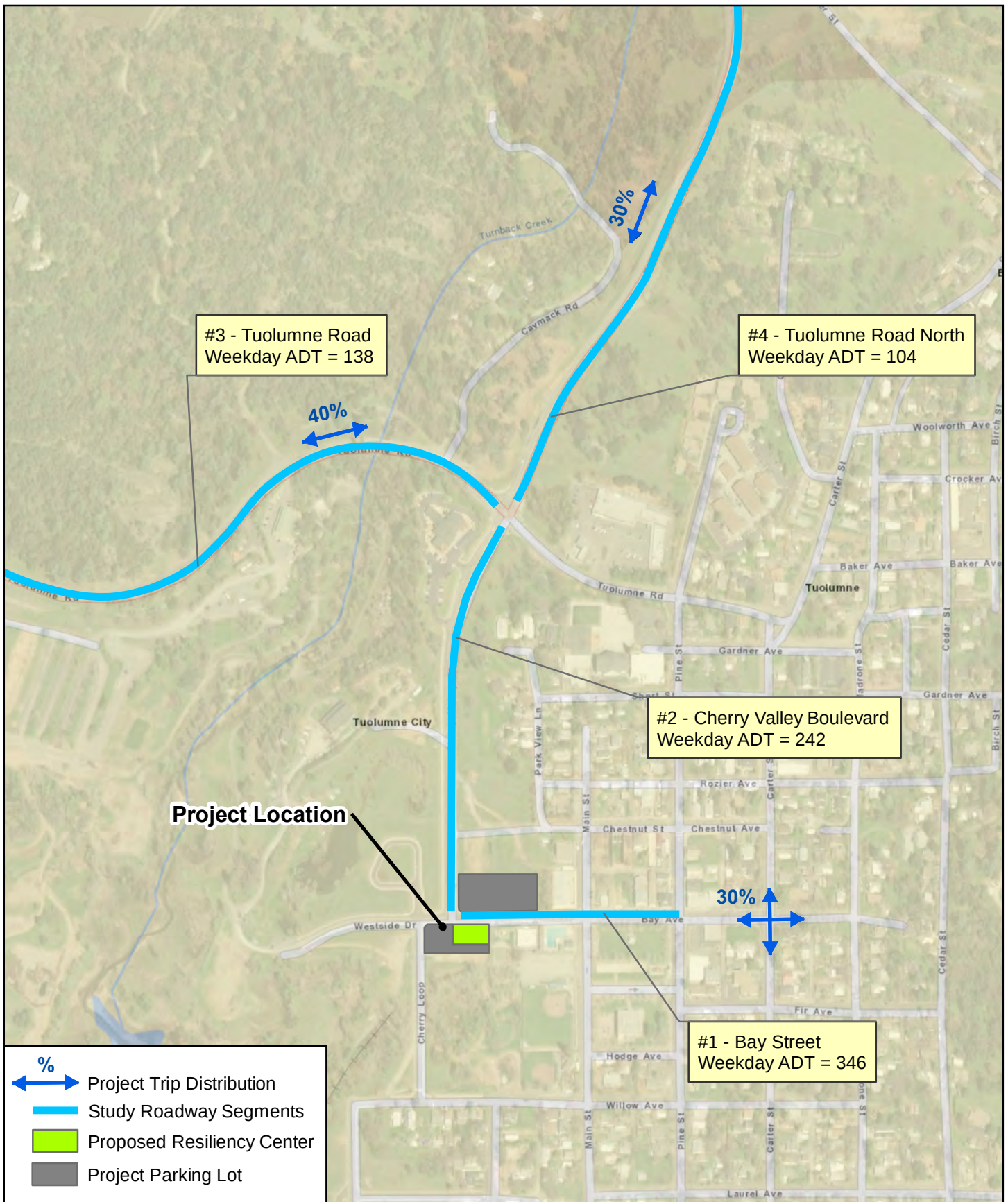
The 346 daily Project trips estimated using ITE trip generation rates, and shown in **Table 4** above, are generally consistent with the County’s estimate of Project usage on weekends, but slightly higher than the County’s estimate of Project usage on weekdays. However, as Project usage is only an estimate and could end up being higher than anticipated by the County, the 346 daily trips were considered a reasonably conservative estimate of weekday Project trip generation as well.

3.2.2 Project Trip Distribution and Assignment

The Project trip distribution was determined based on existing traffic volumes and travel patterns, knowledge of the area, and engineering judgement. Project trips were assigned to the study area network based on the Project trip distribution.

Figure 3 illustrates the estimated weekday daily Project directional trip distribution and assignment patterns projected to be generally applicable for the Project under existing conditions on an annualized average usage basis.

“Project Only” traffic volumes were added on top of “Existing” conditions traffic volumes at study roadway segments to create “Existing plus Project” conditions traffic volumes. **Figure 4** illustrates the estimated weekday daily “Existing plus Project” conditions traffic volumes at study roadway segments.



"Project Only" Trip Distribution and Assignment
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019

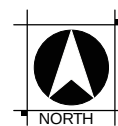
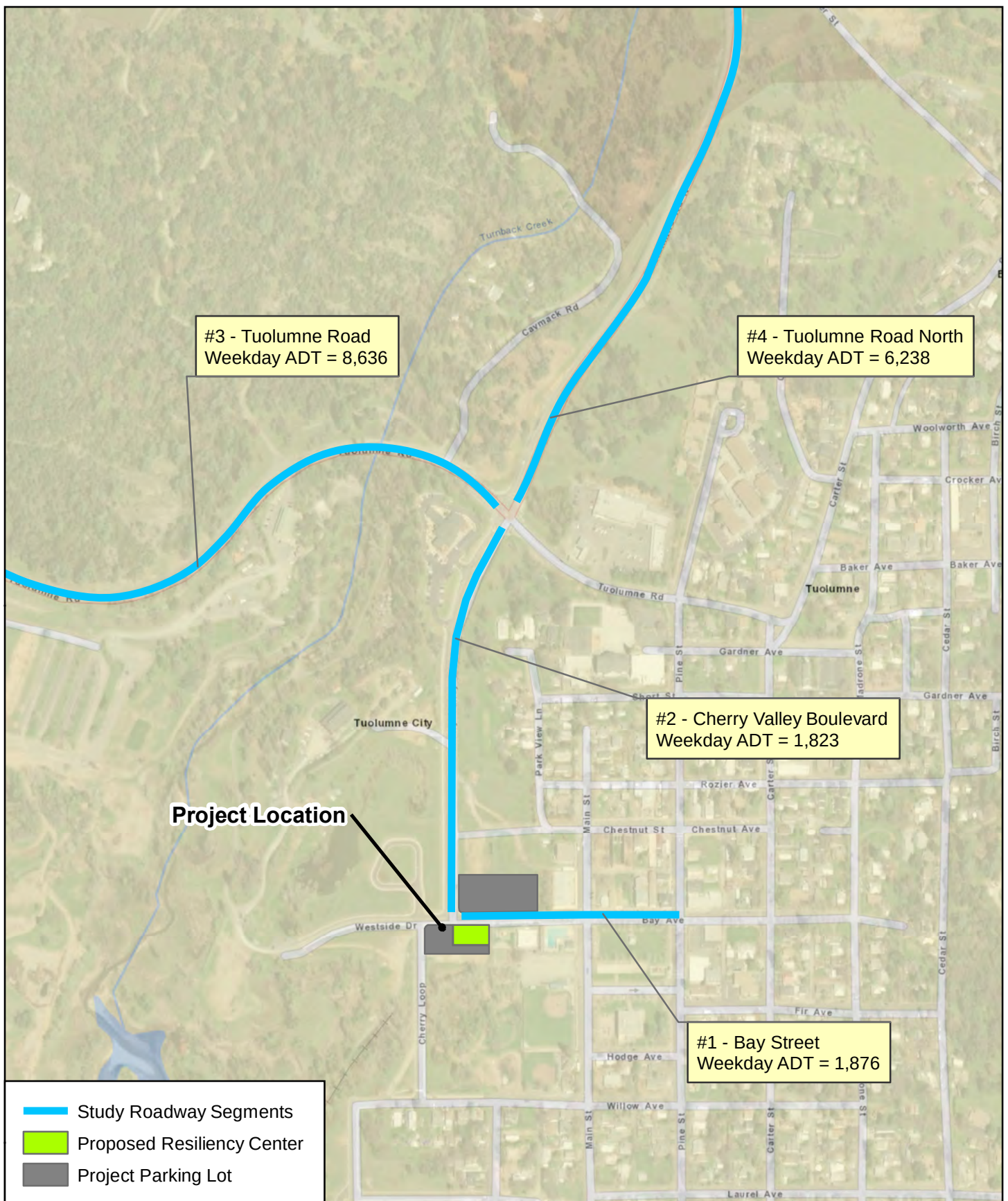


Figure 3



"Existing plus Project" Traffic Volumes
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019



Figure 4

3.3 “EXISTING PLUS PROJECT” ROADWAY SEGMENT OPERATIONS

“Existing plus Project” roadway operations were quantified under “Existing plus Project” traffic volumes (shown in **Figure 4**). **Table 5** illustrates the resulting “Existing plus Project” roadway segment LOS operations. **Table 5** also contains “Existing” conditions roadway segment ADT and LOS for comparison purposes.

Table 5. “Existing plus Project” Conditions Roadway Segments Traffic Operations

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	Existing Conditions		Existing Plus Project Conditions	
					ADT	LOS	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,530	A	1,876	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	1,581	A	1,823	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	8,498	C	8,636	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,134	B	6,238	B
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table								

As shown in **Table 5**, all study roadway segments are projected to operate at acceptable Level of Service (LOS “D” or better) under “Existing plus Project” weekday daily conditions.

4. NEAR-TERM NO PROJECT

This chapter provides a description of the “Near-term No Project” roadway segment operations and roadway segment ADT volumes. “Near-term No Project” roadway volumes were obtained by applying a straight-line yearly growth rate to the vehicular traffic counts. The yearly growth rate was determined by differencing the Tuolumne County RTDM vehicular traffic volume projections for year 2015 (base-year) and year 2040 (build-out year), and dividing by 25 years. Year 2020 was chosen to represent near-term conditions in this TIS.

4.1 ROADWAY SEGMENT OPERATIONS

“Near-term No Project” roadway segment operations were quantified under “Near-term No Project” traffic volumes (shown in **Figure 5**). **Table 6** illustrates the resulting “Near-term No Project” conditions roadway segment LOS operations.

Table 6. “Near-term No Project” Conditions Roadway Segments Traffic Operation

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,568	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	1,621	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	8,583	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,195	B
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table						

As shown in **Table 6**, all study roadway segments are projected to operate at acceptable Level of Service (LOS “D” or better) under “Near-term No Project” weekday daily conditions.



"Near-term No Project" Traffic Volumes
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019

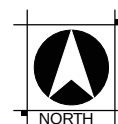


Figure 5

5. NEAR-TERM PLUS PROJECT

“Project Only” daily traffic volumes were added on top of “Near-term No Project” conditions traffic volumes to generate “Near-term plus Project” conditions traffic volumes. This chapter provides a description of the “Near-term plus Project” roadway segment operations and roadway segment ADT volumes.

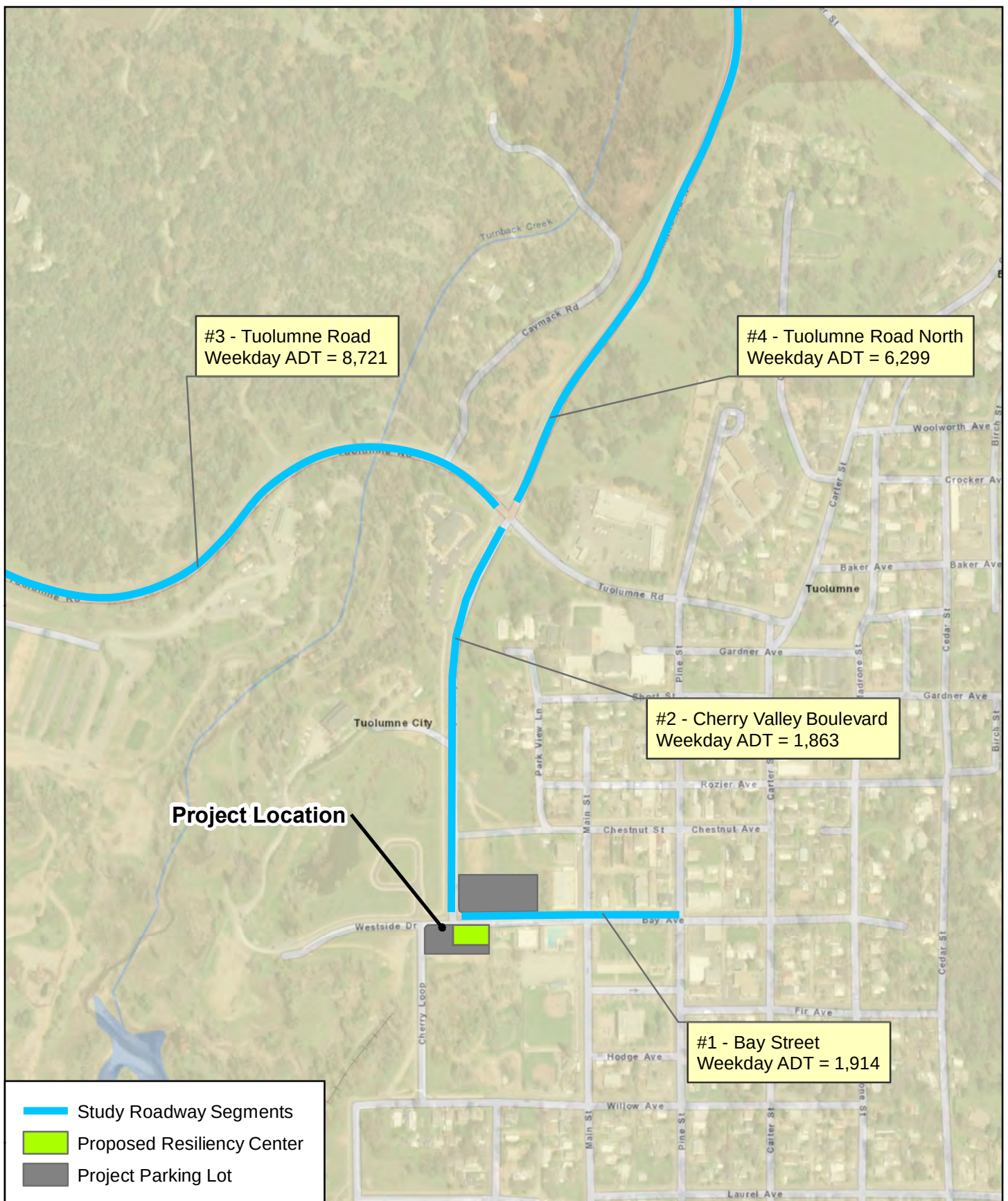
5.1 ROADWAY SEGMENT OPERATIONS

“Near-term plus Project” roadway segment operations were quantified under “Near-term plus Project” traffic volumes (shown in **Figure 6**). **Table 7** illustrates the resulting “Near-term plus Project” conditions roadway segments LOS operations. **Table 7** also contains “Near-term No Project” conditions roadway segment ADT and LOS for comparison purposes.

Table 7. “Near-term plus Project” Conditions Roadway Segment Traffic Operations

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	Near-term No Project Conditions		Near-term plus Project Conditions	
					ADT	LOS	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,568	A	1,914	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	1,621	A	1,863	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	8,583	C	8,721	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,195	B	6,299	B
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table								

As shown in **Table 7**, all study roadway segments are projected to operate at acceptable Level of Service (LOS “D” or better) under “Near-term plus Project” weekday daily conditions.



"Near-term plus Project" Traffic Volumes
 Tuolumne Community Resiliency Center
 Tuolumne County, CA
 March 2019

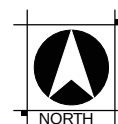


Figure 6

6. CUMULATIVE (LONG-TERM) NO PROJECT

This chapter provides a description of “Cumulative (long-term) No Project” roadway segment operations and roadway segment ADT volumes. “Cumulative (long-term) No Project” roadway volumes were obtained by applying a straight-line yearly growth rate to the vehicular traffic counts. The yearly growth rate was determined by differencing the Tuolumne County RTDM vehicular traffic volume projections for year 2015 (base-year) and year 2040 (build-out year), and dividing by 25 years. Year 2040 was chosen to represent long-term conditions in this TIS.

6.1 ROADWAY SEGMENTS OPERATIONS

“Cumulative (long-term) No Project” roadway segment operations were quantified under “Cumulative (long-term) No Project” traffic volumes (shown in **Figure 7**). **Table 8** illustrates the resulting “Cumulative (long-term) No Project” conditions roadway segment LOS operations.

Table 8. “Cumulative (long-term) No Project” Conditions Roadway Segment Traffic Operations

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,951	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	2,016	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	9,433	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,809	B
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table						

As shown in **Table 8**, all study roadway segments are projected to operate at acceptable Level of Service (LOS “D” or better) under “Cumulative (long-term) No Project” weekday daily conditions.

7. CUMULATIVE (LONG-TERM) PLUS PROJECT

“Project Only” daily traffic volumes were added on top of “Cumulative (long-term) No Project” conditions traffic volumes to generate “Cumulative (long-term) plus Project” conditions traffic volumes. This chapter provides a description of cumulative long-term plus project roadway segment operations and roadway segment ADT volumes.

7.1 ROADWAY SEGMENTS OPERATIONS

“Cumulative (long-term) plus Project” roadway segment operations were quantified under “Cumulative (long-term) plus Project” traffic volumes (shown in **Figure 8**). **Table 9** illustrates the resulting “Cumulative (long-term) plus Project” conditions roadway segment LOS operations.

Table 9 also contain “Cumulative (long-term) No Project” conditions roadway segment ADT and LOS for comparison purposes.

Table 9. “Cumulative (long-term) plus Project” Conditions Roadway Segment Traffic Operations

#	Roadway Segment	Type # ¹	Roadway Capacity	Min. LOS Std.	Cumulative (long-term) No Project Conditions		Cumulative (long-term) plus Project Conditions	
					ADT	LOS	ADT	LOS
1	Bay Street between Cherry Valley Boulevard and Pine Street	214	21,200	D	1,951	A	2,297	A
2	Cherry Valley Boulevard between Bay Street and Tuolumne Road	212	29,400	D	2,016	A	2,258	A
3	Tuolumne Road between Wards Ferry Road and Cherry Valley Boulevard	6	17,100	D	9,433	C	9,571	C
4	Tuolumne Road between Cherry Valley Boulevard and SR 108	6	17,100	D	6,809	B	6,913	C
Note: ¹ Type # from Table 1 . TCTC Generalized Roadway ADT LOS Lookup Table								

As shown in **Table 9**, all study roadway segments are projected to operate at acceptable Level of Service (LOS “D” or better) under “Cumulative (long-term) plus Project” weekday daily conditions.



8. IMPACTS AND MITIGATION MEASURES

This chapter of the TIS evaluates the study roadway segment operations results presented in **Table 5** (“Existing plus Project” conditions), **Table 7** (“Near-term plus Project” conditions), and **Table 9** (“Cumulative (long-term) plus Project” conditions) against the LOS impact criteria summarized in Section 1.5 of this report.

8.1 ROADWAY SEGMENTS

All study roadway segments are projected to operate at acceptable LOS under all study conditions. Therefore, the Project was found to have “less than significant” impacts on all four (4) study roadway segments under typical daily weekday conditions. No mitigation measures are recommended.

8.2 VEHICLE MILES TRAVELED

Based on the *General Plan and Regional Transportation Plan Update EIR Traffic Study* (Wood Rodgers Inc., August 2015), the current average trip length in Tuolumne County is 10.3 miles. This would provide a simple vehicle miles traveled (VMT) estimate of approximately 3,564 daily vehicle-miles per site (ADT * average trip length).

An overall increase in VMT due to the Project may be anticipated. The expected daily usage of the Project site may lessen the VMT of Tuolumne residents who would otherwise need to drive further out of town to use a similar facility. However, the presence of the new resiliency center may draw new patrons, either from Tuolumne or from more distant rural communities who would not be willing to make the trip to a similar facility further away. Overall, it may be expected that the development of the Project would increase VMT in the region by a relatively small amount.

8.3 BICYCLE, PEDESTRIAN AND TRANSIT FACILITIES

Bike users will have to share travel way and/or shoulder space due to lack of striped bicycle lanes along Project site frontage.

Project visitors can use existing sidewalks along the Project site frontage. It is recommended to construct a pedestrian sidewalk along the south-east side of the additional Project parking lot frontage along the north side of Bay Street. It is also recommended to construct pedestrian crosswalks between the additional Project parking lot (northern parcel) and the Project building (southern Parcel), and at the Cherry Loop / Bay Street intersection.

Current Tuolumne County transit passes through the Project site frontage and provides connection from Tuolumne to Sonora. The Project is not projected to generate enough transit trips to exceed current transit route capacity. No mitigation measures are recommended.

9. SITE ACCESS AND CIRCULATION

This chapter includes discussion of Project parking, internal circulation, and sight distance at Project Driveways.

9.1 PROJECT PARKING

The Project is programmed to include a total of 200 parking spaces. As these 200 spaces would be greater than 50 percent of total daily Project trips, proposed parking is projected to be adequate.

9.2 PROJECT DRIVEWAYS AND INTERNAL CIRCULATION

Access to the Project site is currently proposed to occur at the following driveway locations:

- Cherry Loop Driveway: A two-lane access driveway that would extend east from Cherry Loop to provide access to the southern parcel. This driveway is proposed to be located approximately 175 feet south of Bay Street.
- Bay Street Driveway: A two-lane access driveway that would extend north from Bay Street to provide access to the northern parcel. This driveway is proposed to be located approximately 260 feet east of Cherry Valley Boulevard.
- Cherry Valley Boulevard Driveway: A two-lane access driveway that would extend east from Cherry Valley Boulevard to provide access to the northern parcel. This driveway is proposed to be located approximately 200 feet north of Bay Street.

The proposed driveways and internal parking isles should be designed to accommodate access for a County fire truck and other emergency vehicles. Each proposed parking lot should provide adequate space for emergency vehicles to turn around on site. All Project driveways are recommended to be one-way stop controlled. As the proposed Project will not generate a large amount of traffic, it is assumed the proposed internal parking isles can accommodate two-way traffic and can be yield controlled.

9.3 SIGHT DISTANCE AT PROJECT DRIVEWAYS AND DISTANCE BETWEEN APPROACHES

Driveway sight distances for the Project were analyzed against sight distance requirements for commercial roads/driveways contained in the *Tuolumne County Community Resources Agency Roads Division Encroachment Permit Information Packet* (Tuolumne County, 2014). The distances between the proposed Project driveways and the nearest approaches were also analyzed against the minimum recommended distances between a commercial approach and any other approach contained in the *County Encroachment Permit Information Packet*. **Table 10** shows the required and actual sight distances, as well as the required and actual distances between approaches, for all Project driveways. Required minimum intersection sight distance triangles at the three Project driveway locations are shown in **Appendix C**.

As shown in **Table 10**, all proposed Project driveways are projected to meet the County's sight distance and distance between approaches requirements. Note that the Cherry Valley Boulevard Driveway is located approximately 200 feet north of the Cherry Valley Boulevard / Bay Street "T" intersection (centerline to centerline), which is a shorter distance than the 275 feet of sight distance typically required by County guidelines on a road with a speed limit of 25 mph. However, any

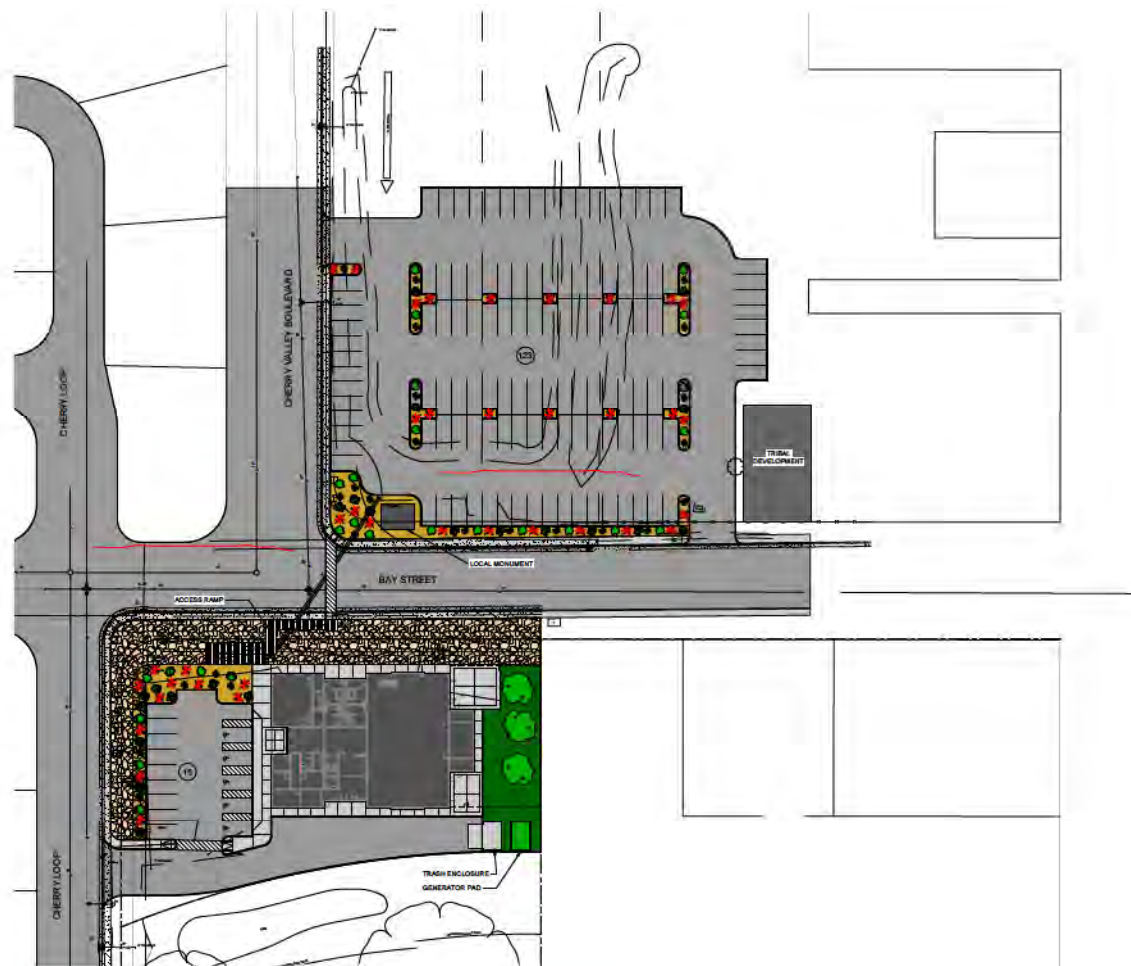
northbound vehicles approaching the proposed Cherry Valley Boulevard Driveway would generally not be traveling at the full 85th percentile speed of the road as they would be turning onto Cherry Valley Boulevard from Bay Street and traveling at a lower speed (10-15 mph) to complete the turn. Assuming a vehicle turning onto Cherry Valley Boulevard from Bay Street is traveling approximately 15 mph, it can be estimated (via interpolation of County required sight distances) that the required sight distance for vehicles exiting the Cherry Valley Boulevard Driveway to view oncoming northbound vehicles would be approximately 165 feet.

Table 10. Sight Distance at Project Driveways and Distance between Approaches

Project Driveway	Speed Limit (mph) ¹	Origin of Oncoming Traffic	Required Minimum Sight Distance (ft) ²	Actual Sight Distance (ft) ³	Required Minimum Distance between Approaches (ft) ⁴	Actual Distance to Nearest Approach (ft) ⁵
Cherry Loop Driveway	25	Northbound Cherry Loop	275	275+	100	500
	25	Southbound Cherry Loop	275	275+	100	175
Bay Street Driveway	25	Westbound Bay Street	275	275+	100	260
	25	Eastbound Bay Street	275	275+	115	260
Cherry Valley Boulevard Driveway	15	Northbound Cherry Valley Boulevard	165 ⁶	225	175	200
	25	Southbound Cherry Valley Boulevard	275	275+	175	500
<i>Notes:</i> ¹Speed Limit of the cross street the driveway will be located on. ²Tuolumne County Community Resources Agency Roads Division Encroachment Permit Information Packet (Tuolumne County, 2014). ³Actual Sight Distance measured from aerial of Project site and Project site plan. ⁴Tuolumne County Community Resources Agency Roads Division Encroachment Permit Information Packet (Tuolumne County, 2014). Measured from centerline to centerline. ⁵Actual Distance to Nearest Approach measured from aerial of Project site and Project site plan (centerline to centerline). ⁶165 feet was calculated using interpolation of County required sight distance values. It was assumed northbound vehicles on Cherry Valley Boulevard approaching the driveway would be traveling approximately 15 miles per hour when turning from Bay Street.						

Appendix A

Project Site Plan



TUOLUMNE CRC SITE PLAN

Tuolumne County Community Resilience Center (CRC) FEBRUARY 25, 2019

Appendix B

Raw Count Sheets

VOLUME

Bay Ave Bet. Cherry Valley Blvd & Pine St

Day: Tuesday

Date: 10/16/2018

City: Tuolumne

Project #: CA18_7368_001

DAILY TOTALS					NB	SB	EB					WB	Total		
					0	0						750			780
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00			2	1	3		12:00			9	11	20			
00:15			0	0	0		12:15			14	12	26			
00:30			0	0	0		12:30			8	5	13			
00:45			1	3	1	2	12:45			11	42	10	38	21	80
01:00			1		2	3	13:00			9	7	16			
01:15			1		1	2	13:15			10	9	19			
01:30			0		1	1	13:30			9	15	24			
01:45			1	3	0	4	13:45			12	40	14	45	26	85
02:00			1		0	1	14:00			8	8	16			
02:15			0		1	1	14:15			14	9	23			
02:30			1		0	1	14:30			16	18	34			
02:45			0	2	1	2	14:45			19	57	10	45	29	102
03:00			0		0	0	15:00			12	14	26			
03:15			1		1	2	15:15			11	13	24			
03:30			0		3	3	15:30			16	14	30			
03:45			1	2	0	4	15:45			16	55	13	54	29	109
04:00			0		0	0	16:00			20	11	31			
04:15			1		1	2	16:15			19	20	39			
04:30			1		2	3	16:30			19	16	35			
04:45			0	2	3	6	16:45			16	74	10	57	26	131
05:00			0		3	3	17:00			33	19	52			
05:15			1		4	5	17:15			30	14	44			
05:30			1		4	5	17:30			21	14	35			
05:45			3	5	4	15	17:45			23	107	8	55	31	162
06:00			0		7	7	18:00			10	11	21			
06:15			4		8	12	18:15			20	15	35			
06:30			3		9	12	18:30			17	28	45			
06:45			3	10	16	40	18:45			13	60	17	71	30	131
07:00			4		17	21	19:00			15	10	25			
07:15			6		12	18	19:15			9	10	19			
07:30			10		27	37	19:30			5	2	7			
07:45			26	46	22	78	19:45			7	36	6	28	13	64
08:00			12		14	26	20:00			6	6	12			
08:15			9		15	24	20:15			6	5	11			
08:30			7		11	18	20:30			9	8	17			
08:45			6	34	8	48	20:45			4	25	3	22	7	47
09:00			9		9	18	21:00			8	4	12			
09:15			9		14	23	21:15			6	4	10			
09:30			7		10	17	21:30			5	4	9			
09:45			6	31	12	45	21:45			5	24	5	17	10	41
10:00			9		7	16	22:00			5	2	7			
10:15			10		13	23	22:15			2	2	4			
10:30			5		19	24	22:30			7	3	10			
10:45			6	30	13	52	22:45			3	17	1	8	4	25
11:00			10		9	19	23:00			2	1	3			
11:15			9		13	22	23:15			0	0	0			
11:30			10		9	19	23:30			1	0	1			
11:45			12	41	11	42	23:45			1	4	1	2	2	6
TOTALS	209					338	547	TOTALS	541					442	983
SPLIT %	38.2%					61.8%	35.8%	SPLIT %	55.0%					45.0%	64.2%

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						750	780						1,530
AM Peak Hour			07:30	07:00	07:30		PM Peak Hour			17:00	18:00	17:00							
AM Pk Volume			57	78	135		PM Pk Volume			107	71	162							
Pk Hr Factor			0.548	0.722	0.703		Pk Hr Factor			0.811	0.634	0.779							
7 - 9 Volume	0	0	80	126	206		4 - 6 Volume	0	0	181	112	293							
7 - 9 Peak Hour			07:30	07:00	07:30		4 - 6 Peak Hour			17:00	16:15	17:00							
7 - 9 Pk Volume	0	0	57	78	135		4 - 6 Pk Volume	0	0	107	65	162							
Pk Hr Factor	0.000	0.000	0.548	0.722	0.703		Pk Hr Factor	0.000	0.000	0.811	0.813	0.779							

VOLUME

Cherry Valley Blvd Bet. Bay Ave & Tuolumne Rd

Day: Tuesday
Date: 10/16/2018City: Tuolumne
Project #: CA18_7368_002

DAILY TOTALS					NB	SB						EB	WB	Total	
					790	791						0	0		
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00	2	4			6		12:00	10	12			22			
00:15	0	0			0		12:15	13	13			26			
00:30	1	1			2		12:30	6	9			15			
00:45	1	4	1	6	2	10	12:45	8	37	14	48	22	85		
01:00	2	1			3		13:00	6	8			14			
01:15	1	2			3		13:15	11	14			25			
01:30	1	0			1		13:30	14	9			23			
01:45	0	4	1	4	1	8	13:45	14	45	10	41	24	86		
02:00	0	1			1		14:00	9	9			18			
02:15	2	0			2		14:15	8	15			23			
02:30	0	1			1		14:30	19	15			34			
02:45	1	3	0	2	1	5	14:45	10	46	23	62	33	108		
03:00	0	0			0		15:00	14	11			25			
03:15	1	1			2		15:15	14	10			24			
03:30	3	0			3		15:30	14	18			32			
03:45	1	5	2	3	3	8	15:45	13	55	15	54	28	109		
04:00	0	0			0		16:00	11	20			31			
04:15	1	1			2		16:15	20	17			37			
04:30	3	2			5		16:30	15	19			34			
04:45	3	7	0	3	3	10	16:45	11	57	20	76	31	133		
05:00	3	0			3		17:00	19	30			49			
05:15	3	0			3		17:15	11	32			43			
05:30	4	1			5		17:30	16	20			36			
05:45	4	14	3	4	7	18	17:45	8	54	22	104	30	158		
06:00	7	0			7		18:00	12	10			22			
06:15	8	4			12		18:15	14	23			37			
06:30	9	3			12		18:30	29	15			44			
06:45	14	38	5	12	19	50	18:45	17	72	11	59	28	131		
07:00	17	6			23		19:00	10	15			25			
07:15	12	7			19		19:15	10	9			19			
07:30	29	11			40		19:30	2	5			7			
07:45	21	79	28	52	49	131	19:45	6	28	8	37	14	65		
08:00	15	14			29		20:00	6	5			11			
08:15	15	11			26		20:15	5	6			11			
08:30	10	7			17		20:30	8	9			17			
08:45	9	49	8	40	17	89	20:45	4	23	5	25	9	48		
09:00	9	12			21		21:00	5	8			13			
09:15	15	9			24		21:15	3	5			8			
09:30	13	10			23		21:30	5	5			10			
09:45	11	48	6	37	17	85	21:45	5	18	6	24	11	42		
10:00	4	10			14		22:00	3	5			8			
10:15	13	10			23		22:15	2	2			4			
10:30	18	6			24		22:30	3	7			10			
10:45	13	48	3	29	16	77	22:45	1	9	3	17	4	26		
11:00	8	12			20		23:00	1	2			3			
11:15	15	12			27		23:15	0	0			0			
11:30	10	11			21		23:30	0	1			1			
11:45	12	45	13	48	25	93	23:45	1	2	1	4	2	6		
TOTALS	344	240			584		TOTALS	446	551			997			
SPLIT %	58.9%	41.1%			36.9%		SPLIT %	44.7%	55.3%			63.1%			

DAILY TOTALS				NB	SB	EB				WB	Total	
				790	791					0		
AM Peak Hour	07:30	07:30			07:30		PM Peak Hour	18:00	17:00			16:45
AM Pk Volume	80	64			144		PM Pk Volume	72	104			159
Pk Hr Factor	0.690	0.571			0.735		Pk Hr Factor	0.621	0.813			0.811
7 - 9 Volume	128	92	0	0	220		4 - 6 Volume	111	180	0	0	291
7 - 9 Peak Hour	07:30	07:30			07:30		4 - 6 Peak Hour	16:15	17:00			16:45
7 - 9 Pk Volume	80	64	0	0	144		4 - 6 Pk Volume	65	104	0	0	159
Pk Hr Factor	0.690	0.571	0.000	0.000	0.735		Pk Hr Factor	0.813	0.813	0.000	0.000	0.811

VOLUME

Tuolumne Rd W/O Cherry Valley Blvd

Day: Tuesday
Date: 10/16/2018City: Tuolumne
Project #: CA18_7368_003

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						4,286	4,212						8,498
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
00:00			6	14	20		12:00			71	57	128							
00:15			8	15	23		12:15			76	67	143							
00:30			6	14	20		12:30			51	40	91							
00:45			2	22	13	56	12:45			77	275	38	202	115	477				
01:00			3	13	16		13:00			62	48	110							
01:15			9	15	24		13:15			67	67	134							
01:30			7	6	13		13:30			76	57	133							
01:45			3	22	13	47	13:45			83	288	60	232	143	520				
02:00			10	7	17		14:00			84	78	162							
02:15			8	6	14		14:15			109	68	177							
02:30			4	10	14		14:30			81	72	153							
02:45			5	27	8	31	14:45			95	369	72	290	167	659				
03:00			8	8	16		15:00			83	106	189							
03:15			7	8	15		15:15			83	98	181							
03:30			6	12	18		15:30			77	103	180							
03:45			3	24	4	32	15:45			86	329	70	377	156	706				
04:00			6	14	20		16:00			96	74	170							
04:15			9	14	23		16:15			105	100	205							
04:30			5	7	12		16:30			110	84	194							
04:45			8	28	13	48	16:45			91	402	88	346	179	748				
05:00			10	16	26		17:00			91	91	182							
05:15			9	20	29		17:15			93	79	172							
05:30			18	21	39		17:30			95	67	162							
05:45			20	57	24	81	17:45			68	347	44	281	112	628				
06:00			6	34	40		18:00			78	53	131							
06:15			25	45	70		18:15			86	61	147							
06:30			34	45	79		18:30			45	57	102							
06:45			44	109	48	172	18:45			74	283	48	219	122	502				
07:00			29	58	87		19:00			73	32	105							
07:15			47	72	119		19:15			67	43	110							
07:30			83	127	210		19:30			47	27	74							
07:45			122	281	126	383	19:45			41	228	16	118	57	346				
08:00			84	83	167		20:00			49	29	78							
08:15			50	67	117		20:15			42	17	59							
08:30			46	54	100		20:30			36	38	74							
08:45			55	235	45	249	20:45			32	159	48	132	80	291				
09:00			39	43	82		21:00			23	35	58							
09:15			42	51	93		21:15			33	27	60							
09:30			48	52	100		21:30			25	21	46							
09:45			43	172	52	198	21:45			23	104	32	115	55	219				
10:00			46	60	106		22:00			22	24	46							
10:15			32	55	87		22:15			26	31	57							
10:30			51	48	99		22:30			9	20	29							
10:45			53	182	52	215	22:45			17	74	28	103	45	177				
11:00			47	39	86		23:00			15	36	51							
11:15			57	50	107		23:15			11	19	30							
11:30			54	48	102		23:30			9	12	21							
11:45			61	219	59	196	23:45			15	50	22	89	37	139				
TOTALS			1378	1708	3086		TOTALS			2908	2504	5412							
SPLIT %			44.7%	55.3%	36.3%		SPLIT %			53.7%	46.3%	63.7%							

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						4,286	4,212						8,498
AM Peak Hour			07:30	07:15	07:15		PM Peak Hour			16:00	14:45	16:15							
AM Pk Volume			339	408	744		PM Pk Volume			402	379	760							
Pk Hr Factor			0.695	0.803	0.750		Pk Hr Factor			0.914	0.894	0.927							
7 - 9 Volume	0	0	516	632	1148		4 - 6 Volume	0	0	749	627	1376							
7 - 9 Peak Hour			07:30	07:15	07:15		4 - 6 Peak Hour			16:00	16:15	16:15							
7 - 9 Pk Volume	0	0	339	408	744		4 - 6 Pk Volume	0	0	402	363	760							
Pk Hr Factor	0.000	0.000	0.695	0.803	0.750		Pk Hr Factor	0.000	0.000	0.914	0.908	0.927							

VOLUME

Tuolumne Rd W/O Cherry Valley Blvd

Day: Saturday
Date: 10/20/2018City: Tuolumne
Project #: CA18_7368_003

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						4,462	4,327						8,789
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
00:00			15	43	58		12:00			74	54	128							
00:15			12	33	45		12:15			48	59	107							
00:30			10	37	47		12:30			60	53	113							
00:45			10	47	29	142	12:45			63	245	54	220	117	465				
01:00			8	32	40		13:00			70	64	134							
01:15			8	34	42		13:15			68	71	139							
01:30			6	38	44		13:30			77	61	138							
01:45			8	30	38	134	13:45			49	264	75	271	124	535				
02:00			7	33	40		14:00			77	78	155							
02:15			11	27	38		14:15			87	87	174							
02:30			3	32	35		14:30			75	61	136							
02:45			4	25	18	110	14:45			65	304	55	281	120	585				
03:00			5	14	19		15:00			87	60	147							
03:15			6	18	24		15:15			78	70	148							
03:30			5	16	21		15:30			73	65	138							
03:45			6	22	15	63	15:45			81	319	56	251	137	570				
04:00			2	16	18		16:00			80	48	128							
04:15			6	14	20		16:15			99	56	155							
04:30			7	15	22		16:30			74	65	139							
04:45			8	23	9	54	16:45			92	345	50	219	142	564				
05:00			13	12	25		17:00			82	64	146							
05:15			13	16	29		17:15			95	56	151							
05:30			11	8	19		17:30			87	56	143							
05:45			20	57	10	46	17:45			82	346	60	236	142	582				
06:00			14	14	28		18:00			79	69	148							
06:15			14	32	46		18:15			98	64	162							
06:30			31	33	64		18:30			116	60	176							
06:45			18	77	17	96	18:45			75	368	53	246	128	614				
07:00			30	28	58		19:00			69	39	108							
07:15			19	32	51		19:15			67	37	104							
07:30			34	28	62		19:30			80	38	118							
07:45			29	112	34	122	19:45			64	280	39	153	103	433				
08:00			33	39	72		20:00			82	37	119							
08:15			44	41	85		20:15			72	48	120							
08:30			24	61	85		20:30			57	56	113							
08:45			62	163	44	185	20:45			54	265	43	184	97	449				
09:00			46	42	88		21:00			57	60	117							
09:15			47	43	90		21:15			45	52	97							
09:30			59	59	118		21:30			43	65	108							
09:45			61	213	49	193	21:45			56	201	48	225	104	426				
10:00			55	52	107		22:00			51	53	104							
10:15			54	41	95		22:15			18	66	84							
10:30			69	55	124		22:30			38	64	102							
10:45			76	254	70	218	22:45			30	137	53	236	83	373				
11:00			78	72	150		23:00			23	51	74							
11:15			64	73	137		23:15			19	61	80							
11:30			72	56	128		23:30			19	39	58							
11:45			72	286	43	244	23:45			18	79	47	198	65	277				
TOTALS			1309	1607	2916		TOTALS			3153	2720	5873							
SPLIT %			44.9%	55.1%	33.2%		SPLIT %			53.7%	46.3%	66.8%							

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						4,462	4,327						8,789
AM Peak Hour			10:45	10:45	10:45		PM Peak Hour			17:45	13:30	17:45							
AM Pk Volume			290	271	561		PM Pk Volume			375	301	628							
Pk Hr Factor			0.929	0.928	0.935		Pk Hr Factor			0.808	0.865	0.892							
7 - 9 Volume	0	0	275	307	582		4 - 6 Volume	0	0	691	455	1146							
7 - 9 Peak Hour			08:00	08:00	08:00		4 - 6 Peak Hour			16:45	17:00	16:15							
7 - 9 Pk Volume	0	0	163	185	348		4 - 6 Pk Volume	0	0	356	236	582							
Pk Hr Factor	0.000	0.000	0.657	0.758	0.821		Pk Hr Factor	0.000	0.000	0.937	0.922	0.939							

VOLUME

Tuolumne Rd N/O Cherry Valley Blvd

Day: Tuesday
Date: 10/16/2018City: Tuolumne
Project #: CA18_7368_004

DAILY TOTALS					NB	SB	EB					WB	Total
					3,102	3,032						0	0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	5	9			14	12:00	56	45			101		
00:15	9	16			25	12:15	53	49			102		
00:30	4	12			16	12:30	43	34			77		
00:45	2	20	14	51	16	12:45	52	204	35	163	87	367	
01:00	4	14			18	13:00	46	45			91		
01:15	6	15			21	13:15	48	48			96		
01:30	7	7			14	13:30	51	46			97		
01:45	3	20	13	49	16	13:45	66	211	48	187	114	398	
02:00	8	7			15	14:00	54	62			116		
02:15	13	6			19	14:15	54	58			112		
02:30	4	13			17	14:30	57	51			108		
02:45	4	29	7	33	11	14:45	57	222	59	230	116	452	
03:00	6	6			12	15:00	58	66			124		
03:15	6	6			12	15:15	49	50			99		
03:30	6	9			15	15:30	45	68			113		
03:45	2	20	5	26	7	15:45	55	207	44	228	99	435	
04:00	3	10			13	16:00	70	61			131		
04:15	7	10			17	16:15	64	60			124		
04:30	4	6			10	16:30	65	65			130		
04:45	4	18	8	34	12	16:45	62	261	62	248	124	509	
05:00	8	7			15	17:00	56	76			132		
05:15	8	10			18	17:15	61	53			114		
05:30	16	11			27	17:30	69	44			113		
05:45	14	46	12	40	26	17:45	42	228	33	206	75	434	
06:00	9	19			28	18:00	59	38			97		
06:15	16	25			41	18:15	60	43			103		
06:30	29	24			53	18:30	41	32			73		
06:45	39	93	31	99	70	18:45	58	218	42	155	100	373	
07:00	22	30			52	19:00	63	27			90		
07:15	24	35			59	19:15	47	36			83		
07:30	54	83			137	19:30	37	26			63		
07:45	82	182	71	219	153	19:45	36	183	18	107	54	290	
08:00	63	38			101	20:00	35	26			61		
08:15	42	39			81	20:15	41	22			63		
08:30	30	27			57	20:30	34	30			64		
08:45	50	185	32	136	82	20:45	29	139	44	122	73	261	
09:00	25	21			46	21:00	17	34			51		
09:15	42	24			66	21:15	28	27			55		
09:30	34	28			62	21:30	23	23			46		
09:45	38	139	32	105	70	21:45	23	91	36	120	59	211	
10:00	23	49			72	22:00	21	26			47		
10:15	21	41			62	22:15	21	32			53		
10:30	37	30			67	22:30	9	24			33		
10:45	33	114	29	149	62	22:45	11	62	26	108	37	170	
11:00	34	24			58	23:00	8	33			41		
11:15	41	28			69	23:15	13	18			31		
11:30	47	34			81	23:30	6	15			21		
11:45	52	174	44	130	96	23:45	9	36	21	87	30	123	
TOTALS	1040	1071			2111	TOTALS	2062	1961			4023		
SPLIT %	49.3%	50.7%			34.4%	SPLIT %	51.3%	48.7%			65.6%		

DAILY TOTALS				NB	SB					EB	WB	Total	
				3,102	3,032					0	0	6,134	
AM Peak Hour	07:30	07:30			07:30		PM Peak Hour	16:00	16:15			16:15	
AM Pk Volume	241	231			472		PM Pk Volume	261	263			510	
Pk Hr Factor	0.735	0.696			0.771		Pk Hr Factor	0.932	0.865			0.966	
7 - 9 Volume	367	355	0	0	722		4 - 6 Volume	489	454	0	0	943	
7 - 9 Peak Hour	07:30	07:30			07:30		4 - 6 Peak Hour	16:00	16:15			16:15	
7 - 9 Pk Volume	241	231	0	0	472		4 - 6 Pk Volume	261	263	0	0	510	
Pk Hr Factor	0.735	0.696	0.000	0.000	0.771		Pk Hr Factor	0.932	0.865	0.000	0.000	0.966	

Appendix C

Required Minimum Intersection Sight Distance Triangles

APPENDIX C: SIGHT DISTANCE TRIANGLE EXHIBIT

CHERRY LOOP DRIVEWAY

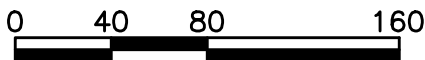
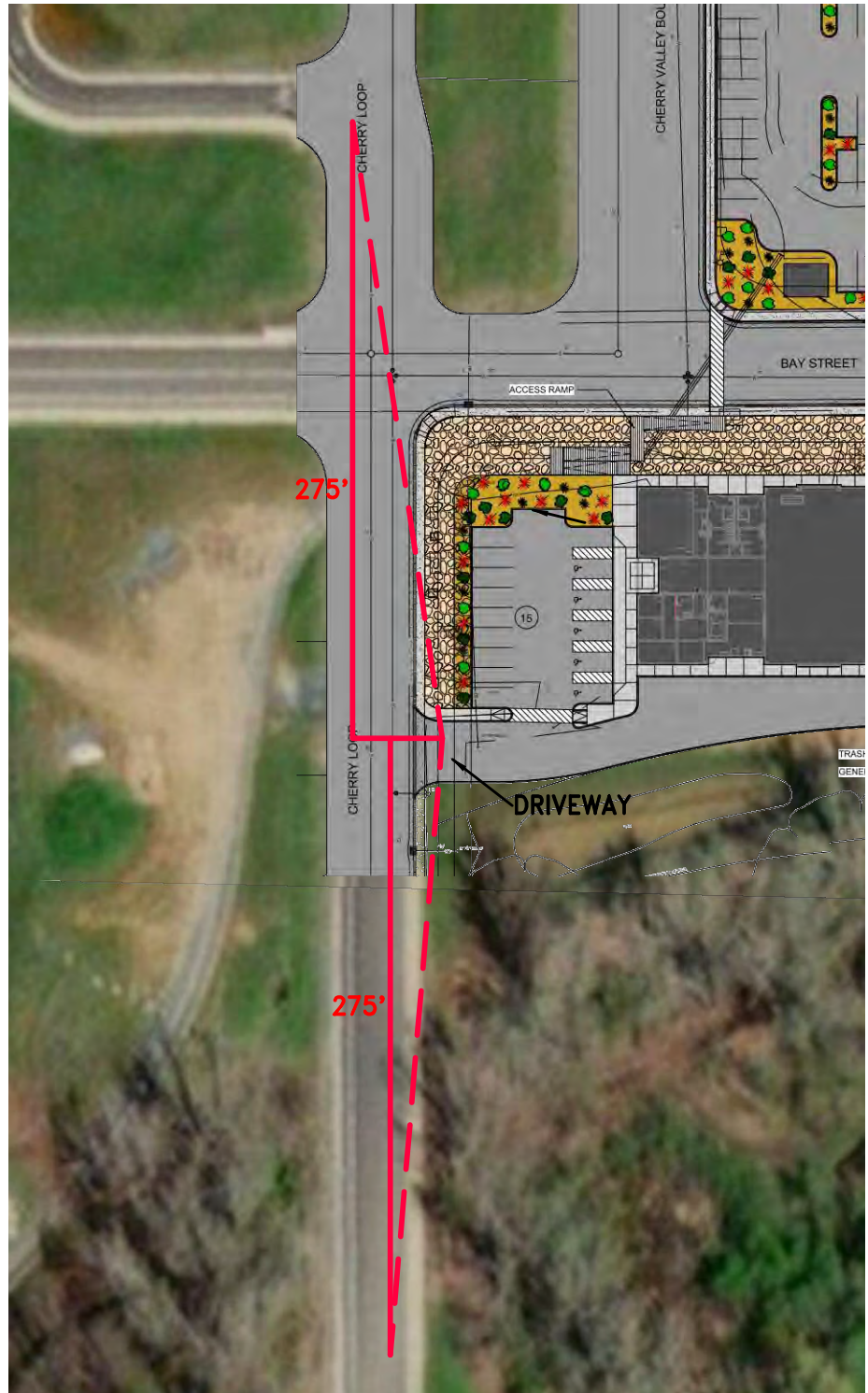
TUOLUMNE

CALIFORNIA

MARCH 2019



= MINIMUM
REQUIRED
INTERSECTION
SIGHT
DISTANCE
TRIANGLE



SCALE: 1" = 80'



WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

3301 C ST, BLDG. 100-B TEL 916.341.7760

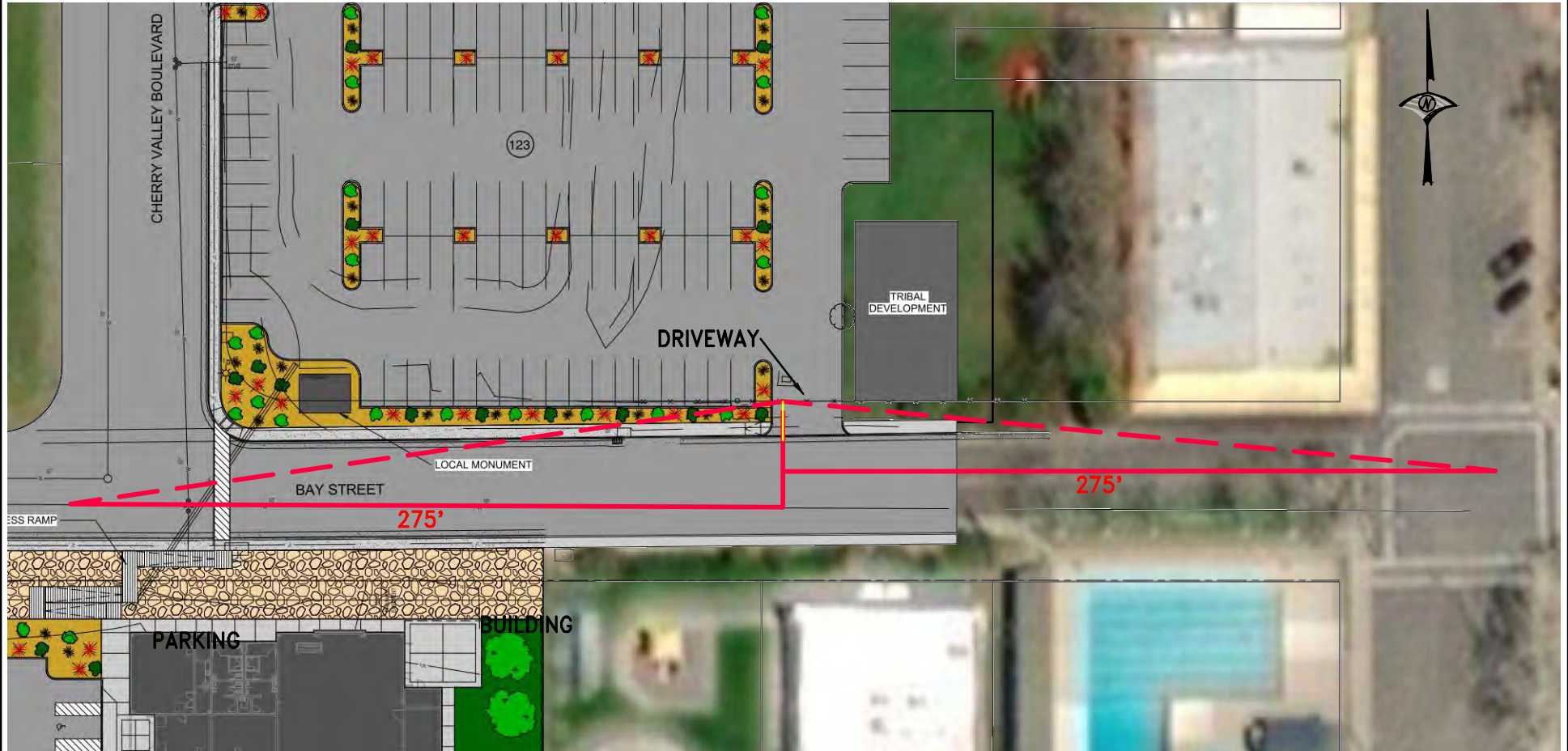
SACRAMENTO, CA 95816 FAX 916.341.7767

APPENDIX C: SIGHT DISTANCE TRIANGLE EXHIBIT
BAY STREET DRIVEWAY

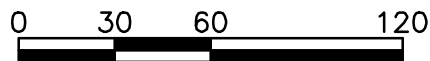
TUOLUMNE

CALIFORNIA

MARCH 2019



= MINIMUM REQUIRED INTERSECTION SIGHT DISTANCE TRIANGLE



SCALE: 1" = 60'



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST, BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

APPENDIX C: SIGHT DISTANCE TRIANGLE EXHIBIT CHERRY VALLEY BOULEVARD DRIVEWAY

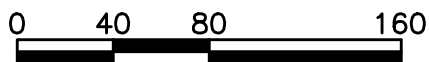
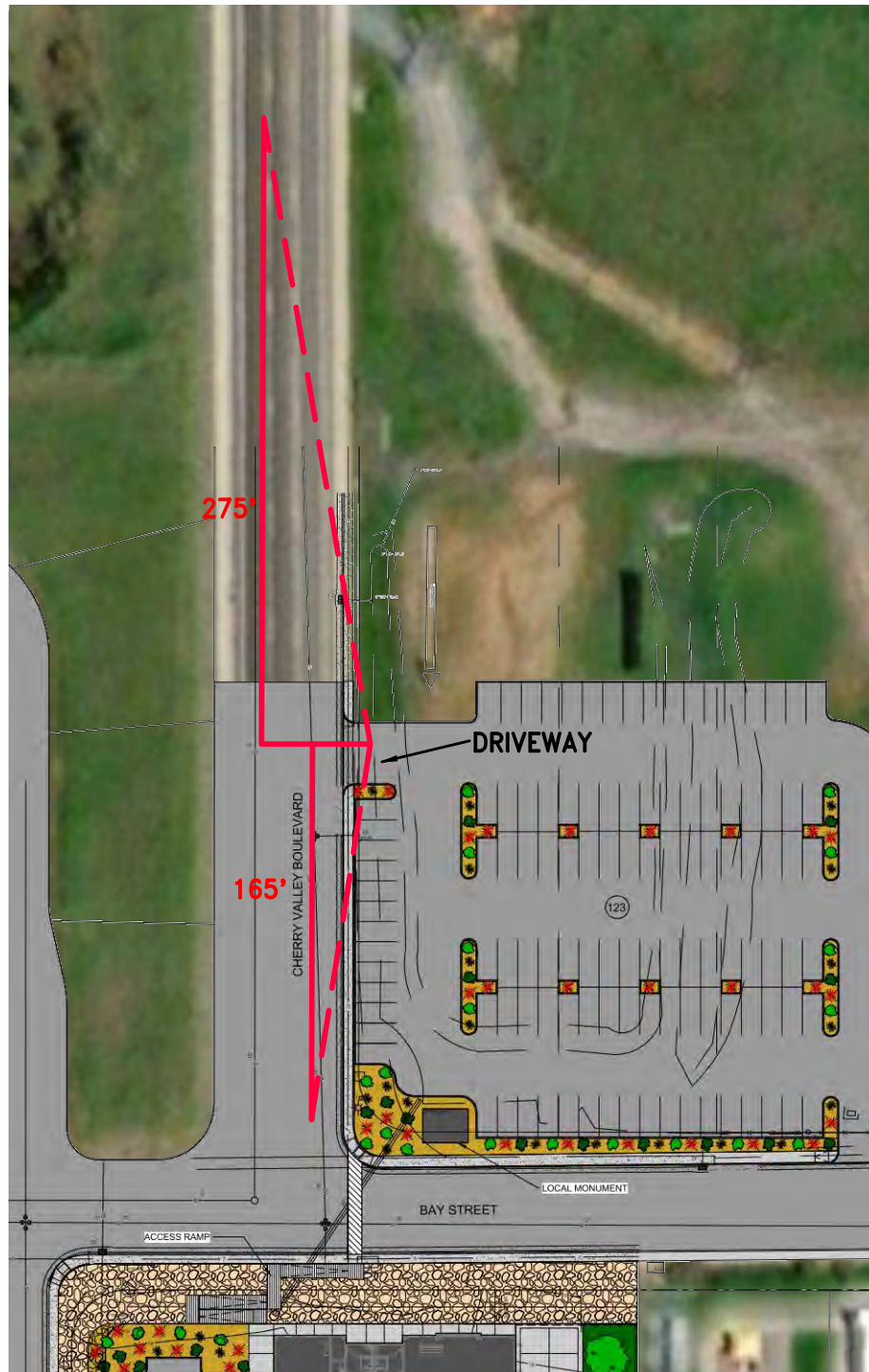
TUOLUMNE

CALIFORNIA

MARCH 2019



= MINIMUM
REQUIRED
INTERSECTION
SIGHT
DISTANCE
TRIANGLE



SCALE: 1" = 80'



WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

3301 C ST, BLDG. 100-B TEL 916.341.7760

SACRAMENTO, CA 95816 FAX 916.341.7767