Appendix A

California Emissions Estimator Model Results for Air Quality

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Windsor May Update

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.49	1000sqft	0.10	4,490.00	0
Enclosed Parking Structure	33.00	Space	0.30	13,200.00	0
Parking Lot	328.00	Space	2.95	131,200.00	0
Apartments Low Rise	12.00	Dwelling Unit	0.75	12,000.00	34
Congregate Care (Assisted Living)	119.00	Dwelling Unit	7.44	119,000.00	340
Retirement Community	141.00	Dwelling Unit	28.20	141,000.00	403
Strip Mall	19.92	1000sqft	0.46	19,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Pursuant to traffic memo May 16th 2022 w-Trans

Construction Phase - 23 month construction schedule

Architectural Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Vehicle Trips - Consistent with w-trans study. Average of Assited Living and nursing home for congregate care.

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Water And Wastewater - Wastewater treatment plant is 100% aerobic, no septic tank on site or facultative lagoons on wastewater treatment plant. https://www.townofwindsor.com/578/Water-Reclamation-Facilities

Area Mitigation -

Water Mitigation - Calgreen

Waste Mitigation - From SB1383

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	150
tblAreaMitigation	UseLowVOCPaintParkingValue	100	150
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	150
tblConstructionPhase	NumDays	55.00	193.00
tblConstructionPhase	NumDays	740.00	375.00
tblConstructionPhase	NumDays	75.00	38.00
tblConstructionPhase	NumDays	55.00	25.00
tblConstructionPhase	NumDays	30.00	13.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	114.00	225.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblGrading	AcresOfGrading	19.50	45.00
tblVehicleTrips	ST_TR	8.14	3.80
tblVehicleTrips	ST_TR	2.93	2.80
tblVehicleTrips	ST_TR	2.21	2.40
tblVehicleTrips	ST_TR	2.03	1.60
tblVehicleTrips	ST_TR	42.04	36.50
tblVehicleTrips	SU_TR	6.28	3.80
tblVehicleTrips	SU_TR	3.15	2.80
tblVehicleTrips	SU_TR	0.70	2.40
tblVehicleTrips	SU_TR	1.95	1.60
tblVehicleTrips	SU_TR	20.43	36.50
tblVehicleTrips	WD_TR	7.32	5.70
tblVehicleTrips	WD_TR	2.60	2.83
tblVehicleTrips	WD_TR	9.74	12.20
tblVehicleTrips	WD_TR	2.40	1.90
tblVehicleTrips	WD_TR	44.32	29.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	0.4175	3.1496	3.8300	8.8800e-003	0.6976	0.1302	0.8278	0.2299	0.1217	0.3516	0.0000	796.6158	796.6158	0.1231	0.0294	808.4445
2024	2.0231	1.1995	1.8351	4.1200e-003	0.1808	0.0484	0.2292	0.0486	0.0458	0.0944	0.0000	369.9690	369.9690	0.0461	0.0134	375.1125
Maximum	**2.0231**	**3.1496**	**3.8300**	**8.8800e-003**	**0.6976**	**0.1302**	**0.8278**	**0.2299**	**0.1217**	**0.3516**	**0.0000**	**796.6158**	**796.6158**	**0.1231**	**0.0294**	**808.4445**

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					
2023	0.4175	3.1496	3.8300	8.8800e-003	0.6976	0.1302	0.8278	0.2299	0.1217	0.3516	0.0000	796.6153	796.6153	0.1231	0.0294	808.4440
2024	2.0231	1.1995	1.8351	4.1200e-003	0.1808	0.0484	0.2292	0.0486	0.0458	0.0944	0.0000	369.9688	369.9688	0.0461	0.0134	375.1123
Maximum	**2.0231**	**3.1496**	**3.8300**	**8.8800e-003**	**0.6976**	**0.1302**	**0.8278**	**0.2299**	**0.1217**	**0.3516**	**0.0000**	**796.6153**	**796.6153**	**0.1231**	**0.0294**	**808.4440**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	N20	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)
3	**11-16-2022**	**2-15-2023**	0.6829	0.6829
4	**2-16-2023**	**5-15-2023**	0.8806	0.8806
5	**5-16-2023**	**8-15-2023**	0.7958	0.7958
6	**8-16-2023**	**11-15-2023**	0.8020	0.8020
7	**11-16-2023**	**2-15-2024**	0.7841	0.7841
8	**2-16-2024**	**5-15-2024**	1.3533	1.3533
9	**5-16-2024**	**8-15-2024**	0.8162	0.8162
10	**8-16-2024**	**9-30-2024**	0.4081	0.4081
		Highest	1.3533	1.3533

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	2.0386	0.0377	2.8820	1.8300e-003		0.1348	0.1348		0.1348	0.1348	12.4004	8.3994	20.7998	0.0231	8.1000e-004	21.6194
Energy	0.0142	0.1214	0.0541	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003	0.0000	222.2098	222.2098	0.0253	5.3100e-003	224.4221
Mobile	0.4762	0.5500	4.0688	7.9400e-003	0.9483	6.4500e-003	0.9548	0.2541	6.0400e-003	0.2601	0.0000	733.4545	733.4545	0.0514	0.0403	746.7579
Waste						0.0000	0.0000		0.0000	0.0000	41.4244	0.0000	41.4244	2.4481	0.0000	102.6271
Water						0.0000	0.0000		0.0000	0.0000	7.0744	8.2817	15.3562	0.0266	0.0157	20.6887
Total	**2.5290**	**0.7091**	**7.0049**	**0.0105**	**0.9483**	**0.1510**	**1.0993**	**0.2541**	**0.1506**	**0.4046**	**60.8992**	**972.3454**	**1,033.2446**	**2.5745**	**0.0621**	**1,116.1151**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.4111	0.0233	2.0178	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3059	3.3059	3.1600e-003	0.0000	3.3849
Energy	0.0142	0.1214	0.0541	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003	0.0000	222.2098	222.2098	0.0253	5.3100e-003	224.4221
Mobile	0.4762	0.5500	4.0688	7.9400e-003	0.9483	6.4500e-003	0.9548	0.2541	6.0400e-003	0.2601	0.0000	733.4545	733.4545	0.0514	0.0403	746.7579
Waste						0.0000	0.0000		0.0000	0.0000	10.3561	0.0000	10.3561	0.6120	0.0000	25.6568
Water						0.0000	0.0000		0.0000	0.0000	5.6595	7.1041	12.7636	0.0214	0.0125	17.0377
Total	**1.9014**	**0.6946**	**6.1407**	**8.8200e-003**	**0.9483**	**0.0275**	**0.9758**	**0.2541**	**0.0270**	**0.2811**	**16.0156**	**966.0744**	**982.0900**	**0.7133**	**0.0582**	**1,017.2594**

	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	N20	CO2e
Percent Reduction	**24.82**	**2.04**	**12.34**	**16.32**	**0.00**	**81.82**	**11.24**	**0.00**	**82.05**	**30.54**	**73.70**	**0.64**	**4.95**	**72.30**	**6.33**	**8.86**

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	1/2/2023	1/16/2023	6	13	
2	Grading	Grading	1/17/2023	3/1/2023	6	38	
3	Building Construction	Building Construction	3/2/2023	5/11/2024	6	375	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Architectural Coating	Architectural Coating	3/4/2024	10/14/2024	6	193	
5	Paving	Paving	10/15/2024	11/12/2024	6	25	

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 3.25

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 36,615; Non-Residential Outdoor: 12,205; Striped Parking Area: 8,664 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	57.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2023

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					0.1413	0.0000	0.1413	0.0671	0.0000	0.0671	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0173	0.1789	0.1186	2.5000e-004		8.2300e-003	8.2300e-003		7.5700e-003	7.5700e-003	0.0000	21.7430	21.7430	7.0300e-003	0.0000	21.9188
Total	**0.0173**	**0.1789**	**0.1186**	**2.5000e-004**	**0.1413**	**8.2300e-003**	**0.1495**	**0.0671**	**7.5700e-003**	**0.0747**	**0.0000**	**21.7430**	**21.7430**	**7.0300e-003**	**0.0000**	**21.9188**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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	4.1000e-004	2.8000e-004	3.2100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7433	0.7433	3.0000e-005	2.0000e-005	0.7511
Total	**4.1000e-004**	**2.8000e-004**	**3.2100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7433**	**0.7433**	**3.0000e-005**	**2.0000e-005**	**0.7511**

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					0.1413	0.0000	0.1413	0.0671	0.0000	0.0671	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0173	0.1789	0.1186	2.5000e-004		8.2300e-003	8.2300e-003		7.5700e-003	7.5700e-003	0.0000	21.7429	21.7429	7.0300e-003	0.0000	21.9187
Total	**0.0173**	**0.1789**	**0.1186**	**2.5000e-004**	**0.1413**	**8.2300e-003**	**0.1495**	**0.0671**	**7.5700e-003**	**0.0747**	**0.0000**	**21.7429**	**21.7429**	**7.0300e-003**	**0.0000**	**21.9187**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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	4.1000e-004	2.8000e-004	3.2100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7433	0.7433	3.0000e-005	2.0000e-005	0.7511
Total	**4.1000e-004**	**2.8000e-004**	**3.2100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7433**	**0.7433**	**3.0000e-005**	**2.0000e-005**	**0.7511**

3.3 Grading - 2023

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					0.2337	0.0000	0.2337	0.0758	0.0000	0.0758	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0631	0.6558	0.5330	1.1800e-003		0.0271	0.0271		0.0249	0.0249	0.0000	103.6169	103.6169	0.0335	0.0000	104.4547
Total	**0.0631**	**0.6558**	**0.5330**	**1.1800e-003**	**0.2337**	**0.0271**	**0.2608**	**0.0758**	**0.0249**	**0.1007**	**0.0000**	**103.6169**	**103.6169**	**0.0335**	**0.0000**	**104.4547**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	1.3500e-003	9.2000e-004	0.0104	3.0000e-005	2.9800e-003	2.0000e-005	3.0000e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.4142	2.4142	9.0000e-005	8.0000e-005	2.4396
Total	**1.3500e-003**	**9.2000e-004**	**0.0104**	**3.0000e-005**	**2.9800e-003**	**2.0000e-005**	**3.0000e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.4142**	**2.4142**	**9.0000e-005**	**8.0000e-005**	**2.4396**

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					0.2337	0.0000	0.2337	0.0758	0.0000	0.0758	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0631	0.6558	0.5330	1.1800e-003		0.0271	0.0271		0.0249	0.0249	0.0000	103.6168	103.6168	0.0335	0.0000	104.4546
Total	**0.0631**	**0.6558**	**0.5330**	**1.1800e-003**	**0.2337**	**0.0271**	**0.2608**	**0.0758**	**0.0249**	**0.1007**	**0.0000**	**103.6168**	**103.6168**	**0.0335**	**0.0000**	**104.4546**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	1.3500e-003	9.2000e-004	0.0104	3.0000e-005	2.9800e-003	2.0000e-005	3.0000e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.4142	2.4142	9.0000e-005	8.0000e-005	2.4396
Total	**1.3500e-003**	**9.2000e-004**	**0.0104**	**3.0000e-005**	**2.9800e-003**	**2.0000e-005**	**3.0000e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.4142**	**2.4142**	**9.0000e-005**	**8.0000e-005**	**2.4396**

3.4 Building Construction - 2023

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	0.2053	1.8772	2.1198	3.5200e-003		0.0913	0.0913		0.0859	0.0859	0.0000	302.5052	302.5052	0.0720	0.0000	304.3042
Total	**0.2053**	**1.8772**	**2.1198**	**3.5200e-003**		**0.0913**	**0.0913**		**0.0859**	**0.0859**	**0.0000**	**302.5052**	**302.5052**	**0.0720**	**0.0000**	**304.3042**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	8.1100e-003	0.3530	0.0991	1.5100e-003	0.0483	1.8900e-003	0.0502	0.0140	1.8000e-003	0.0158	0.0000	146.7122	146.7122	2.6600e-003	0.0222	153.3934
Worker	0.1220	0.0835	0.9459	2.3900e-003	0.2704	1.6500e-003	0.2720	0.0720	1.5200e-003	0.0735	0.0000	218.8810	218.8810	7.8400e-003	7.0700e-003	221.1827
Total	**0.1301**	**0.4365**	**1.0449**	**3.9000e-003**	**0.3187**	**3.5400e-003**	**0.3222**	**0.0859**	**3.3200e-003**	**0.0893**	**0.0000**	**365.5932**	**365.5932**	**0.0105**	**0.0293**	**374.5761**

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	0.2053	1.8772	2.1198	3.5200e-003		0.0913	0.0913		0.0859	0.0859	0.0000	302.5048	302.5048	0.0720	0.0000	304.3039
Total	**0.2053**	**1.8772**	**2.1198**	**3.5200e-003**		**0.0913**	**0.0913**		**0.0859**	**0.0859**	**0.0000**	**302.5048**	**302.5048**	**0.0720**	**0.0000**	**304.3039**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	8.1100e-003	0.3530	0.0991	1.5100e-003	0.0483	1.8900e-003	0.0502	0.0140	1.8000e-003	0.0158	0.0000	146.7122	146.7122	2.6600e-003	0.0222	153.3934
Worker	0.1220	0.0835	0.9459	2.3900e-003	0.2704	1.6500e-003	0.2720	0.0720	1.5200e-003	0.0735	0.0000	218.8810	218.8810	7.8400e-003	7.0700e-003	221.1827
Total	**0.1301**	**0.4365**	**1.0449**	**3.9000e-003**	**0.3187**	**3.5400e-003**	**0.3222**	**0.0859**	**3.3200e-003**	**0.0893**	**0.0000**	**365.5932**	**365.5932**	**0.0105**	**0.0293**	**374.5761**

3.4 Building Construction - 2024

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	0.0839	0.7663	0.9215	1.5400e-003		0.0350	0.0350		0.0329	0.0329	0.0000	132.1540	132.1540	0.0313	0.0000	132.9353
Total	**0.0839**	**0.7663**	**0.9215**	**1.5400e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**132.1540**	**132.1540**	**0.0313**	**0.0000**	**132.9353**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	3.3800e-003	0.1528	0.0420	6.5000e-004	0.0211	8.2000e-004	0.0219	6.1000e-003	7.8000e-004	6.8800e-003	0.0000	63.0359	63.0359	1.1900e-003	9.5400e-003	65.9073
Worker	0.0495	0.0323	0.3802	1.0100e-003	0.1181	6.8000e-004	0.1188	0.0314	6.2000e-004	0.0321	0.0000	92.5116	92.5116	3.0900e-003	2.8500e-003	93.4387
Total	**0.0529**	**0.1852**	**0.4221**	**1.6600e-003**	**0.1392**	**1.5000e-003**	**0.1407**	**0.0375**	**1.4000e-003**	**0.0389**	**0.0000**	**155.5475**	**155.5475**	**4.2800e-003**	**0.0124**	**159.3460**

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	0.0839	0.7663	0.9215	1.5400e-003		0.0350	0.0350		0.0329	0.0329	0.0000	132.1538	132.1538	0.0313	0.0000	132.9351
Total	**0.0839**	**0.7663**	**0.9215**	**1.5400e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**132.1538**	**132.1538**	**0.0313**	**0.0000**	**132.9351**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	3.3800e-003	0.1528	0.0420	6.5000e-004	0.0211	8.2000e-004	0.0219	6.1000e-003	7.8000e-004	6.8800e-003	0.0000	63.0359	63.0359	1.1900e-003	9.5400e-003	65.9073
Worker	0.0495	0.0323	0.3802	1.0100e-003	0.1181	6.8000e-004	0.1188	0.0314	6.2000e-004	0.0321	0.0000	92.5116	92.5116	3.0900e-003	2.8500e-003	93.4387
Total	**0.0529**	**0.1852**	**0.4221**	**1.6600e-003**	**0.1392**	**1.5000e-003**	**0.1407**	**0.0375**	**1.4000e-003**	**0.0389**	**0.0000**	**155.5475**	**155.5475**	**4.2800e-003**	**0.0124**	**159.3460**

3.5 Architectural Coating - 2024

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	1.8352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1176	0.1747	2.9000e-004		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	24.6389	24.6389	1.3900e-003	0.0000	24.6736
Total	**1.8526**	**0.1176**	**0.1747**	**2.9000e-004**		**5.8800e-003**	**5.8800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**24.6389**	**24.6389**	**1.3900e-003**	**0.0000**	**24.6736**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	0.0168	0.0110	0.1292	3.4000e-004	0.0401	2.3000e-004	0.0404	0.0107	2.1000e-004	0.0109	0.0000	31.4427	31.4427	1.0500e-003	9.7000e-004	31.7578
Total	**0.0168**	**0.0110**	**0.1292**	**3.4000e-004**	**0.0401**	**2.3000e-004**	**0.0404**	**0.0107**	**2.1000e-004**	**0.0109**	**0.0000**	**31.4427**	**31.4427**	**1.0500e-003**	**9.7000e-004**	**31.7578**

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	1.8352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1176	0.1747	2.9000e-004		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	24.6389	24.6389	1.3900e-003	0.0000	24.6736
Total	**1.8526**	**0.1176**	**0.1747**	**2.9000e-004**		**5.8800e-003**	**5.8800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**24.6389**	**24.6389**	**1.3900e-003**	**0.0000**	**24.6736**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	0.0168	0.0110	0.1292	3.4000e-004	0.0401	2.3000e-004	0.0404	0.0107	2.1000e-004	0.0109	0.0000	31.4427	31.4427	1.0500e-003	9.7000e-004	31.7578
Total	**0.0168**	**0.0110**	**0.1292**	**3.4000e-004**	**0.0401**	**2.3000e-004**	**0.0404**	**0.0107**	**2.1000e-004**	**0.0109**	**0.0000**	**31.4427**	**31.4427**	**1.0500e-003**	**9.7000e-004**	**31.7578**

3.6 Paving - 2024

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	0.0124	0.1191	0.1828	2.9000e-004		5.8600e-003	5.8600e-003		5.3900e-003	5.3900e-003	0.0000	25.0332	25.0332	8.1000e-003	0.0000	25.2356
Paving	3.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1191**	**0.1828**	**2.9000e-004**		**5.8600e-003**	**5.8600e-003**		**5.3900e-003**	**5.3900e-003**	**0.0000**	**25.0332**	**25.0332**	**8.1000e-003**	**0.0000**	**25.2356**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	6.2000e-004	4.0000e-004	4.7400e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1527	1.1527	4.0000e-005	4.0000e-005	1.1643
Total	**6.2000e-004**	**4.0000e-004**	**4.7400e-003**	**1.0000e-005**	**1.4700e-003**	**1.0000e-005**	**1.4800e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1527**	**1.1527**	**4.0000e-005**	**4.0000e-005**	**1.1643**

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	0.0124	0.1191	0.1828	2.9000e-004		5.8600e-003	5.8600e-003		5.3900e-003	5.3900e-003	0.0000	25.0331	25.0331	8.1000e-003	0.0000	25.2355
Paving	3.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1191**	**0.1828**	**2.9000e-004**		**5.8600e-003**	**5.8600e-003**		**5.3900e-003**	**5.3900e-003**	**0.0000**	**25.0331**	**25.0331**	**8.1000e-003**	**0.0000**	**25.2355**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	6.2000e-004	4.0000e-004	4.7400e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1527	1.1527	4.0000e-005	4.0000e-005	1.1643
Total	**6.2000e-004**	**4.0000e-004**	**4.7400e-003**	**1.0000e-005**	**1.4700e-003**	**1.0000e-005**	**1.4800e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1527**	**1.1527**	**4.0000e-005**	**4.0000e-005**	**1.1643**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.4762	0.5500	4.0688	7.9400e-003	0.9483	6.4500e-003	0.9548	0.2541	6.0400e-003	0.2601	0.0000	733.4545	733.4545	0.0514	0.0403	746.7579
Unmitigated	0.4762	0.5500	4.0688	7.9400e-003	0.9483	6.4500e-003	0.9548	0.2541	6.0400e-003	0.2601	0.0000	733.4545	733.4545	0.0514	0.0403	746.7579

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	68.40	45.60	45.60	142,932	142,932
Congregate Care (Assisted Living)	336.77	333.20	333.20	775,451	775,451
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	54.78	10.78	10.78	100,862	100,862
Parking Lot	0.00	0.00	0.00		
Retirement Community	267.90	225.60	225.60	590,831	590,831
Strip Mall	591.62	727.08	727.08	970,722	970,722
Total	1,319.47	1,342.26	1,342.26	2,580,797	2,580,797

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Congregate Care (Assisted	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Retirement Community	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Congregate Care (Assisted Living)	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Enclosed Parking Structure	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
General Office Building	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Parking Lot	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Retirement Community	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Strip Mall	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	82.0475	82.0475	0.0226	2.7400e-003	83.4268
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	82.0475	82.0475	0.0226	2.7400e-003	83.4268
NaturalGas Mitigated	0.0142	0.1214	0.0541	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003	0.0000	140.1623	140.1623	2.6900e-003	2.5700e-003	140.9952
NaturalGas Unmitigated	0.0142	0.1214	0.0541	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003	0.0000	140.1623	140.1623	2.6900e-003	2.5700e-003	140.9952

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	118413	6.4000e-004	5.4600e-003	2.3200e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3190	6.3190	1.2000e-004	1.2000e-004	6.3565
Congregate Care (Assisted Living)	997420	5.3800e-003	0.0460	0.0196	2.9000e-004		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	53.2261	53.2261	1.0200e-003	9.8000e-004	53.5424
Enclosed Parking Structure	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	0.0000
General Office Building	72738	3.9000e-004	3.5700e-003	3.0000e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8816	3.8816	7.0000e-005	7.0000e-005	3.9046
Parking Lot	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	0.0000
Retirement Community	1.39136e+006	7.5000e-003	0.0641	0.0273	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.2482	74.2482	1.4200e-003	1.3600e-003	74.6894
Strip Mall	46612.8	2.5000e-004	2.2800e-003	1.9200e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4874	2.4874	5.0000e-005	5.0000e-005	2.5022
Total		**0.0142**	**0.1214**	**0.0541**	**7.6000e-004**		**9.7800e-003**	**9.7800e-003**		**9.7800e-003**	**9.7800e-003**	**0.0000**	**140.1623**	**140.1623**	**2.6800e-003**	**2.5800e-003**	**140.9952**

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	118413	6.4000e-004	5.4600e-003	2.3200e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3190	6.3190	1.2000e-004	1.2000e-004	6.3565
Congregate Care (Assisted Living)	997420	5.3800e-003	0.0460	0.0196	2.9000e-004		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	53.2261	53.2261	1.0200e-003	9.8000e-004	53.5424
Enclosed Parking Structure	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	0.0000
General Office Building	72738	3.9000e-004	3.5700e-003	3.0000e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8816	3.8816	7.0000e-005	7.0000e-005	3.9046
Parking Lot	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	0.0000
Retirement Community	1.39136e+006	7.5000e-003	0.0641	0.0273	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.2482	74.2482	1.4200e-003	1.3600e-003	74.6894
Strip Mall	46612.8	2.5000e-004	2.2800e-003	1.9200e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4874	2.4874	5.0000e-005	5.0000e-005	2.5022
Total		**0.0142**	**0.1214**	**0.0541**	**7.6000e-004**		**9.7800e-003**	**9.7800e-003**		**9.7800e-003**	**9.7800e-003**	**0.0000**	**140.1623**	**140.1623**	**2.6800e-003**	**2.5800e-003**	**140.9952**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	48732.1	2.6521	7.3000e-004	9.0000e-005	2.6967
Congregate Care (Assisted Living)	460105	25.0399	6.8900e-003	8.3000e-004	25.4608
Enclosed Parking Structure	69300	3.7715	1.0400e-003	1.3000e-004	3.8349
General Office Building	77093.3	4.1956	1.1500e-003	1.4000e-004	4.2661
Parking Lot	45920	2.4991	6.9000e-004	8.0000e-005	2.5411
Retirement Community	599497	32.6258	8.9700e-003	1.0900e-003	33.1743
Strip Mall	206969	11.2637	3.1000e-003	3.8000e-004	11.4530
Total		**82.0475**	**0.0226**	**2.7400e-003**	**83.4268**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	48732.1	2.6521	7.3000e-004	9.0000e-005	2.6967
Congregate Care (Assisted Living)	460105	25.0399	6.8900e-003	8.3000e-004	25.4608
Enclosed Parking Structure	69300	3.7715	1.0400e-003	1.3000e-004	3.8349
General Office Building	77093.3	4.1956	1.1500e-003	1.4000e-004	4.2661
Parking Lot	45920	2.4991	6.9000e-004	8.0000e-005	2.5411
Retirement Community	599497	32.6258	8.9700e-003	1.0900e-003	33.1743
Strip Mall	206969	11.2637	3.1000e-003	3.8000e-004	11.4530
Total		**82.0475**	**0.0226**	**2.7400e-003**	**83.4268**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	1.4111	0.0233	2.0178	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3059	3.3059	3.1600e-003	0.0000	3.3849
Unmitigated	2.0386	0.0377	2.8820	1.8300e-003		0.1348	0.1348		0.1348	0.1348	12.4004	8.3994	20.7998	0.0231	8.1000e-004	21.6194

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	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6276	0.0144	0.8642	1.7200e-003		0.1236	0.1236		0.1236	0.1236	12.4004	5.0934	17.4938	0.0199	8.1000e-004	18.2344
Landscaping	0.0606	0.0233	2.0178	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3059	3.3059	3.1600e-003	0.0000	3.3849
Total	**2.0386**	**0.0377**	**2.8820**	**1.8300e-003**		**0.1348**	**0.1348**		**0.1348**	**0.1348**	**12.4004**	**8.3994**	**20.7998**	**0.0231**	**8.1000e-004**	**21.6194**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0606	0.0233	2.0178	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3059	3.3059	3.1600e-003	0.0000	3.3849
Total	**1.4111**	**0.0233**	**2.0178**	**1.1000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**3.3059**	**3.3059**	**3.1600e-003**	**0.0000**	**3.3849**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.7636	0.0214	0.0125	17.0377
Unmitigated	15.3562	0.0266	0.0157	20.6887

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.781848 / 0.492904	0.6007	1.0400e-003	6.1000e-004	0.8093
Congregate Care (Assisted Living)	7.75333 / 4.88797	5.9574	0.0103	6.0700e-003	8.0251
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.798025 / 0.489112	0.6105	1.0600e-003	6.2000e-004	0.8233
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.18672 / 5.79163	7.0587	0.0122	7.2000e-003	9.5088
Strip Mall	1.47552 / 0.904354	1.1288	1.9600e-003	1.1600e-003	1.5222
Total		**15.3562**	**0.0266**	**0.0157**	**20.6887**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.625479 / 0.492904	0.4994	8.4000e-004	4.9000e-004	0.6665
Congregate Care (Assisted Living)	6.20266 / 4.88797	4.9521	8.3100e-003	4.8600e-003	6.6095
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.63842 / 0.489112	0.5070	8.5000e-004	5.0000e-004	0.6776
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	7.34937 / 5.79163	5.8676	9.8500e-003	5.7600e-003	7.8314
Strip Mall	1.18042 / 0.904354	0.9375	1.5800e-003	9.3000e-004	1.2528
Total		**12.7636**	**0.0214**	**0.0125**	**17.0377**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Windsor May Update - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.3561	0.6120	0.0000	25.6568
Unmitigated	41.4244	2.4481	0.0000	102.6271

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.52	1.1205	0.0662	0.0000	2.7760
Congregate Care (Assisted Living)	108.59	22.0428	1.3027	0.0000	54.6101
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.18	0.8485	0.0502	0.0000	2.1021
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	64.86	13.1660	0.7781	0.0000	32.6182
Strip Mall	20.92	4.2466	0.2510	0.0000	10.5207
Total		**41.4244**	**2.4481**	**0.0000**	**102.6271**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1.38	0.2801	0.0166	0.0000	0.6940
Congregate Care (Assisted Living)	27.1475	5.5107	0.3257	0.0000	13.6525
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1.045	0.2121	0.0125	0.0000	0.5255
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	16.215	3.2915	0.1945	0.0000	8.1546
Strip Mall	5.23	1.0616	0.0627	0.0000	2.6302
Total		**10.3561**	**0.6120**	**0.0000**	**25.6568**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Windsor May Update

Sonoma-San Francisco County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.49	1000sqft	0.10	4,490.00	0
Enclosed Parking Structure	33.00	Space	0.30	13,200.00	0
Parking Lot	328.00	Space	2.95	131,200.00	0
Apartments Low Rise	12.00	Dwelling Unit	0.75	12,000.00	34
Congregate Care (Assisted Living)	119.00	Dwelling Unit	7.44	119,000.00	340
Retirement Community	141.00	Dwelling Unit	28.20	141,000.00	403
Strip Mall	19.92	1000sqft	0.46	19,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Pursuant to traffic memo May 16th 2022 w-Trans

Vehicle Trips - Consistent with w-trans study. Average of Assited Living and nursing home for congregate care.

Water And Wastewater - Wastewater treatment plant is 100% aerobic, no septic tank on site or facultative lagoons on wastewater treatment plant. https://www.townofwindsor.com/578/Water-Reclamation-Facilities

Area Mitigation -

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Mitigation - Calgreen

Waste Mitigation - From SB1383

Architectural Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Area Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Construction Phase - 23 month construction schedule

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	150
tblAreaMitigation	UseLowVOCPaintParkingValue	100	150
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	150
tblConstructionPhase	NumDays	30.00	13.00
tblConstructionPhase	NumDays	75.00	38.00
tblConstructionPhase	NumDays	740.00	375.00
tblConstructionPhase	NumDays	55.00	25.00
tblConstructionPhase	NumDays	55.00	193.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblVehicleTrips	ST_TR	8.14	3.80
tblVehicleTrips	ST_TR	2.93	2.80

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	2.21	2.40
tblVehicleTrips	ST_TR	2.03	1.60
tblVehicleTrips	ST_TR	42.04	36.50
tblVehicleTrips	SU_TR	6.28	3.80
tblVehicleTrips	SU_TR	3.15	2.80
tblVehicleTrips	SU_TR	0.70	2.40
tblVehicleTrips	SU_TR	1.95	1.60
tblVehicleTrips	SU_TR	20.43	36.50
tblVehicleTrips	WD_TR	7.32	5.70
tblVehicleTrips	WD_TR	2.60	2.83
tblVehicleTrips	WD_TR	9.74	12.20
tblVehicleTrips	WD_TR	2.40	1.90
tblVehicleTrips	WD_TR	44.32	29.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	3.3954	34.5588	28.6361	0.0636	45.5102	1.4255	46.7771	23.3526	1.3114	24.5181	0.0000	6,159.5832	6,159.5832	1.9490	0.2425	6,209.5534
2024	21.8146	17.8662	27.2177	0.0638	2.9882	0.7028	3.6911	0.8012	0.6647	1.4659	0.0000	6,326.8609	6,326.8609	0.7172	0.2455	6,417.7830
Maximum	**21.8146**	**34.5588**	**28.6361**	**0.0638**	**45.5102**	**1.4255**	**46.7771**	**23.3526**	**1.3114**	**24.5181**	**0.0000**	**6,326.8609**	**6,326.8609**	**1.9490**	**0.2455**	**6,417.7830**

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					
2023	3.3954	34.5588	28.6361	0.0636	45.5102	1.4255	46.7771	23.3526	1.3114	24.5181	0.0000	6,159.5832	6,159.5832	1.9490	0.2425	6,209.5534
2024	21.8146	17.8662	27.2177	0.0638	2.9882	0.7028	3.6911	0.8012	0.6647	1.4659	0.0000	6,326.8609	6,326.8609	0.7172	0.2455	6,417.7830
Maximum	**21.8146**	**34.5588**	**28.6361**	**0.0638**	**45.5102**	**1.4255**	**46.7771**	**23.3526**	**1.3114**	**24.5181**	**0.0000**	**6,326.8609**	**6,326.8609**	**1.9490**	**0.2455**	**6,417.7830**

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	N20	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	119.9357	2.7313	170.2130	0.2859		21.1059	21.1059		21.1059	21.1059	2,276.8702	1,048.4906	3,325.3608	3.1545	0.1609	3,452.1818
Energy	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
Mobile	3.2093	3.0683	23.7260	0.0495	5.9251	0.0386	5.9637	1.5815	0.0361	1.6176		5,039.5957	5,039.5957	0.3169	0.2540	5,123.2029
Total	**123.2226**	**6.4647**	**194.2353**	**0.3396**	**5.9251**	**21.1982**	**27.1233**	**1.5815**	**21.1957**	**22.7771**	**2,276.8702**	**6,934.6754**	**9,211.5455**	**3.4876**	**0.4304**	**9,427.0046**

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	8.0729	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246	0.0000	40.4906	40.4906	0.0387	0.0000	41.4584
Energy	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
Mobile	3.2093	3.0683	23.7260	0.0495	5.9251	0.0386	5.9637	1.5815	0.0361	1.6176		5,039.5957	5,039.5957	0.3169	0.2540	5,123.2029
Total	**11.3598**	**3.9917**	**46.4425**	**0.0549**	**5.9251**	**0.2168**	**6.1419**	**1.5815**	**0.2143**	**1.7958**	**0.0000**	**5,926.6754**	**5,926.6754**	**0.3718**	**0.2695**	**6,016.2812**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	N20	CO2e
Percent Reduction	**90.78**	**38.25**	**76.09**	**83.83**	**0.00**	**98.98**	**77.36**	**0.00**	**98.99**	**92.12**	**100.00**	**14.54**	**35.66**	**89.34**	**37.39**	**36.18**

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	1/2/2023	1/16/2023	6	13	
2	Grading	Grading	1/17/2023	3/1/2023	6	38	
3	Building Construction	Building Construction	3/2/2023	5/11/2024	6	375	
4	Architectural Coating	Architectural Coating	3/4/2024	10/14/2024	6	193	
5	Paving	Paving	10/15/2024	11/12/2024	6	25	

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 3.25

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 36,615; Non-Residential Outdoor: 12,205; Striped Parking Area: 8,664 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	57.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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					45.3623	0.0000	45.3623	23.3133	0.0000	23.3133			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**45.3623**	**1.2660**	**46.6284**	**23.3133**	**1.1647**	**24.4781**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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	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
Worker	0.0663	0.0389	0.5264	1.3200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		133.2949	133.2949	4.2600e-003	3.7600e-003	134.5229
Total	**0.0663**	**0.0389**	**0.5264**	**1.3200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**133.2949**	**133.2949**	**4.2600e-003**	**3.7600e-003**	**134.5229**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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					45.3623	0.0000	45.3623	23.3133	0.0000	23.3133			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**45.3623**	**1.2660**	**46.6284**	**23.3133**	**1.1647**	**24.4781**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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	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
Worker	0.0663	0.0389	0.5264	1.3200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		133.2949	133.2949	4.2600e-003	3.7600e-003	134.5229
Total	**0.0663**	**0.0389**	**0.5264**	**1.3200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**133.2949**	**133.2949**	**4.2600e-003**	**3.7600e-003**	**134.5229**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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					18.1650	0.0000	18.1650	7.2114	0.0000	7.2114			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**18.1650**	**1.4245**	**19.5895**	**7.2114**	**1.3105**	**8.5219**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	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
Worker	0.0737	0.0432	0.5849	1.4700e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		148.1055	148.1055	4.7300e-003	4.1800e-003	149.4699
Total	**0.0737**	**0.0432**	**0.5849**	**1.4700e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**148.1055**	**148.1055**	**4.7300e-003**	**4.1800e-003**	**149.4699**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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					18.1650	0.0000	18.1650	7.2114	0.0000	7.2114			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**18.1650**	**1.4245**	**19.5895**	**7.2114**	**1.3105**	**8.5219**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	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
Worker	0.0737	0.0432	0.5849	1.4700e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		148.1055	148.1055	4.7300e-003	4.1800e-003	149.4699
Total	**0.0737**	**0.0432**	**0.5849**	**1.4700e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**148.1055**	**148.1055**	**4.7300e-003**	**4.1800e-003**	**149.4699**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0630	2.6204	0.7502	0.0116	0.3842	0.0144	0.3986	0.1105	0.0138	0.1243		1,238.6878	1,238.6878	0.0226	0.1873	1,295.0666
Worker	0.9729	0.5700	7.7204	0.0193	2.1687	0.0126	2.1813	0.5752	0.0116	0.5869		1,954.9924	1,954.9924	0.0625	0.0552	1,973.0023
Total	**1.0359**	**3.1905**	**8.4705**	**0.0309**	**2.5529**	**0.0271**	**2.5799**	**0.6857**	**0.0254**	**0.7111**		**3,193.6801**	**3,193.6801**	**0.0850**	**0.2425**	**3,268.0689**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0630	2.6204	0.7502	0.0116	0.3842	0.0144	0.3986	0.1105	0.0138	0.1243		1,238.6878	1,238.6878	0.0226	0.1873	1,295.0666
Worker	0.9729	0.5700	7.7204	0.0193	2.1687	0.0126	2.1813	0.5752	0.0116	0.5869		1,954.9924	1,954.9924	0.0625	0.0552	1,973.0023
Total	**1.0359**	**3.1905**	**8.4705**	**0.0309**	**2.5529**	**0.0271**	**2.5799**	**0.6857**	**0.0254**	**0.7111**		**3,193.6801**	**3,193.6801**	**0.0850**	**0.2425**	**3,268.0689**

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0000
Vendor	0.0602	2.5971	0.7270	0.0114	0.3842	0.0143	0.3985	0.1105	0.0137	0.1242		1,218.4594	1,218.4594	0.0230	0.1842	1,273.9356
Worker	0.9033	0.5051	7.0903	0.0187	2.1687	0.0119	2.1806	0.5752	0.0110	0.5862		1,891.5180	1,891.5180	0.0562	0.0510	1,908.1249
Total	**0.9635**	**3.1022**	**7.8173**	**0.0301**	**2.5529**	**0.0262**	**2.5791**	**0.6857**	**0.0247**	**0.7104**		**3,109.9774**	**3,109.9774**	**0.0792**	**0.2353**	**3,182.0605**

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0000
Vendor	0.0602	2.5971	0.7270	0.0114	0.3842	0.0143	0.3985	0.1105	0.0137	0.1242		1,218.4594	1,218.4594	0.0230	0.1842	1,273.9356
Worker	0.9033	0.5051	7.0903	0.0187	2.1687	0.0119	2.1806	0.5752	0.0110	0.5862		1,891.5180	1,891.5180	0.0562	0.0510	1,908.1249
Total	**0.9635**	**3.1022**	**7.8173**	**0.0301**	**2.5529**	**0.0262**	**2.5791**	**0.6857**	**0.0247**	**0.7104**		**3,109.9774**	**3,109.9774**	**0.0792**	**0.2353**	**3,182.0605**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	19.0175					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**19.1983**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1813	0.1014	1.4234	3.7600e-003	0.4354	2.3900e-003	0.4378	0.1155	2.2000e-003	0.1177		379.7366	379.7366	0.0113	0.0102	383.0705
Total	**0.1813**	**0.1014**	**1.4234**	**3.7600e-003**	**0.4354**	**2.3900e-003**	**0.4378**	**0.1155**	**2.2000e-003**	**0.1177**		**379.7366**	**379.7366**	**0.0113**	**0.0102**	**383.0705**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	19.0175					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**19.1983**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1813	0.1014	1.4234	3.7600e-003	0.4354	2.3900e-003	0.4378	0.1155	2.2000e-003	0.1177		379.7366	379.7366	0.0113	0.0102	383.0705
Total	**0.1813**	**0.1014**	**1.4234**	**3.7600e-003**	**0.4354**	**2.3900e-003**	**0.4378**	**0.1155**	**2.2000e-003**	**0.1177**		**379.7366**	**379.7366**	**0.0113**	**0.0102**	**383.0705**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2973**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	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
Worker	0.0513	0.0287	0.4029	1.0600e-003	0.1232	6.8000e-004	0.1239	0.0327	6.2000e-004	0.0333		107.4726	107.4726	3.1900e-003	2.9000e-003	108.4162
Total	**0.0513**	**0.0287**	**0.4029**	**1.0600e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.2000e-004**	**0.0333**		**107.4726**	**107.4726**	**3.1900e-003**	**2.9000e-003**	**108.4162**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2973**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	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
Worker	0.0513	0.0287	0.4029	1.0600e-003	0.1232	6.8000e-004	0.1239	0.0327	6.2000e-004	0.0333		107.4726	107.4726	3.1900e-003	2.9000e-003	108.4162
Total	**0.0513**	**0.0287**	**0.4029**	**1.0600e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.2000e-004**	**0.0333**		**107.4726**	**107.4726**	**3.1900e-003**	**2.9000e-003**	**108.4162**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

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	3.2093	3.0683	23.7260	0.0495	5.9251	0.0386	5.9637	1.5815	0.0361	1.6176		5,039.5957	5,039.5957	0.3169	0.2540	5,123.2029
Unmitigated	3.2093	3.0683	23.7260	0.0495	5.9251	0.0386	5.9637	1.5815	0.0361	1.6176		5,039.5957	5,039.5957	0.3169	0.2540	5,123.2029

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	68.40	45.60	45.60	142,932	142,932
Congregate Care (Assisted Living)	336.77	333.20	333.20	775,451	775,451
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	54.78	10.78	10.78	100,862	100,862
Parking Lot	0.00	0.00	0.00		
Retirement Community	267.90	225.60	225.60	590,831	590,831
Strip Mall	591.62	727.08	727.08	970,722	970,722
Total	1,319.47	1,342.26	1,342.26	2,580,797	2,580,797

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Congregate Care (Assisted	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Retirement Community	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Congregate Care (Assisted Living)	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Enclosed Parking Structure	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
General Office Building	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Parking Lot	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Retirement Community	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Strip Mall	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
NaturalGas Unmitigated	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	324.42	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003		38.1671	38.1671	7.3000e-004	7.0000e-004	38.3939
Congregate Care (Assisted Living)	2732.66	0.0295	0.2518	0.1072	1.6100e-003		0.0204	0.0204		0.0204	0.0204		321.4891	321.4891	6.1600e-003	5.8900e-003	323.3995
Enclosed Parking Structure	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
General Office Building	199.282	2.1500e-003	0.0195	0.0164	1.2000e-004		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003		23.4450	23.4450	4.5000e-004	4.3000e-004	23.5843
Parking Lot	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
Retirement Community	3811.94	0.0411	0.3513	0.1495	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.4636	448.4636	8.6000e-003	8.2200e-003	451.1286
Strip Mall	127.706	1.3800e-003	0.0125	0.0105	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0243	15.0243	2.9000e-004	2.8000e-004	15.1136
Total		**0.0776**	**0.6651**	**0.2963**	**4.2400e-003**		**0.0536**	**0.0536**		**0.0536**	**0.0536**		**846.5891**	**846.5891**	**0.0162**	**0.0155**	**851.6199**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	0.32442	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003		38.1671	38.1671	7.3000e-004	7.0000e-004	38.3939
Congregate Care (Assisted Living)	2.73266	0.0295	0.2518	0.1072	1.6100e-003		0.0204	0.0204		0.0204	0.0204		321.4891	321.4891	6.1600e-003	5.8900e-003	323.3995
Enclosed Parking Structure	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
General Office Building	0.199282	2.1500e-003	0.0195	0.0164	1.2000e-004		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003		23.4450	23.4450	4.5000e-004	4.3000e-004	23.5843
Parking Lot	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
Retirement Community	3.81194	0.0411	0.3513	0.1495	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.4636	448.4636	8.6000e-003	8.2200e-003	451.1286
Strip Mall	0.127706	1.3800e-003	0.0125	0.0105	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0243	15.0243	2.9000e-004	2.8000e-004	15.1136
Total		**0.0776**	**0.6651**	**0.2963**	**4.2400e-003**		**0.0536**	**0.0536**		**0.0536**	**0.0536**		**846.5891**	**846.5891**	**0.0162**	**0.0155**	**851.6199**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Windsor May Update - Sonoma-San Francisco County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	8.0729	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246	0.0000	40.4906	40.4906	0.0387	0.0000	41.4584
Unmitigated	119.9357	2.7313	170.2130	0.2859		21.1059	21.1059		21.1059	21.1059	2,276.8702	1,048.4906	3,325.3608	3.1545	0.1609	3,452.1818

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	1.0056					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	111.8627	2.4730	147.7928	0.2847		20.9814	20.9814		20.9814	20.9814	2,276.8702	1,008.0000	3,284.8702	3.1158	0.1609	3,410.7234
Landscaping	0.6730	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246		40.4906	40.4906	0.0387		41.4584
Total	**119.9357**	**2.7313**	**170.2130**	**0.2859**		**21.1059**	**21.1059**		**21.1059**	**21.1059**	**2,276.8702**	**1,048.4906**	**3,325.3607**	**3.1545**	**0.1609**	**3,452.1818**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.0056					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.6730	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246		40.4906	40.4906	0.0387		41.4584
Total	**8.0729**	**0.2584**	**22.4202**	**1.1900e-003**		**0.1246**	**0.1246**		**0.1246**	**0.1246**	**0.0000**	**40.4906**	**40.4906**	**0.0387**	**0.0000**	**41.4584**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Windsor May Update

Sonoma-San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.49	1000sqft	0.10	4,490.00	0
Enclosed Parking Structure	33.00	Space	0.30	13,200.00	0
Parking Lot	328.00	Space	2.95	131,200.00	0
Apartments Low Rise	12.00	Dwelling Unit	0.75	12,000.00	34
Congregate Care (Assisted Living)	119.00	Dwelling Unit	7.44	119,000.00	340
Retirement Community	141.00	Dwelling Unit	28.20	141,000.00	403
Strip Mall	19.92	1000sqft	0.46	19,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Pursuant to traffic memo May 16th 2022 w-Trans

Vehicle Trips - Consistent with w-trans study. Average of Assited Living and nursing home for congregate care.

Water And Wastewater - Wastewater treatment plant is 100% aerobic, no septic tank on site or facultative lagoons on wastewater treatment plant. https://www.townofwindsor.com/578/Water-Reclamation-Facilities

Area Mitigation -

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water Mitigation - Calgreen

Waste Mitigation - From SB1383

Architectural Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Area Coating - BAAQMD Regulation 8 Rule 3, Nonflat Coating and Traffic Marking used

Construction Phase - 23 month construction schedule

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	150
tblAreaMitigation	UseLowVOCPaintParkingValue	100	150
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	150
tblConstructionPhase	NumDays	30.00	13.00
tblConstructionPhase	NumDays	75.00	38.00
tblConstructionPhase	NumDays	740.00	375.00
tblConstructionPhase	NumDays	55.00	25.00
tblConstructionPhase	NumDays	55.00	193.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblVehicleTrips	ST_TR	8.14	3.80
tblVehicleTrips	ST_TR	2.93	2.80

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	2.21	2.40
tblVehicleTrips	ST_TR	2.03	1.60
tblVehicleTrips	ST_TR	42.04	36.50
tblVehicleTrips	SU_TR	6.28	3.80
tblVehicleTrips	SU_TR	3.15	2.80
tblVehicleTrips	SU_TR	0.70	2.40
tblVehicleTrips	SU_TR	1.95	1.60
tblVehicleTrips	SU_TR	20.43	36.50
tblVehicleTrips	WD_TR	7.32	5.70
tblVehicleTrips	WD_TR	2.60	2.83
tblVehicleTrips	WD_TR	9.74	12.20
tblVehicleTrips	WD_TR	2.40	1.90
tblVehicleTrips	WD_TR	44.32	29.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	3.3984	34.5690	28.6144	0.0635	45.5102	1.4255	46.7771	23.3526	1.3114	24.5181	0.0000	6,150.1893	6,150.1893	1.9496	0.2514	6,200.3657
2024	21.8596	18.1498	26.9494	0.0624	2.9882	0.7029	3.6911	0.8012	0.6648	1.4659	0.0000	6,184.5083	6,184.5083	0.7191	0.2553	6,278.5510
Maximum	**21.8596**	**34.5690**	**28.6144**	**0.0635**	**45.5102**	**1.4255**	**46.7771**	**23.3526**	**1.3114**	**24.5181**	**0.0000**	**6,184.5083**	**6,184.5083**	**1.9496**	**0.2553**	**6,278.5510**

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					
2023	3.3984	34.5690	28.6144	0.0635	45.5102	1.4255	46.7771	23.3526	1.3114	24.5181	0.0000	6,150.1893	6,150.1893	1.9496	0.2514	6,200.3657
2024	21.8596	18.1498	26.9494	0.0624	2.9882	0.7029	3.6911	0.8012	0.6648	1.4659	0.0000	6,184.5083	6,184.5083	0.7191	0.2553	6,278.5510
Maximum	**21.8596**	**34.5690**	**28.6144**	**0.0635**	**45.5102**	**1.4255**	**46.7771**	**23.3526**	**1.3114**	**24.5181**	**0.0000**	**6,184.5083**	**6,184.5083**	**1.9496**	**0.2553**	**6,278.5510**

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	N20	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	119.9357	2.7313	170.2130	0.2859		21.1059	21.1059		21.1059	21.1059	2,276.8702	1,048.4906	3,325.3608	3.1545	0.1609	3,452.1818
Energy	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
Mobile	2.8401	3.4691	26.1628	0.0472	5.9251	0.0386	5.9638	1.5815	0.0361	1.6176		4,803.9940	4,803.9940	0.3609	0.2765	4,895.4091
Total	**122.8533**	**6.8655**	**196.6721**	**0.3373**	**5.9251**	**21.1982**	**27.1233**	**1.5815**	**21.1957**	**22.7772**	**2,276.8702**	**6,699.0736**	**8,975.9438**	**3.5317**	**0.4529**	**9,199.2108**

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	8.0729	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246	0.0000	40.4906	40.4906	0.0387	0.0000	41.4584
Energy	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
Mobile	2.8401	3.4691	26.1628	0.0472	5.9251	0.0386	5.9638	1.5815	0.0361	1.6176		4,803.9940	4,803.9940	0.3609	0.2765	4,895.4091
Total	**10.9906**	**4.3925**	**48.8793**	**0.0526**	**5.9251**	**0.2168**	**6.1420**	**1.5815**	**0.2143**	**1.7958**	**0.0000**	**5,691.0736**	**5,691.0736**	**0.4159**	**0.2920**	**5,788.4874**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	N20	CO2e
Percent Reduction	**91.05**	**36.02**	**75.15**	**84.41**	**0.00**	**98.98**	**77.36**	**0.00**	**98.99**	**92.12**	**100.00**	**15.05**	**36.60**	**88.22**	**35.53**	**37.08**

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	1/2/2023	1/16/2023	6	13	
2	Grading	Grading	1/17/2023	3/1/2023	6	38	
3	Building Construction	Building Construction	3/2/2023	5/11/2024	6	375	
4	Architectural Coating	Architectural Coating	3/4/2024	10/14/2024	6	193	
5	Paving	Paving	10/15/2024	11/12/2024	6	25	

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 225

Acres of Paving: 3.25

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 36,615; Non-Residential Outdoor: 12,205; Striped Parking Area: 8,664 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	264.00	57.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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					45.3623	0.0000	45.3623	23.3133	0.0000	23.3133			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**45.3623**	**1.2660**	**46.6284**	**23.3133**	**1.1647**	**24.4781**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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	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
Worker	0.0690	0.0481	0.5069	1.2300e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		124.8405	124.8405	4.7900e-003	4.3400e-003	126.2539
Total	**0.0690**	**0.0481**	**0.5069**	**1.2300e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**124.8405**	**124.8405**	**4.7900e-003**	**4.3400e-003**	**126.2539**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

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					45.3623	0.0000	45.3623	23.3133	0.0000	23.3133			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**45.3623**	**1.2660**	**46.6284**	**23.3133**	**1.1647**	**24.4781**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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	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
Worker	0.0690	0.0481	0.5069	1.2300e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		124.8405	124.8405	4.7900e-003	4.3400e-003	126.2539
Total	**0.0690**	**0.0481**	**0.5069**	**1.2300e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**124.8405**	**124.8405**	**4.7900e-003**	**4.3400e-003**	**126.2539**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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					18.1650	0.0000	18.1650	7.2114	0.0000	7.2114			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**18.1650**	**1.4245**	**19.5895**	**7.2114**	**1.3105**	**8.5219**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	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
Worker	0.0766	0.0534	0.5632	1.3700e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		138.7116	138.7116	5.3200e-003	4.8200e-003	140.2821
Total	**0.0766**	**0.0534**	**0.5632**	**1.3700e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**138.7116**	**138.7116**	**5.3200e-003**	**4.8200e-003**	**140.2821**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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					18.1650	0.0000	18.1650	7.2114	0.0000	7.2114			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**18.1650**	**1.4245**	**19.5895**	**7.2114**	**1.3105**	**8.5219**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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	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
Worker	0.0766	0.0534	0.5632	1.3700e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		138.7116	138.7116	5.3200e-003	4.8200e-003	140.2821
Total	**0.0766**	**0.0534**	**0.5632**	**1.3700e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**138.7116**	**138.7116**	**5.3200e-003**	**4.8200e-003**	**140.2821**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0618	2.7618	0.7704	0.0116	0.3842	0.0145	0.3987	0.1105	0.0139	0.1243		1,240.0423	1,240.0423	0.0224	0.1877	1,296.5360
Worker	1.0117	0.7049	7.4339	0.0181	2.1687	0.0126	2.1813	0.5752	0.0116	0.5869		1,830.9933	1,830.9933	0.0702	0.0637	1,851.7236
Total	**1.0735**	**3.4667**	**8.2044**	**0.0297**	**2.5529**	**0.0271**	**2.5800**	**0.6857**	**0.0255**	**0.7112**		**3,071.0356**	**3,071.0356**	**0.0926**	**0.2514**	**3,148.2596**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.0000
Vendor	0.0618	2.7618	0.7704	0.0116	0.3842	0.0145	0.3987	0.1105	0.0139	0.1243		1,240.0423	1,240.0423	0.0224	0.1877	1,296.5360
Worker	1.0117	0.7049	7.4339	0.0181	2.1687	0.0126	2.1813	0.5752	0.0116	0.5869		1,830.9933	1,830.9933	0.0702	0.0637	1,851.7236
Total	**1.0735**	**3.4667**	**8.2044**	**0.0297**	**2.5529**	**0.0271**	**2.5800**	**0.6857**	**0.0255**	**0.7112**		**3,071.0356**	**3,071.0356**	**0.0926**	**0.2514**	**3,148.2596**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0000
Vendor	0.0589	2.7374	0.7475	0.0114	0.3842	0.0144	0.3986	0.1105	0.0138	0.1242		1,219.8461	1,219.8461	0.0229	0.1846	1,275.4321
Worker	0.9417	0.6245	6.8498	0.0175	2.1687	0.0119	2.1806	0.5752	0.0110	0.5862		1,771.8108	1,771.8108	0.0634	0.0588	1,790.9251
Total	**1.0006**	**3.3619**	**7.5973**	**0.0289**	**2.5529**	**0.0263**	**2.5791**	**0.6857**	**0.0247**	**0.7104**		**2,991.6569**	**2,991.6569**	**0.0862**	**0.2434**	**3,066.3573**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.0000
Vendor	0.0589	2.7374	0.7475	0.0114	0.3842	0.0144	0.3986	0.1105	0.0138	0.1242		1,219.8461	1,219.8461	0.0229	0.1846	1,275.4321
Worker	0.9417	0.6245	6.8498	0.0175	2.1687	0.0119	2.1806	0.5752	0.0110	0.5862		1,771.8108	1,771.8108	0.0634	0.0588	1,790.9251
Total	**1.0006**	**3.3619**	**7.5973**	**0.0289**	**2.5529**	**0.0263**	**2.5791**	**0.6857**	**0.0247**	**0.7104**		**2,991.6569**	**2,991.6569**	**0.0862**	**0.2434**	**3,066.3573**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	19.0175					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**19.1983**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1891	0.1254	1.3752	3.5200e-003	0.4354	2.3900e-003	0.4378	0.1155	2.2000e-003	0.1177		355.7044	355.7044	0.0127	0.0118	359.5418
Total	**0.1891**	**0.1254**	**1.3752**	**3.5200e-003**	**0.4354**	**2.3900e-003**	**0.4378**	**0.1155**	**2.2000e-003**	**0.1177**		**355.7044**	**355.7044**	**0.0127**	**0.0118**	**359.5418**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Architectural Coating - 2024

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	19.0175					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**19.1983**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	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
Worker	0.1891	0.1254	1.3752	3.5200e-003	0.4354	2.3900e-003	0.4378	0.1155	2.2000e-003	0.1177		355.7044	355.7044	0.0127	0.0118	359.5418
Total	**0.1891**	**0.1254**	**1.3752**	**3.5200e-003**	**0.4354**	**2.3900e-003**	**0.4378**	**0.1155**	**2.2000e-003**	**0.1177**		**355.7044**	**355.7044**	**0.0127**	**0.0118**	**359.5418**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2973**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	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
Worker	0.0535	0.0355	0.3892	1.0000e-003	0.1232	6.8000e-004	0.1239	0.0327	6.2000e-004	0.0333		100.6711	100.6711	3.6000e-003	3.3400e-003	101.7571
Total	**0.0535**	**0.0355**	**0.3892**	**1.0000e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.2000e-004**	**0.0333**		**100.6711**	**100.6711**	**3.6000e-003**	**3.3400e-003**	**101.7571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2973**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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	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
Worker	0.0535	0.0355	0.3892	1.0000e-003	0.1232	6.8000e-004	0.1239	0.0327	6.2000e-004	0.0333		100.6711	100.6711	3.6000e-003	3.3400e-003	101.7571
Total	**0.0535**	**0.0355**	**0.3892**	**1.0000e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.2000e-004**	**0.0333**		**100.6711**	**100.6711**	**3.6000e-003**	**3.3400e-003**	**101.7571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

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	2.8401	3.4691	26.1628	0.0472	5.9251	0.0386	5.9638	1.5815	0.0361	1.6176		4,803.9940	4,803.9940	0.3609	0.2765	4,895.4091
Unmitigated	2.8401	3.4691	26.1628	0.0472	5.9251	0.0386	5.9638	1.5815	0.0361	1.6176		4,803.9940	4,803.9940	0.3609	0.2765	4,895.4091

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	68.40	45.60	45.60	142,932	142,932
Congregate Care (Assisted Living)	336.77	333.20	333.20	775,451	775,451
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	54.78	10.78	10.78	100,862	100,862
Parking Lot	0.00	0.00	0.00		
Retirement Community	267.90	225.60	225.60	590,831	590,831
Strip Mall	591.62	727.08	727.08	970,722	970,722
Total	1,319.47	1,342.26	1,342.26	2,580,797	2,580,797

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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
Congregate Care (Assisted	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Retirement Community	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Congregate Care (Assisted Living)	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Enclosed Parking Structure	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
General Office Building	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Parking Lot	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Retirement Community	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279
Strip Mall	0.578487	0.054091	0.163601	0.113178	0.027971	0.007469	0.015619	0.006666	0.001080	0.000273	0.026807	0.001478	0.003279

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199
NaturalGas Unmitigated	0.0776	0.6651	0.2963	4.2300e-003		0.0536	0.0536		0.0536	0.0536		846.5891	846.5891	0.0162	0.0155	851.6199

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	324.42	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003		38.1671	38.1671	7.3000e-004	7.0000e-004	38.3939
Congregate Care (Assisted Living)	2732.66	0.0295	0.2518	0.1072	1.6100e-003		0.0204	0.0204		0.0204	0.0204		321.4891	321.4891	6.1600e-003	5.8900e-003	323.3995
Enclosed Parking Structure	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
General Office Building	199.282	2.1500e-003	0.0195	0.0164	1.2000e-004		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003		23.4450	23.4450	4.5000e-004	4.3000e-004	23.5843
Parking Lot	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
Retirement Community	3811.94	0.0411	0.3513	0.1495	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.4636	448.4636	8.6000e-003	8.2200e-003	451.1286
Strip Mall	127.706	1.3800e-003	0.0125	0.0105	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0243	15.0243	2.9000e-004	2.8000e-004	15.1136
Total		**0.0776**	**0.6651**	**0.2963**	**4.2400e-003**		**0.0536**	**0.0536**		**0.0536**	**0.0536**		**846.5891**	**846.5891**	**0.0162**	**0.0155**	**851.6199**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Apartments Low Rise	0.32442	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003		38.1671	38.1671	7.3000e-004	7.0000e-004	38.3939
Congregate Care (Assisted Living)	2.73266	0.0295	0.2518	0.1072	1.6100e-003		0.0204	0.0204		0.0204	0.0204		321.4891	321.4891	6.1600e-003	5.8900e-003	323.3995
Enclosed Parking Structure	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
General Office Building	0.199282	2.1500e-003	0.0195	0.0164	1.2000e-004		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003		23.4450	23.4450	4.5000e-004	4.3000e-004	23.5843
Parking Lot	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
Retirement Community	3.81194	0.0411	0.3513	0.1495	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.4636	448.4636	8.6000e-003	8.2200e-003	451.1286
Strip Mall	0.127706	1.3800e-003	0.0125	0.0105	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0243	15.0243	2.9000e-004	2.8000e-004	15.1136
Total		**0.0776**	**0.6651**	**0.2963**	**4.2400e-003**		**0.0536**	**0.0536**		**0.0536**	**0.0536**		**846.5891**	**846.5891**	**0.0162**	**0.0155**	**851.6199**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Windsor May Update - Sonoma-San Francisco County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	8.0729	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246	0.0000	40.4906	40.4906	0.0387	0.0000	41.4584
Unmitigated	119.9357	2.7313	170.2130	0.2859		21.1059	21.1059		21.1059	21.1059	2,276.8702	1,048.4906	3,325.3608	3.1545	0.1609	3,452.1818

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	1.0056					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	111.8627	2.4730	147.7928	0.2847		20.9814	20.9814		20.9814	20.9814	2,276.8702	1,008.0000	3,284.8702	3.1158	0.1609	3,410.7234
Landscaping	0.6730	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246		40.4906	40.4906	0.0387		41.4584
Total	**119.9357**	**2.7313**	**170.2130**	**0.2859**		**21.1059**	**21.1059**		**21.1059**	**21.1059**	**2,276.8702**	**1,048.4906**	**3,325.3607**	**3.1545**	**0.1609**	**3,452.1818**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.0056					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.6730	0.2584	22.4202	1.1900e-003		0.1246	0.1246		0.1246	0.1246		40.4906	40.4906	0.0387		41.4584
Total	**8.0729**	**0.2584**	**22.4202**	**1.1900e-003**		**0.1246**	**0.1246**		**0.1246**	**0.1246**	**0.0000**	**40.4906**	**40.4906**	**0.0387**	**0.0000**	**41.4584**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

Appendix B

Biological Resources Assessment and Arborist Report

BIOLOGICAL RESOURCES ANALYSIS
CLEARWATER AT WINDSOR
TOWN OF WINDSOR, CALIFORNIA

June 1, 2021

Prepared for

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(At Back of Report)

Figure 1. Regional Map of the Clearwater at Windsor Project Site.

Figure 2. Clearwater at Windsor Project Site Location. USGS Healdsburg, California 7.5 Minute Quadrangle Map

Figure 3. Aerial Photograph of the Clearwater at Windsor Project Site.

Figure 4. Known CNDDB Records for Special-Status Plant Species Within 3 Miles of the Clearwater at Windsor Project Site.

Figure 5. Known CNDDB Records for Special-Status Plant Species on the Clearwater at Windsor Project Site.

Figure 6. *Blennosperma bakeri* Core and Management Areas (USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site.

Figure 7. *Lasthenia burkei* Core and Management Areas (USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site.

Figure 8. *Limnanthes vinculans* Core and Management Areas (USFWS 2016) in the Vicinity of Clearwater at Windsor Project Site.

Figure 9. Known CNDDB Records for Special-Status Wildlife Species Within 3 Miles of the Clearwater at Windsor Project Site.

Figure 10. USFWS Critical Habitat in the Vicinity of the Clearwater at Windsor Project Site.

Figure 11. Santa Rosa Plain Conservation Strategy Map

Figure 12. California Tiger Salamander Core and Management Areas (USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site.

TABLES
(At Back of Report)

Table 1. Plant Species Observed on the Clearwater at Windsor Project Site.

Table 2. Wildlife Species Observed on the Clearwater at Windsor Project Site.

Table 3. Special-Status Plant Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site.

Table 4. Special-Status Wildlife Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site.

SHEETS
(At Back of Report)

Sheet 1. Re-Verified Wetland Delineation Map. Lands of Vicini Project Site, Windsor, California.

ATTACHMENTS
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Attachment A. Environmental Impacts Exhibit. Clearwater at Windsor. Town of Windsor. BKF. May 2021.

1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resources analysis for the proposed Clearwater at Windsor project located in the Town of Windsor, California (the "project site") (Figures 1, 2 and 3). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from construction of the Clearwater at Windsor project (the project) (Attachment A).

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society. Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFW.

This biological resources analysis also provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources. Whenever possible, upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regs §§ 15000 et seq). Accordingly, this report is suitable for review and inclusion in any review being conducted by the Town of Windsor for the proposed project pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The project site is located directly south of Shiloh Road in Windsor, California, directly to the east of the Shiloh Road offramp from Highway 101. Highway 101 is located south-southwest of the freeway offramp, with a strip of ruderal (weedy) herbaceous vegetation lying in between the offramp and the project site. Pruitt Creek, an intermittent creek (Figure 2), runs within the project site along its southern boundary. Vineyards are located south of Pruitt Creek, outside the project site. Pasturelands are located to the east of the project site. A shopping center is located directly north of the project site on the north side of Shiloh Road at Hembree Lane.

3. PROPOSED PROJECT

Per the Shiloh Road Vision Plan, The Town of Windsor envisions a uniquely designed village that does not compete with Downtown Windsor and offers a variety of mixed uses, housing diversity, a secondary circulation system and open space. The subject property is designed as a high-end, mixed-use village with commercial buildings designed on Shiloh in accordance with the Shiloh Vision Plan, including approximately 30,000 square feet of neighborhood serving retail and office uses, residential apartments, as well as outdoor dining and exercise areas. The village is further enhanced with extensive landscaping, pathway connectivity, screened parking and community arbors, boardwalks, and walking trails. The project is a gateway project and its architectural design, program and building layout has been designed to create a special sense of place and belonging. It is intended to complement the Town of Windsor while providing much needed senior housing, residential apartments (256 altogether) and daily-need commercial

services to the adjacent community. There are five commercial buildings within the project, four fronting Shiloh Road, providing a mixed-use of services, including retail, restaurant and office space with ten apartment units on the 2nd floor, open space courtyards and walking trails, and one senior living building. A roadway is proposed to extend from the intersection of Hembree and Shiloh, eastward through the site along the south side of the commercial buildings, turning south along the neighboring property boundary. Parking is provided onsite, 371 spaces in total, to meet all proposed residential and commercial uses in compliance with the Town of Windsor requirements. Pedestrian circulation is a priority throughout the site. A walking path for residents and employees includes a viewing deck over a native landscaped bio-retention area.

Subdivision of the site is required to accommodate ownership interests and related financing requirements. Great attention has focused on preserving and enhancing the natural elements of the site and surroundings, including protection of existing healthy valley oak trees adjacent to the wetlands and proposing attractive craftsman-style buildings at a scale, mass and placement that respects immediately adjacent Pruitt Creek and the seasonal wetlands while also appreciating the Mayacamas mountains beyond.

Pruitt Creek will be improved significantly along the southern border to increase the creek's hydraulic capacity. Increasing the creek's hydraulic capacity will prevent it from spilling over its banks and flooding Highway 101 and the upstream residential properties as it does now on occasion. Creek alignment alternatives were discussed with Sonoma Water, our local flood control authority, as well as the Regional Water Quality Control Board during the early stages of site planning. The preferred design for both agencies entailed installing a new creek channel with greater capacity as reflected in the current design to improve creek hydraulics (Attachment A).

4. ANALYSIS METHODS

M&A biologists have an extensive history on this project site, having conducted numerous biological surveys over many years. In addition to conducting surveys for different significant and sensitive biological resources, M&A conducted literature research to determine what significant and sensitive resources have been recorded in the area. M&A researched the most recent version of CDFW's Natural Diversity Database (CNDDB) (RareFind 5 application) (CNDDB 2021), the application for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within an area of effect. Further discussion of surveys conducted onsite to date is provided below.

4.1 Baseline Survey and Wetland Delineation

M&A has conducted numerous surveys on the project site. The first surveys were conducted in January 2008, when M&A's Principal Biologist Mr. Geoff Monk and M&A's Senior Biologist, Mr. Geoff Thomas conducted site surveys to examine the extent of evident hydrology (e.g., inundation/saturation areas) in preparation for wetland delineation work. At this time, M&A biologists walked the entire site noting saturation and inundation conditions, and all wildlife and plant species observed. In March and April, 2008, Mr. Monk and Ms. Hope Kingma conducted a wetland delineation on the project site. This delineation was verified by the Corps. On September

11, 2012, M&A biologists Ms. Kingma and Mr. Tim O'Donnell conducted a wetland delineation to re-verify the Corps' previously verified wetland delineation. The 2012 Corps map, was a Preliminary Jurisdictional Determination, and remains valid today.

4.2 Special-Status Plant Surveys

M&A conducted three years of special-status plant surveys on the project site. Two years of surveys are required in accordance with the Santa Rosa Plain guidelines (USFWS 2005). The first year of surveys was conducted by M&A botanist, Ms. Stephanie Tornberg on March 20, April 9, and June 18, 2008. In 2012, a second year of special-status plant surveys was conducted by Ms. Sarah Lynch on April 11, May 9, and June 11, 2012. In 2016, Ms. Lynch conducted three additional surveys in April, May and June. Prior to each special-status plant survey, a visit was made to a local reference site to verify that the target special-status plant species were in bloom. The Alton Lane Conservation site was used as the reference site and was visited the day of or the day before each special status plant survey.

4.3 Riparian Planting Monitoring

A *Riparian Mitigation and Restoration Plan* was prepared by M&A on March 1, 2010 to compensate for unauthorized bridge crossing improvements that were installed at the top-of-banks of Pruitt Creek. A bridge crossing was previously located at the location where an existing bridge was improved some time prior to 2003. M&A biologists monitored the installed riparian plantings and surveyed the entire project site a minimum of once a year from 2011 to 2015.

4.4 Updated Baseline Surveys

M&A biologists conducted a site survey on April 9, 2019 to record biological resources and update project species lists (plants and wildlife). The entire project site was walked on foot. Then, in 2021, M&A biologists conducted a general survey of the project site on February 23, to record biological resources, update species lists and to continue to assess the status of likely resource agency regulated areas on the project site.

M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species. The results of our literature research and field studies are provided in the sections below.

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

5.1 Topography and Hydrology

The site is mostly flat with gradual topography. The majority of the project site appears to drain towards to the west, while the southern portion of the site appears to drain to the south towards Pruitt Creek. Pruitt Creek is an intermittent creek that forms the southern project site boundary. This incised creek flows from east to west, and onto the project site under a bridge that occurs in the southeastern corner of the site. The incised channel has an average width of 25 feet between the ordinary high water marks (OHWM). This creek exits the project site in the southwestern corner where it flows under Highway 101. This creek meanders to the northwest until its confluence with Pool Creek. Pool Creek flows to Windsor Creek, which flows to Mark West

Creek that eventually flows to the Russian River, approximately 6 miles to the southwest of the project site.

There are several topographic low areas along the creek which appear to hold water when high flows exceed the creek's capacity and water overflows onto the adjacent floodplain. In addition, there appears to be a remnant alignment of the creek that may have once been an oxbow feature, which no longer has evidence of hydrology and has reverted to upland conditions.

The project site is also characterized by some large and small topographic low areas that receive water from direct precipitation and additional contributions from surface sheet flows from the surrounding landscape. These features hold water or remain saturated long enough to satisfy the wetland hydrology criteria and have been classified as wetlands on the Corps' Preliminary Jurisdictional Determination map (Sheet 1, attached).

5.2 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Table 2 is a list of wildlife species observed on the project site. Nomenclature for wildlife follows CDFW's *Complete list of amphibian, reptile, bird, and mammal species in California* (2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

5.2.1 Ruderal Herbaceous

The open areas on the project site are dominated by ruderal (weedy) herbaceous plants. Until the early 1980s the project site was used as a horse pasture. In the mid-1980s, the property was converted to a combination of hay cropping and livestock pasture. After 1989, hay crop production was the primary activity of this site, thus the weedy nature of the herbaceous vegetation. The herbaceous vegetation is dominated by introduced grasses and forbs (i.e., broad-leaved plants) that have out-competed and replaced the original native grassland community. Ruderal vegetation persists where there is disturbance (such as discing, intensive grazing).

Dominant non-native grass and forb species on the project site include Italian ryegrass (*Festuca perennis*), paradox canary-grass (*Phalaris paradoxa*), common vetch (*Vicia sativa*), purple vetch (*Vicia benghalensis*), mayweed (*Anthemis cotula*), common dandelion (*Taraxacum officinale*) and bindweed *(Convolvulus arvensis*). Other common non-native herbaceous species include, bristly ox-tongue (*Helminthotheca echioides*), salsify (*Tragopogon porrifolius*), wild radish (*Raphanus sativus*), California burclover (*Medicago polymorpha*), prickly lettuce (*Lactuca serriola*), chicory (*Cichorium intybus*), smooth cat's ear (*Hypochaeris glabra*), charlock (*Sinapis arvensis*) and slender wild oats (*Avena barbata*). Native species also occur in this plant community; however, their total percent cover and frequency is much lower than the non-native species present. Native herbaceous species found in the grassland community include pale-yellow hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), miniature lupine (*Lupinus bicolor*), summer cottonweed (*Epilobium brachycarpum*), turkey mullein (*Croton setigerus*), blue-eyed

grass (*Sisyrinchium bellum*), bed straw (*Galium aparine*) and yellow owl's clover (*Triphysaria versicolor* ssp. *faucibarbata*).

Animals observed or expected to occur in ruderal herbaceous habitats are typically those species adapted to human disturbance such as the following species observed on the project site: European Starling (*Sturnus vulgari*s), Northern Flicker (*Colaptes auratus*), Turkey Vulture (*Cathartes aura*), Killdeer (*Charadrius vociferus*), Black Phoebe (*Sayornis nigricans*), American Crow (*Corvus brachyrhynchos*), and Brewer's blackbird (*Euphagus cyanocephalus*).

Within the ruderal herbaceous community on the western portion of the project site are eight mature valley oak trees (*Quercus lobata*). Oak trees are known to provide habitat for a variety of wildlife species. Oak acorns, leaves, wood, and sap are sustenance for a myriad of insects, birds, and mammals including Acorn Woodpecker (*Melanerpes formicivorus*), American Robin (*Turdus migratorius*), and Audubon's Yellow-rumped Warbler *(Setophaga coronata*), all of which were observed onsite. Western gray squirrels (*Sciurus griseus*) forage for acorns in the oak trees. Bats can live in the tree cavities or underneath the bark. A variety of birds will nest in the oak trees. Finally, the oak trees provide perches for raptors (birds of prey) and stop over habitat for migrating song birds such as warblers.

5.2.2 Seasonal Wetland

Seasonal wetlands on the project site are dominated by hydrophytic (i.e., wetland) vegetation such as Italian ryegrass and Mediterranean barley (*Hordeum marinum gussoneanum*), with other hydrophytic vegetation occurring at lower percentage of cover such as curly dock (*Rumex crispus*), buttercups (*Ranunculus muricatus*, *R. occidentalis* var. *occidentalis*), small quaking grass (*Briza minor*), hyssop loosestrife (*Lythrum hyssopifolium*), and toad rush (*Juncus bufonius* var. *bufonius*).The seasonal wetlands on the project site also support some vernal pool-associated species such as Douglas' meadowfoam (*Limnanthes douglasii* ssp. *nivea*), downingia (*Downingia concolor* var. *concolor*), bracted popcornflower (*Plagiobothrys bracteatus*), coyote thistle (*Eryngium aristulatum*), flowering quillwort (*Triglochin scilloides*), and annual semaphore grass (*Pleuropogon californicus* var. *californicus*). Historically some of the seasonal wetlands supported Burke's goldfields (*Lasthenia burkei*), a federally and state-listed endangered plant species; however, this plant has not been observed onsite since 1996 (C. Patterson, consulting botanist, pers. comm. with G. Monk of M&A).

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Sierran tree frogs (*Pseudacris sierra*) complete their aquatic life cycle in the project site's wetlands, as do a number of aquatic invertebrates including insects. The seasonal wetlands onsite do not persist long enough for amphibians that require a longer hydroperiod to complete their aquatic life cycle; for example, the California tiger salamander (*Ambystoma californiense*) requires inundated conditions through the month of May in order for the larvae to metamorphose into its terrestrial salamander life stage. This persistent aquatic habitat is not provided on the project site.

The majority of the project site's seasonal wetlands will be placed into a 12.55-acre seasonal wetland preserve within a Conservation Easement that will be established as part of the proposed project (Attachment A). Pruitt Creek is an intermittent creek that forms the southern project site

boundary and a portion of Pruitt Creek would also be placed into a Conservation Easement within this wetland preserve to protect the creek. The Conservation Easement would be granted to a qualified Land Conservator who would also be provided with an operational budget allowing for the in-perpetuity implementation of a long term wetland preserve management plan (LTMP) that would become the responsible party for implementation of the LTMP.

5.2.3 PRUITT CREEK DRAINAGE

Pruitt Creek is an intermittent creek that runs after significant rainfall events and continues to run into the summer. It is subject to large storm surge flows. This creek is typically dry by late-summer. Emergent vegetation characteristic of stream edges and drainages is found along the water's edge of the incised channel bed of Pruitt Creek. Plant species observed in this plant community onsite include American water plantain (*Alisma triviale*), creeping spikerush (*Eleocharis macrostachya*), pennyroyal (*Mentha pulegium*), tall flatsedge (*Cyperus eragrostis*), and hard-stem tule (*Schoenoplectus acutus* ssp. *occidentalis*). The banks of the creek are dominated by ruderal (weedy), non-native vegetation such as Himalayan blackberry (*Rubus armeniacus*) and ripgut grass (*Bromus diandrus*). Some native plants, blue wildrye (*Elymus glaucus*), and common rush (*Juncus patens*), are also dominant along the channel. Non-native species found along the banks at a lesser percent cover are fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), geranium (*Geranium dissectum*), and prickly sow-thistle (*Sonchus asper*).

A riparian vegetation community is also growing along this creek and it includes both volunteer, naturalized trees such as willows (*Salix exigua, S. laevigata, S. lasiolepis*) as well as planted trees as part of a riparian planting plan that was completed a decade ago. Riparian trees growing along Pruitt Creek are sapling valley oaks and California buckeye (*Aesculus californica*) that were planted as part of a riparian planting plan. Native California rose (*Rosa californica*) was also planted along this creek channel and is well-represented at the shrub layer. Overall tree canopy is approximately 30 percent cover, leaving an open, sunny channel.

The dense patches of Himalayan blackberry within Pruitt Creek provide cover for a variety of wildlife species including California Quail (*Callipepla californica*), migratory birds, and locally abundant birds. The sapling oak trees and the willow trees provide habitat for insects which in turn provide a food source for birds such as migrating warblers and flycatchers moving through the area. Other wildlife species observed along Pruitt Creek include Sierran treefrog and mosquito fish (*Gambusia affinis*), though these fish likely do not persist as this creek dries down completely in the summer months.

5.3 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible

to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

During construction, wildlife movement through the project area will be temporarily affected. To best prevent mortality of common wildlife species known to frequent the project area, ERTEC wildlife exclusion fencing will be installed around the active work areas to prevent wildlife from entering the work areas from adjacent areas such as Pruitt Creek. The only true wildlife movement corridor on this project site is Pruitt Creek. Pruitt Creek's capacity to function as a wildlife corridor will be impacted by the proposed project activities temporarily, as the proposed project includes shifting the flowline and flood storage capacity of this creek at the western reach of this drainage on the project site. Best Management Practices will be established and will remain throughout the duration of the construction to ensure that there are no impacts to wildlife resulting from proposed project activities. *The project as currently proposed would only result in temporary impacts to wildlife movement through the work area during construction, but will not adversely impact wildlife movement corridors once the project is constructed.*

6. SPECIAL-STATUS SPECIES DEFINITION

6.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a

case by case basis due to local significance or recent biological information (more on CNPS Rank species below);

- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFW (2021);

- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

- Bat Species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "RED OR HIGH." This priority is justified by the WBWG as follows: "Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFW prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an "Inventory" of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the Fish and Game Code and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern and are reviewed by CDFW and maintained on "watch lists."

Additionally, in 2006 CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- .2 is "fairly endangered in California (20-80% of occurrences threatened)";
- .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

6.2 Potential Special-Status Plant Species on the Project Site

Figure 4 provides a graphical illustration of the known CNDDB records for special-status plant species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. According to the CNDDB, a total of eleven (11) special-status plant species are known to occur in the region of the project site (Table 3). Of the eleven plants listed in the CNDDB for the project vicinity, six of these special-status plants require specialized habitats which are not present on the project site, including coastal prairie, coastal scrub, chaparral, and coniferous forest. None of these six plants have been noted on the project site during multiple years of surveys, including five years of protocol special-status plant surveys: three years by M&A (2008, 2012, 2016) following the Santa Rosa Plain

survey guidelines (USFWS 2005), and two years of surveys by Mr. Charlie Patterson (in 1995 and 1996).

As illustrated by Figure 5, Baker's navarretia (*Navarretia leucocephala bakeri*), pale-yellow hayfield tarplant (*Hemizonia congesta congesta*) and Burke's goldfields (*Lasthenia burkei*) all have historical occurrences on the project site. Based on the *Recovery Plan for the Santa Rosa Plain* (USFWS 2016), the project site is in the *Blennosperma bakeri* (Sonoma sunshine), *Lasthenia burkei* (Burke's goldfields), and *Limnanthes vinculans* (Sebastopol meadowfoam) "Windsor Core Area" (Figures 6, 7 and 8). However, of these three federally and state-listed plant species, only Burke's goldfields is historically known from the project site.

Burke's goldfields was historically present on the project site in the 1980s (C. Patterson, consulting botanist, pers. comm. with G. Monk of M&A and historic aerial photo records) and the project site is located in an area of the Santa Rosa Plain that is characterized in the USFWS' Conservation Strategy map as "*Presence of California tiger salamander is not likely but mitigation for listed plants may be required*." Thus, while no federally listed or state-listed plants have been identified in recent years on the project site, mitigation for the project's impact on Burke's goldfields "suitable habitat" will be required (as discussed and agreed upon with USFWS; see the FESA section of this report and the Impacts and Mitigation Measures Section). Mitigation for the project's impact on this suitable habitat is further discussed in the Impact Assessment and Proposed Mitigation Measures section of this report. Below we discuss the three federally and state-listed plants known from the Santa Rosa Plain, plus those plants that were historically recorded on the project site.

6.2.1 SONOMA SUNSHINE (*BLENNOSPERMA BAKERI*)

Sonoma sunshine is a federal and state-listed endangered plant species protected pursuant to the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) respectively. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site within the *Blennosperma bakeri* Windsor Core Area (Figure 6). This annual member of the sunflower family is found in vernal pools and grassland habitats in the Santa Rosa Plain and from the Sonoma area. Sonoma sunshine flowers from March through May. It is threatened by urbanization, grazing and agriculture.

The closest CNDDB record for Sonoma sunshine is located 0.9-mile southwest of the project site (Occurrence No. 32). *Sonoma sunshine plants were not detected during appropriately timed rare plant surveys conducted over multiple years (5 years of protocol surveys). As such, there would be no take or direct impacts to this special-status plant species from the proposed project.* However, pursuant to the FESA, the USFWS regulates impacts to "suitable habitats" of listed vernal pool plants in the Santa Rosa Plain. In the Santa Rosa Plain, most seasonal wetlands are regarded by the USFWS as "suitable habitat" for listed vernal pool plants known from the Santa Rosa Plain. Accordingly, pursuant to the FESA, the Corps will initiate Section 7 consultation with the USFWS prior to authorizing a Clean Water Act permit for the proposed project that would allow seasonal wetlands to be removed from the project site. As part of the USFWS/Corps Section 7 consultation, the USFWS can be expected to prepare a Biological Opinion for the Corps with conditions that require the Applicant to provide mitigation for impacts to suitable federally listed vernal plant habitat. The Corps, in turn, will incorporate the USFWS' conditions

of the Biological Opinion into the conditions of any authorized Clean Water Act permit. *As such, pursuant to the CEQA, the proposed project will result in potentially significant impacts to federally and state-listed vernal pool plant habitats.* Mitigation would reduce these impacts to a level regarded as less than significant. Please also review sections of this report titled: Federal Endangered Species Act and Impact Assessment and Proposed Mitigation Measures below.

6.2.2 BURKE'S GOLDFIELDS (*LASTHENIA BURKEI*)

Burke's goldfields is a federally and state-listed endangered species protected pursuant to the FESA and the CESA, respectively. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site within the *Lasthenia burkei* Windsor Core Area (Figure 7).

This small, slender annual member of the sunflower family is found in meadows, seeps, and vernal pools. The yellow flowers of the Burke's goldfields bloom from April through June. This species is known only from southern portions of Lake and Mendocino counties, the western portion of Napa County, and from northeastern Sonoma County (the Santa Rosa Plain). Historically, 39 colonies were known from the Santa Rosa Plain, two colonies were known from Lake County, and one colony was known in Mendocino County. The occurrence in Mendocino County is most likely extirpated. From north to south in the Santa Rosa Plain, the species occurs from north of the community of Windsor to east of the city of Sebastopol. It is threatened by agriculture, urbanization, development, grazing, road widening, road maintenance, and non-native plants.

M&A has never observed this plant on the project site, but Burke's goldfields was known to occur on the project site in the 1980s. A report titled: *Phase 1 Final Report, Santa Rosa Plain Vernal Pool, Ecosystem Preservation Plan, Prepared for the Santa Rosa, Plain Vernal Pool Task Force, June 30, 1995,* reports Burke's goldfields on the project site (Guggolz et. al., 1995). While the project site historically supported Burke's goldfields and Baker's navarretia (*Navarretia leucocephala bakeri*), the latter species is a CNPS ranked 1B.1 species solely protected pursuant to the CEQA, neither Burke's goldfields or Baker's navarretia have been found on the project site since 1989 (G. Monk pers. comm. with Mr. Charlie Patterson, consulting botanist).

Surveys conducted on the project site by North Fork Associates, Mr. Charlie Patterson, and Golden Bear Biostudies in the late-1990s, 2002, 2003, and 2005 did not find either of these species. In addition, these species were not found during the special-status plant surveys conducted by M&A in 2008 and again in 2012 and 2016. These surveys all indicate that these two species are no longer present on the project site, likely having been extirpated by agricultural practices. Therefore, during a meeting on June 4, 2019, between the applicant team and the USFWS, the USFWS determined that the formerly known occupied pools and the other wetlands onsite are currently regarded as *"suitable habitat" for Burke's goldfields* (Ryan Olah, USFWS, pers. comm. with G. Monk of M&A, June 4, 2019). Thus, mitigation for impacts to Burke's goldfields "suitable habitat" would be at the 1.5:1 mitigation ratio as opposed to the 3:1 "occupied habitat" ratio pursuant to the FESA as the USFWS regulates impacts to "suitable habitats" of listed vernal pool plants in the Santa Rosa Plain. Accordingly, pursuant to the FESA, the Corps will initiate Section 7 consultation with the USFWS prior to authorizing a Clean Water

Act permit for the proposed project that would allow seasonal wetlands to be removed from the project site. As part of the USFWS/Corps Section 7 consultation, the USFWS can be expected to prepare a Biological Opinion for the Corps with conditions that require the Applicant to provide mitigation for impacts to suitable federally listed vernal pool plant habitat. The Corps, in turn, will incorporate the USFWS' conditions of the Biological Opinion into the conditions of any authorized Clean Water Act permit. *As such, pursuant to the CEQA, the proposed project will result in significant impacts to federally and state-listed vernal pool plant habitats on the Santa Rosa Plain.* Mitigation would reduce these impacts to a level regarded as less than significant. Please also review sections of this report titled: Federal Endangered Species Act and Impact Assessment and Proposed Mitigation Measures, below.

6.2.3 SEBASTOPOL MEADOWFOAM (*LIMNANTHES VINCULANS*)

Sebastopol meadowfoam is a federally and state-listed endangered species. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site within the *Limnanthes vinculans* Windsor Management Area (Figure 8).

This annual member of the meadowfoam family blooms April through May, and is found in meadows and seeps, seasonally wet grasslands, and vernal pools. Although the first leaves are narrow and undivided, leaves on the mature plant have three to five undivided leaflets along each side of a long stalk (petiole). The shape of the leaves distinguishes Sebastopol meadowfoam from other members of the *Limnanthes* genus. It is threatened by urbanization, agriculture, grazing, non-native plants, and vehicles. The only known natural occurrences of this species have been recorded in Sonoma County.

The CNDDB has a 1990 record for Sebastopol meadowfoam located 0.9-mile southwest of the project site (Occurrence No. 50). Prior surveys conducted on the project site by North Fork Associates, Mr. Charlie Patterson, and Golden Bear Biostudies in 1989, 1995, 1996, 2002, 2003, and 2005 did not find this species. In addition, this species was not found during the special-status plant surveys conducted by M&A in 2008 and again in 2012 and 2016.

Since Sebastopol meadowfoam is not historically known from the project site and was not found during years of appropriately timed surveys, no impacts to this species are expected from the proposed project. However, pursuant to the FESA, the USFWS regulates impacts to "suitable habitats" of listed vernal pool plants in the Santa Rosa Plain. In the Santa Rosa Plain, most seasonal wetlands are regarded by the USFWS as "suitable habitat" for listed vernal pool plants known from the Santa Rosa Plain. Accordingly, the Corps will initiate Section 7 consultation with the USFWS prior to authorizing a Clean Water Act permit for the proposed project that would allow seasonal wetlands to be removed from the project site. As part of the USFWS/Corps Section 7 consultation, the USFWS can be expected to prepare a Biological Opinion for the Corps with conditions that require the Applicant to provide mitigation for impacts to suitable federally listed vernal pool plant habitat. The Corps, in turn, will incorporate the USFWS' conditions of the Biological Opinion into the conditions of any authorized Clean Water Act permit. *As such, pursuant to the CEQA the proposed project will result in significant impacts to suitable habitat for federally and state-listed vernal pool plants known to occur in seasonal wetlands in the Santa Rosa Plain.* Mitigation would reduce these impacts to a level regarded as

less than significant. Please also review sections of this report titled: Federal Endangered Species Act and Impact Assessment and Proposed Mitigation Measures, below.

6.2.4 PALE-YELLOW HAYFIELD TARPLANT

Pale-yellow hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) (formerly *H. c. leucocephala*) is a CNPS Rank 1B.2 species. It has no state or federal status. This annual member of the sunflower family is found in valley and foothill grassland, and sometimes roadsides. Pale-yellow hayfield tarplant blooms between April and November. It is threatened by agriculture and development, including road construction. This plant has been observed on the project site during multiple years of field surveys. Hayfield tarplant was documented in both the 1996 Botanical Survey Report by Patterson and the 2008 Special-Status Plant First Year Survey Report by M&A. At those times (1996 and 2008) this plant did not have any special-status designation. In 2012, *The Jepson Manual, Second Edition* was published and this species was re-classified as pale-yellow hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) which is a CNPS List 1B.2 plant. As pale-yellow hayfield tarplant has no state or federal status, impacts to this species are only considered significant pursuant to CEQA. *As such, pursuant to the CEQA the proposed project will result in potentially significant impacts to this special-status plant species.* The proposed preservation of 12.55 acres of seasonal wetlands and upland grassland habitat on the project site should provide sufficient compensation for impacts to this CNPS Rank 1B.2 species. This mitigation would reduce project impacts to a level regarded as less than significant.

6.2.1 BAKER'S NAVARRETIA

Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*) is a CNPS Rank 1B.1 species. It has no state or federal status. This annual member of the phlox family is found in cismontane woodland, lower montane coniferous forest, meadows and seeps, vernal pools and valley and foothill grasslands. Baker's navarretia blooms small white flowers from April to July. It is threatened by development, habitat alteration, road construction, and agriculture. According to the CNDDB record for this plant it was observed on the project site in 1989 (Occurrence No. 5); it has not been observed since. Baker's navarretia was not observed onsite during multiple years of surveys conducted between 1995 and 2016 and is believed to be extirpated. No impacts to this special-status plant species are anticipated from the proposed project.

6.3 Potential Special-Status Wildlife Species on the Project Site

Figure 9 provides a graphical illustration of the known CNDDB records for special-status wildlife species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status animals have ever been mapped on or adjacent to the project site. However, a total of seven (7) special-status wildlife species are known to occur in the region of the project site (Table 4). Of these seven species, Pruitt Creek on the southern border of the project site provides potential habitat for one of them, the western pond turtle (*Emys marmorata*), which is further discussed below. Steelhead Central California Coast DPS (*Oncorhynchus mykiss irideus*) would likely not be present in Pruitt Creek due to the intermittent nature of this creek; however, since the project site lies within steelhead Critical Habitat, this fish is discussed below. The western burrowing owl (*Athene cunicularia hypugaea*), though unlikely to occur on the project site due to an absence of suitable habitat and nesting records in the county, is also discussed below since this is a CDFW

focal species for Sonoma County projects. The remaining species, foothill yellow-legged frog (*Rana boylii*), red-bellied newt (*Taricha rivularis*), Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), and Coho salmon (*Oncorhynchus kisutch*) are not expected on the project site due to an absence of suitable habitat and are dismissed in Table 4.

6.3.1 STEELHEAD CENTRAL CALIFORNIA COAST DPS

The project site includes a section of Pruitt Creek which is designated Critical Habitat of the Central California Coast Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss irideus*) (Figure 10). This DPS is federally listed as threatened. It is not state listed and therefore is not protected under CESA. Steelhead are the anadromous form (i.e., fish species born in a stream that migrate to the ocean for their adult phase) of rainbow trout, a salmonid species native to western North America and the Pacific Coast of Asia. Steelhead are similar to some Pacific salmon in their life cycle and ecological requirements. They are born in freshwater streams, where they spend their first 1-3 years of life. They then emigrate to the ocean where most of their growth occurs. After spending between one to four years maturing in the ocean, steelhead return to their native freshwater stream to spawn. Unlike Pacific salmon, steelhead do not necessarily die after spawning, and are able to spawn more than once.

In California, most steelhead spawn from December through April in small streams and tributaries where cool, well oxygenated water is available year round. The female selects a site in areas with gravel substrate where there is good flow through the gravel. She then digs a nest, called a redd, and deposits eggs. The male then fertilizes the eggs. The eggs are covered when the female excavates another redd just upstream. The length of time it takes for eggs to hatch is primarily dependent on water temperature. In hatcheries, steelhead eggs have hatched after 30 days at a temperature of 51° F. Generally, eggs hatch sooner in cooler waters, and take longer in warmer waters. If the temperature goes too high, eggs will not hatch at all. After hatching, the developing steelhead will remain in the gravel for between four and six weeks. During this time they obtain nutrients from a yolk sack attached to their body. When they emerge from the gravel, they are called fry, and are able to catch their own food. Newly emerged fry move to shallow, protected areas of the stream where they establish feeding areas that they defend. Most juveniles can be found in riffles, although larger ones will move to pools or deep runs (Flosi et al. 1998).

There are no known occurrences of steelhead in Pruitt Creek, though as mentioned previously, the creek is designated as Critical Habitat for the DPS of this species. Pruitt Creek dries seasonally, leaving many months of the year during which the creek is not suitable habitat for salmonids such as steelhead. Additionally, there are no pools or gravel-like substrates along the project site's reach of Pruitt Creek that provide good egg laying and fry rearing habitat. Thus, though it is possible that steelhead could move through Pruitt Creek during the winter periods when there are high flows, the proposed project would not impact steelhead because all work in and along the creek would take place in the summer months when the creek is dry. Though it is considered extremely unlikely that the proposed project will impact steelhead, since the project site is located within steelhead Critical Habitat it will be necessary during the Corps permitting process for the Corps to consult with the National Marine Fisheries Service (NMFS) via Section 7 of FESA to determine if this project will have any adverse effects on steelhead. As part of this process, M&A will prepare a Biological Assessment which will assist the Corps and the NMFS in the consultation process. M&A is nonetheless confident, given that the creek is intermittent,

that impacts to steelhead from the proposed project will be *less than significant pursuant to CEQA and mitigation is not warranted*.

6.3.2 WESTERN BURROWING OWL

The western burrowing owl is a California "species of special concern." Its nest, eggs, and young are also protected under California Fish and Game Code (§3503 and §3503.5). This owl has no special status.

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically California ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows or use man-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the entrances of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

One adult western burrowing owl was identified 1.5 miles west of the project site in 2017 (CNDDB Occurrence No. 2023) (Figure 9), and was presumed to be overwintering as it was detected in the same culvert two times during the 2017 winter season. There are several other winter records for the burrowing owl in Santa Rosa, specifically around the Charles M. Schultz airport and at the west Santa Rosa airport (former military airport) in several different years (eBird records). There are no nesting records in the Santa Rosa Plain and that is likely because this owl typically nests in California ground squirrel (*Otospermophilus beechyi*) burrows and there are none in the Santa Rosa Plain and there are very few in the hills around Windsor and Santa Rosa. One likely reason there are not California ground squirrels on the Santa Rosa Plain is the water table in much of the Santa Rosa Plain is too high to support this burrowing mammal. California ground squirrels are found in hilly terrain within the County but not on the Plain. Since there are no California ground squirrels on the project site, there is not suitable habitat for the burrowing owl to nest onsite. Thus, while there is a very slight possibility that this owl could be observed stopping over on the project site during the winter months, nesting onsite is unlikely. Accordingly, impacts to nesting western burrowing owl from project implementation are *less than significant pursuant to CEQA and mitigation is not warranted*.

6.3.3 WESTERN POND TURTLE

The western pond turtle (*Emys marmorata*) is a California "species of special concern" and thus is afforded the protections of CEQA. This turtle has no federal status. In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS' Sacramento Field Office and was told that they "hope to finish a 12-month finding in the fiscal year of 2021" (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). The USFWS' website says that the listing

status of this turtle is still "under review" (last checked May 19, 2021). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Lithobates catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

The closest occurrence of this species was from the spring and summer of 2010 (Occurrence No. 1219). Two adults were observed in Pool Creek at the Windsor Golf Club, which is approximately 0.8-mile west of the project site. Though this waterway does not have connectivity with Pruitt Creek, Pruitt Creek provides suitable habitat for basking western pond turtles as it has a rocky substrate and shelves that provide haul out opportunities. Thus, construction of the new reach of Pruitt Creek, where it will tie into the currently existing reach on both the up and downstream ends, may result in impacts to suitable western pond turtle aquatic habitat and potentially impact turtles that may be in the creek at the time of construction. Agricultural activities adjacent to the creek; however, may discourage upland nesting on the project site. *Accordingly, impacts to western pond turtle are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to a level regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.4 CALIFORNIA TIGER SALAMANDER

6.3.4.1 Legal status

The California tiger salamander Sonoma County "Distinct Population Segment" (DPS) is a federally listed endangered species. The project site is located within its known range. On August 31, 2011, the Final Rule on the Revised Designation of Critical Habitat for the Sonoma County DPS was published (76 FR 54346 54372) (USFWS 2011). Approximately 47,383 acres were designated as Critical Habitat. *The project site is located outside designated Critical Habitat* (Figure 10). On March 4, 2010, the California tiger salamander was also State-listed as a threatened species under the CESA.

6.3.4.2 Life History

California tiger salamanders occur in grasslands and open oak woodlands that provide suitable aestivation and/or breeding habitats. M&A has worked with populations that are almost at sea level (Catellus Site in the City of Fremont) to almost 2,900 feet above sea level (Kammerer Ranch, East Santa Clara County). California tiger salamanders spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during rainfall events typically in late October through December to migrate to breeding ponds where they lay eggs. After spending a up to a few weeks and sometimes longer in breeding ponds the adult salamanders then return to their subterranean over-summering refugia not to resurface until the following breeding season. Young hatch typically in February and March and metamorphose leaving natal ponds in search of subterranean refugia typically in late April and May.

6.3.4.3 Breeding/Larval Development Requirements

Deep, seasonal and sometimes perennial wetlands typically provide most of the breeding habitat used by California tiger salamanders. California tiger salamanders attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about three-quarters (¾) the diameter of a dime to the full diameter of a dime. Typically, seasonal breeding pools must hold water into the month of May to allow enough time for larvae to fully metamorphose. Pools that are 16 inches or deeper in the peak winter months usually will remain inundated long enough to provide good breeding conditions for California tiger salamanders. Optimal pools are typically deeper than 16 inches consistently in most winters. One reason deeper pools are generally better for larval development is because the water remains cooler. Shallow pools are warmed faster by the sun, evaporate more quickly becoming smaller and more prone to successful predation, and most importantly, warmer water carries less free oxygen which is necessary for California tiger salamander larvae to mature and metamorphose. With ample free oxygen in the water, California tiger salamander larvae are able to reach full metamorphosis even with partially to fully absorbed gills.

Shallow pools are not optimal California tiger salamander breeding sites. Pools that are as shallow as 10 to 12 inches may still attract breeding salamanders, but young do not often successfully metamorphose from such pools except in years exhibiting wet springs. In dry years, seasonal wetlands, especially shallower pools, may dry too early to allow enough time for

California tiger salamander larvae to successfully metamorphose. As pools dry down to very small areas of inundation, California tiger salamander larvae become concentrated and are particularly susceptible to predation. In Cotati, Mr. Monk observed drying pool predation of larvae by red-sided garter snakes (*Thamnophis sirtalis infernalis*). Similarly, ducks (various spp.) are often observed predating breeding pools. In duck-ravaged pools, larvae may be concentrated in deeper water or are found in areas along the pool margins were pools remain relatively deep and there is dense emergent vegetation. When pools dry too soon, desiccated California tiger salamander larvae can be found, but owing to scavengers usually disappear within a day or two.

With frequent rainfall events in March and April, or with infrequent but large late spring rainfall events, shallower pools can remain hydrated long enough to allow California tiger salamander larvae ample time to successfully metamorphose from shallower pools. Pools that dry and rehydrate multiple times over the winter do not provide the continuous hydration period required for successful metamorphosis of young.

6.3.4.4 Migration

Adult California tiger salamanders have been observed up to 2,092 meters (1.3 miles) from breeding ponds (USFWS 2004). As such, unobstructed migration corridors are an important component of California tiger salamander habitat. In Sonoma County, Mr. G. Monk has been conducting California tiger salamander surveys since 1989. It is M&A's direct experience that California tiger salamanders move to their breeding pools at night during the first heavy, typically warmer, rainfall events of the year, usually in late-October into early December. In most instances, early movements from over-summering refugia to breeding sites do not occur until it has been raining continuously for several days, but occasionally errant salamanders may move to breeding pools during light rainfall events too. Typically, movements of California tiger salamander occur when temperatures are above 48° F.

A primary factor encouraging larger movements of California tiger salamanders is continuous or nearly continuous rainfall over many days. Resultant widespread ground saturation that otherwise floods over-summering refugia can result in relatively large numbers of California tiger salamanders leaving their refugia in search of breeding sites over a one- or two-night period (as observed by G. Monk and S. Lynch during numerous studies). In addition to pitfall trapping results that demonstrate such movements, often these focused movement periods are evident in breeding pools where up to several size classes of larvae can be identified later in the spring, each size class likely being representative of a focused movement period for adult breeding salamanders.

6.3.4.5 Closest Known California Tiger Salamander Breeding Population

The closest known CNDDB record (CNDDB Occurrence No. 360) for the California tiger salamander to the project site is located approximately 3.3 miles to the south at the Alton Lane Mitigation Site. This record resulted from the translocation of California tiger salamander larvae from the Wright Conservation Site to the man-made pools at the Alton Lane Mitigation Site circa 1990-91. Alton Lane Mitigation Site is a former vineyard that was restored into a vernal pool complex in 1989-1992. California tiger salamander adults were also translocated to the Alton Lane Mitigation Site by CDFW (then CDFG) from an M&A salvage project in Cotati

immediately west of Highway 101 and north of Highway 116. The distance of 3.3 miles is much greater than the recorded distance of 1.3 miles that a California tiger salamander is known to migrate.

6.3.4.6 Assessment of Project Impacts on California tiger salamander

The project site is located in an area of the Santa Rosa Plain that is listed at "*Presence of California tiger salamander is not likely but mitigation for listed plants may be required*." Santa Rosa Plain Conservation Strategy Map (USFWS 2007). On June 4, 2019, M&A and the project applicant team met with the USFWS in their offices to discuss the proposed project. In that meeting, Mr. Ryan Olah, Chief of the USFWS' Coast, Bay, Delta Branch stated it was likely that the USFWS would not require mitigation for project impacts to California tiger salamander. This statement is likely based on several factors: (1) that the project site is located outside of designated Critical Habitat; (2) the Conservation Strategy categorizes the project site as occurring in an area of Sonoma County where "presence of the California tiger salamander is not likely"; and (3) the seasonal wetlands on the project site do not hold water long enough to support California tiger salamander larval development through metamorphosis. M&A has conducted numerous surveys on the project site in the months of March, April and May, months when California tiger salamander larvae, should they be present, would be apparent in the inundated wetlands. None has ever been identified onsite. *Therefore, based on all of the above, the project would not impact the California tiger salamander and mitigation should not be warranted.*

7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law its relevance to the proposed project is discussed.

7.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below,

Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is "reasonably certain to occur."

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species (other than a plant species) is necessary to complete an otherwise lawful activity, this triggers the need to obtain an "incidental take permit" either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency such as the Corps), or through Section 10 of FESA which requires preparation of a Habitat Conservation Plan (HCP) (for state and local agencies, or individuals, and projects without a federal "nexus"; for example, projects that do not need a Corps permit).

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of Critical Habitat for listed species. Critical Habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the federal "action agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the project "may affect" a listed

species or Critical Habitat. If an action is likely to adversely affect a listed species or designated Critical Habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated Critical Habitat. If the USFWS/NMFS prepares a Biological Opinion it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of Critical Habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, and counties that are proposing a project that might result in incidental take, Section 10 provides the mechanism for obtaining that take authorization. Under Section 10 of FESA, for the applicant to obtain an "incidental take permit," the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

7.1.1 Responsible Agency

FESA gives regulatory authority to the USFWS for federally listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally listed marine mammals and anadromous fish.

7.1.2 Applicability to the Proposed Project

The project site falls within the geographic region called the Santa Rosa Plain by the USFWS and the Corps. The Santa Rosa Plain supports a number of state and federally-listed species and there are regulatory agency rules that govern how projects must evaluate impacts to wetlands and listed species within this region. The four most imperiled species on the Santa Rosa Plain are the California tiger salamander, Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam, which are all federally-listed and protected pursuant to FESA. Regarding the California tiger salamander, the project site does not fall within California tiger salamander Critical Habitat designated by the USFWS (Figure 10). Similarly, the USFWS' Conservation Strategy map shows that the project site falls within an area designated as: "*Presence of California tiger salamander is not likely but mitigation for listed plants may be required*" Santa Rosa Plain Conservation Strategy Map (USFWS 2007). Thus, the project will not impact the California tiger

salamander and mitigation for this species is not warranted (nor is it being required by the USFWS, pers. comm. with Ryan Olah).

The project site has an historic occurrence of Burke's goldfields. This sighting dates back to 1989; Burke's goldfield has not been observed on the project site since that year (C. Patterson, consulting biologist, pers. comm. with G. Monk of M&A, and also M&A's direct experience working on the project site and conducting three years of special-status plant surveys). Accordingly, Mr. Ryan Olah, Chief of the USFWS' Coast, Bay, Delta Branch agreed in a June 4, 2019 meeting with M&A and the applicant team that the wetlands on the project site could be regarded as providing "suitable" Burke's goldfields habitat and impacts to seasonal wetlands could be mitigated as "suitable habitat" per the USFWS' *Programmatic Biological Opinion ("Programmatic BO") for U.S. Army Corps of Engineers (Corps) Permitted Projects that Affect the California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California* (2020). That is, mitigation for impacts to suitable seasonal wetland habitat will require a 1.5:1 replacement to impacts ratio as more specifically detailed in the *Programmatic BO*. The applicant will also need to obtain a Biological Opinion from USFWS in order to provide coverage of any incidental take of the Burke's goldfields "suitable habitat." Since the proposed project will require a Clean Water Act permit (Section 404 permit) from the Corps, the USFWS will produce a Biological Opinion that provides FESA Incidental Take authority[1]. This is further discussed in the Impacts and Mitigation Section below.

As M&A has conducted numerous surveys on this project site over the past decade, including three years of special-status plant surveys, M&A is confident that no additional federally listed species are present on the project site.

Finally, the project site's creek, Pruitt Creek, is located within designated Critical Habitat for the California Central Coast DPS for steelhead. Pruitt Creek is an intermittent creek that is dry by summer. It does not provide gravel bars or suitable pools for egg laying or fry-rearing habitat. Thus, steelhead would not be impacted by the proposed project. Regardless, since the project site lies within designated Critical Habitat, consultation by and between the Corps and the NMFS for the proposed project will be implemented to ensure that coverage is provided for impacts to steelhead designated Critical Habitat.

7.2 **California Endangered Species Act**

7.2.1 SECTION 2081 OF THE CALIFORNIA ENDANGERED SPECIES ACT

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA, above),

[1] Projects that require a Corps permit and that remain consistent with objectives stated in the Conservation Strategy can be appended to the Programmatic Biological Opinion at the discretion of the USFWS and provided Incidental Take authority via this route.

CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFW determines that a proposed project could impact a State-listed threatened or endangered species, CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFW and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFW will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant's objectives to the greatest extent possible; and,
    c) are capable of successful implementation; and,
4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal incidental take permit) pursuant to the FESA, to submit the federal opinion or permit to CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFW determines that the federal incidental take permit is consistent

with state law, and that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state CESA permit under Section 2081(b). Section 2081(b) is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

7.2.2 Applicability to The Proposed Project

There is a CNDDB record for Burke's goldfields on the project site. However, this population of Burke's has not been observed since 1989 despite multiple botanists conducting surveys onsite and trying to relocate this plant over the past two decades. Thus, there is no expectation that Burke's goldfields will be impacted by the proposed project and an incidental take permit from the CDFW is not warranted (please note that CDFW incidental take permits do not cover loss of habitat, only the plants themselves).

The project site does not fall within the California tiger salamander's range on the Santa Rosa Plain (Figure 11) (from Figure 3 of the USFWS' Final Santa Rosa Plain Conservation Strategy (USFWS 2007)). The CDFW's CNDDB (RareFind) has the closest known California tiger salamander record to the project site located at the Alton Lane Conservation Site, which is located 3.3 miles to the south of the project site. The known migration/dispersal distance of a California tiger salamander is 1.3 miles; thus, the project site is too far from known extant California tiger salamander habitat to be considered for this species. Additionally, there are densely urbanized landscapes and major roads between the closest extant California tiger salamander record and the project site that constitute effective geographic barriers to California tiger salamander movements to the project site. As such, California tiger salamander are not expected to occur on the project site and there would be no take of California tiger salamander from implementation of the project. Thus, as there would be no "take" of California tiger salamander, an incidental take permit is not warranted from the CDFW pursuant to the CESA.

7.3 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take."

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.3.1 APPLICABILITY TO THE PROPOSED PROJECT

Raptors that could be impacted by the project include white-tailed kite, red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), and red-shouldered hawks (*Buteo lineatus*), and common birds such as mourning dove, California scrub jay, mallard duck, and house finch, among others. Preconstruction nesting surveys would have to be conducted to ensure that there is no direct take of nesting birds including their eggs, or young. Any active nests that were found during preconstruction surveys would have to be avoided by the project. Suitable non-disturbance buffers would have to be established around nest sites until the nesting cycle is complete. Please review specific requirements for avoidance of nest sites for nesting bird species in the Impact and Mitigation section.

7.4 Santa Rosa Plain Conservation Strategy (USFWS 2005)

The Federal listing of California tiger salamander resulted in uncertainty for many local jurisdictions, landowners, and developers about its effects on their current and proposed activities. Because of this uncertainty, local private and public interest groups met with the USFWS to discuss a cooperative approach to protecting California tiger salamander, while allowing currently planned and future land uses to occur within its range. The result of these discussions was the creation of the *Final Santa Rosa Plain Conservation Strategy* ("*Conservation Strategy*") (USFWS 2005).

The purpose of the *Conservation Strategy* is threefold: (1) to establish a long-term conservation program sufficient to mitigate potential adverse effects of future development on the Santa Rosa Plain, and to conserve and contribute to the recovery of the listed species and the conservation of their sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of Sonoma County California tiger salamander and listed plants that may occur in the course of carrying out a broad range of activities on the Santa Rosa Plain. The *Conservation Strategy* establishes interim and long-term mitigation requirements and designates conservation areas where mitigation will occur. It describes how habitat preserves will be established and managed. It also includes guidelines for translocation, management plans, adaptive management and funding.

The *Conservation Strategy* identifies areas within the Santa Rosa Plain that should be conserved to benefit the listed plants and Sonoma County California tiger salamander. Their designation was based upon the following factors: 1) known distribution of the California tiger salamander; 2) the presence of suitable habitat; 3) presence of large blocks of natural or restorable land; 4) proximity to existing Preserves; and 5) known location of the listed plants. The designation of conservation areas also generally attempted to avoid future development areas established by urban growth boundaries and city general plans. The objective of these conservation areas is to ensure that preservation occurs throughout the distribution of the species.

The goal of the *Conservation Strategy* is to preserve a large enough area of suitable habitat to ensure the conservation of California tiger salamander and listed plants and contribute to their recovery. In order to do this, areas are identified within the Santa Rosa Plain that currently or potentially support California tiger salamander and listed plants, as well as the areas that currently or likely will support development. This information was used to develop appropriate "conservation areas" and requirements as well as mitigation guidelines and requirements, in order to "provide consistency, timeliness and certainty for permitted activities."

Proposed projects within the potential California tiger salamander range will fall into one of three categories:

a.) Projects within 1.3 miles of a known California tiger salamander breeding site, and likely to impact California tiger salamander breeding and/or upland habitat; or
b.) Projects beyond 1.3 miles from a known California tiger salamander breeding site, but within the "Potential for Presence of California tiger salamander" or "Potential for Presence of California tiger salamander and Plants"; or
c.) Projects where "Presence of California tiger salamander is Not Likely."

Different mitigation ratios are recommended for each of these categories.

The *Conservation Strategy* recommends that projects filling *potential* listed plant habitat should mitigate these impacts via the preservation of existing occupied habitat at a 1:1 ratio, and projects filling *known* listed plant habitat should mitigate these impacts via the preservation of existing occupied habitat at a 2:1 ratio, as per a Programmatic Biological Opinion (USFWS 1998) in effect at the time of the *Conservation Strategy* was prepared in 2005. The USFWS' 2020 Programmatic Biological Opinion (USFWS 2020) has since superseded the 2007 and 1998 Programmatic Biological Opinions and the mitigation ratios have changed as discussed below and in the 2020 Programmatic Biological Opinion.

The *Conservation Strategy* recommends that projects filling wetlands should mitigate these impacts via the preservation of wetlands at a minimum of a 1:1 replacement ratio, depending on the quality of the filled wetlands, as per a Programmatic Biological Opinion (USFWS 1998) in effect at the time of the *Conservation Strategy* was prepared in 2005. The 1998 Programmatic Biological Opinion was superseded by a Programmatic Biological Opinion prepared by the USFWS for the Corps in 2007 (USFWS 2007) and again in 2020 (USFWS 2020).

7.4.1 APPLICABILITY TO THE PROPOSED PROJECT

As noted above, the project site is located within Core Areas for Sonoma sunshine and Burke's goldfields, and the Management Area for Sebastopol meadowfoam. Approximately 0.19-acre of seasonal wetland habitat will be impacted by the proposed project. The applicant will mitigate for these impacts at the 1.5:1 mitigation ratio specified in the USFWS' Programmatic Biological Opinion (2020), which is further discussed in the sections below.

The project site is not located in an area of the Santa Rosa Plain that is designated as California tiger salamander habitat based on Figure 3 of the *Conservation Strategy* (USFWS 2005) (which

is included in this report as Figure 11). Figure 3 of the *Conservation Strategy* states that "*Presence of CTS is not likely but mitigation for listed plants may be required*."

The project site has a historic occurrence of Burke's goldfields. This sighting dates back to 1989; Burke's goldfield has not been observed on the project site since that year (C. Patterson, consulting biologist, pers. comm. with G. Monk of M&A, and also M&A's direct experience working on the project site and conducting three years of special-status plant surveys). Accordingly, Mr. Ryan Olah, Chief of the USFWS' Coast, Bay, Delta Branch agreed in a June 4, 2019 meeting with M&A and the applicant team that the wetlands on the project site could be regarded as providing "suitable" Burke's goldfields habitat and impacts to seasonal wetlands could be mitigated as "suitable habitat" per the USFWS' *Programmatic Biological Opinion ("Programmatic BO") for U.S. Army Corps of Engineers (Corps) Permitted Projects that Affect the California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California* (2020). That is, mitigation for impacts to suitable seasonal wetland habitat will require a 1.5:1 replacement to impacts ratio as more specifically detailed in the *Programmatic BO*. Appropriate mitigation credits will be purchased that will satisfy the tenants of the USFWS' Conservation Strategy, as updated through USFWS' 2020 *Programmatic BO* (see discussions below).

7.5 USFWS Recovery Plan for the Santa Rosa Plain (USFWS 2016)

In December 2016, the USFWS adopted a formal Recovery Plan for the Santa Rosa Plain (Recovery Plan) addressing recovery efforts necessary to protect and otherwise eventually recover the federally listed Sonoma County DPS of California tiger salamander and three vernal pool plants: Sonoma sunshine*;* Burke's goldfields*;* Sebastopol meadowfoam (USFWS 2016). All four species are confined almost entirely to the Santa Rosa Plain. The Recovery Plan and its objectives are implemented through cooperative CEQA lead agencies, and through federal nexus agency consultations (e.g., Corps consultations) with the USFWS via Section 7 of the FESA. Any federal nexus agency that consults with the USFWS pursuant to Section 7 will obtain a letter of no effect or a Biological Opinion that provides or denies "incidental take authority." Any conditions of a Biological Opinion issued to the Corps for a pending project are to become conditions of the Corps' permit authorization.

Pursuant to the FESA, Incidental take includes loss of listed species' habitat or harm that could occur to a federally listed species. An Incidental Take Permit allows an otherwise legally sanctioned activity to proceed even if there could be a collateral impact to a federally listed species. Similarly, any Section 10 FESA consultation with the USFWS, which is allowed for in the FESA for all non-federal entities, that results in Incidental Take authority granted by the USFWS to the non-federal entity, would otherwise include provisions for compliance with the objectives of the Recovery Plan.

The USFWS has determined that the primary threats to the three listed vernal pool plants and the California tiger salamander on the Santa Rosa Plain is the reduction and fragmentation of habitat due to urban development, agricultural land conversion, and habitat degradation that modifies vernal pool hydrology, and colonization of seasonal wetlands by competitive invasive plants. Consequently, the Recovery Plan focuses on these threats. In order to downlist or delist the four

species that are imperiled in the Santa Rosa Plain, the threats to the species' habitat must be reduced or eliminated. The USFWS criteria for downlisting are based upon preservation of extant vernal pools systems and attending uplands that support wetland complexes. The USFWS has segmented the Santa Rosa Plain into "Core" and "Management Areas" (USFWS 2016) where species preservation, and habitat enhancement and management must occur to recover these four listed species. Core areas comprise the heart of the species historical (and current) range and represent central blocks of contiguously occupied habitat that function to allow for dispersal, genetic interchange between populations, and metapopulation dynamics. Management areas are occupied habitat peripheral to the species' Core areas. Species Core and Management Areas are shown in this report at Figures 6, 7, 8 and 12.

7.5.1 APPLICABILITY TO THE PROPOSED PROJECT

The project site is located outside of the Santa Rosa Plain California tiger salamander Core and Management Areas identified in the USFWS' 2016 Recovery Plan for the Santa Rosa Plain (USFWS 2016) (Figure 12). However, the project site is located within Core and/or Management Areas for the three federally-listed plants known from the Santa Rosa Plain: Sonoma sunshine, Burke's goldfields, and Sebastopol meadowfoam (Figures 6-8). Since approximately 0.19-acre of seasonal wetland habitat [Corps jurisdictional area (Sheet 1)], will be impacted by the proposed project the applicant must acquire a permit from the Corps as well as the RWQCB. ***During the Corps permitting process, FESA Section 7 consultation by and between the Corps and the USFWS will be required for this project as the project will impact "suitable habitat" for federally protected plant species.***

7.6 Santa Rosa Plain Programmatic Biological Opinion (USFWS 2020)

The *Programmatic Biological Opinion* (USFWS 2020) is based on the biological framework presented in the *Conservation Strategy*. This *Programmatic Biological Opinion* replaces (supersedes) the July 17, 1998 *Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain* (USFWS 1998), as well as the revisions made in 2007 (USFWS 2007), which were prepared for listed plant species on the Santa Rosa Plain. Projects that require a Corps permit and that remain consistent with objectives stated in the *Conservation Strategy* can be appended to the *Programmatic Biological Opinion* at the discretion of the USFWS. Projects that are appended to the *Programmatic Biological Opinion* will be provided individual take authorization for impacts to federally listed species.

7.6.1 IMPACTS TO LISTED PLANT SPECIES

"Suitable habitat" for listed plants is defined as 1) wetlands containing surface water (standing or flowing) during the rainy season in a normal rainfall year for 7 or more consecutive days, 2) wetlands that have an outlet barrier (i.e., are pools) or occur in depressional terrain (i.e., are a swale or drainage feature), and 3) seasonal wetlands located within a Core or Management Area (USFWS 2020). Seasonal wetlands are considered "occupied habitat" if surveys have been conducted following USFWS protocols and listed species are recorded on the site, or if listed species have been recorded on the site in the past. Projects anticipated to adversely affect occurrences of Burke's goldfields, Sebastopol meadowfoam, or Sonoma sunshine recorded in the CNDDB do not qualify for coverage under the 2020 programmatic biological opinion and will

need to have case specific biological analysis and a separate biological opinion issued because appropriate conservation for loss or degradation of the site(s) is case specific. However, projects anticipated to adversely affect *suitable habitat* of Burke's goldfields, Sebastopol meadowfoam, or Sonoma sunshine are covered in the 2020 *Programmatic Biological Opinion*. Even if two years of protocol rare plant surveys have been conducted proving absence of these federally-listed plants, wetland habitats where a seedbank may be present are still regarded by the USFWS as "suitable" listed plant species habitat. The following mitigation to impacts ratios, expressed as acres to be conserved to acres of impact, are required to adhere to the *Programmatic Biological Opinion* (USFWS 2020):

Burke's Goldfields

- Impacts to Suitable Habitat: 1.5:1 suitable habitat within the same Core Area as impacts; 3:1 suitable habitat in different a Core Area than impacts.

Sonoma Sunshine

- Impacts to Suitable Habitat: 1.5:1 suitable habitat within the same Core Area as impacts; 3:1 suitable habitat in a different Core Area than impacts.

Sebastopol Meadowfoam

- Impacts to Suitable Habitat: 1.5:1 suitable habitat; 3:1 suitable habitat in a different Core Area than impacts.

In addition:

- The *Programmatic Biological Opinion* (USFWS 2020) allows for the purchase of mitigation credits to be used for listed plant species from a USFWS-approved mitigation bank.
- When impacted areas contain suitable habitat for listed plant species, species-specific mitigation will be implemented for the species that occurs nearest the project site based on CNDDB occurrences.
- When impacts occur to suitable habitat on sites that are within the Core Area for more than one listed plant species, mitigation land area must be distributed equally among all affected species (e.g., impacts to 1 total acre of suitable habitat on a site that is within a Core Area for both Burke's goldfields and Sonoma sunshine must then allocate 0.5-acre of restored habitat to each species).
- For impacts to suitable habitat located within a Core Area, mitigation will be prioritized to occur in that same Core Area. Exceptions may be considered on a case-by-case basis, and will require approval from the Corps and the USFWS. For impacts to suitable habitat located within a Management Area, mitigation may take place either in that same Management Area or in the nearest Core Area.

Impacts to California Tiger Salamander

For projects that may affect California tiger salamander, mitigation requirements will apply to the entire project area, including areas of both direct and indirect impact. The following mitigation to impacts ratios, expressed as acres to be conserved to acres of impact, are required by the *Programmatic Biological Opinion* (USFWS 2020) for project sites that affect Corps regulated waters of the U.S.:

Mitigation of 3:1

For projects that are within 500 feet of a known breeding site.

Mitigation of 2:1

For projects that are greater than 500 feet and within 2,200 feet of a known breeding site, and for projects beyond 2,200 feet from a known breeding site, but within 500 feet of a non-breeding occurrence.

Mitigation of 1:1

For projects that are greater than 2,200 feet and within 1.3 miles (6,864 feet) of a known breeding site.

Mitigation of 0.2:1

For projects that are greater than 1.3 miles (6,864 feet) from a known breeding site and greater than 500 feet from a non-breeding occurrence.

In addition:

- The *Programmatic Biological Opinion* (USFWS 2020) allows for the purchase of mitigation credits to be used for the Sonoma County California tiger salamander from a USFWS-approved mitigation bank.
- For impacts to Sonoma County California tiger salamander located within a Core Area, mitigation will be prioritized to occur in that same Core Area. Exceptions may be considered on a case-by-case basis, and will require approval from the Corps and the USFWS.
- For impacts to Sonoma County California tiger salamander located within a Management Area, mitigation may take place either in that same Management Area or in the nearest Core Area.

7.6.2 APPLICABILITY TO THE PROPOSED PROJECT

The project site is located outside of the Santa Rosa Plain California tiger salamander Core and Management Areas identified in the USFWS' 2016 Recovery Plan for the Santa Rosa Plain (Figure 9) (USFWS 2016). Hence, no impacts to the California tiger salamander are expected and no mitigation for this species is warranted.

The project site is located within Core Areas for Sonoma sunshine and Burke's goldfields and within the Management Area for Sebastopol meadowfoam. ***Given the proposed project will result in impacts to Corps-jurisdictional areas (specifically wetlands), impacts to suitable listed plant habitat are anticipated as well.*** *As such, the applicant must acquire a permit from the Corps. Additionally, as the project site will impact FESA listed plant species habitat, FESA Section 7 consultation by and between the Corps and the USFWS will be required for this proposed project. In accordance with the Programmatic BO (2020), the applicant will have to mitigate for impacts to Burke's goldfields' suitable habitat at a ratio of 1.5:1* (per an agreement made with Ryan Olah during a meeting at USFWS offices in 2019).

7.7 TOWN OF WINDSOR TREE PRESERVATION AND PROTECTION ORDINANCE

The Town of Windsor Code, Chapter 27.36, pertains to the protection of trees within the Town of Windsor and provides regulations for the protection, preservation, and maintenance of native oak trees and trees of significance, groves and stands of mature trees, and mature trees in general. It is also the intent of the chapter to perpetuate these trees through the replacement of trees removed as a result of a new development.

As stated in the *Tree Preservation and Protection Ordinance*: A protected tree (Chapter 27.36.040) is any of the following:

A. The following native oak trees six inch or greater:
Black Oak (*Quercus kelloggii*)
Valley Oak (*Quercus lobata*)
Blue Oak (*Quercus douglasii*)
Interior Live Oak (*Quercus wislizenii*)
Coast Live Oak (*Quercus agrifolia*)
Oracle Oak (*Quercus x morehus*)
Oregon Oak (*Quercus garryana*)
Chase Oak (*Quercus x chaseii*)

As well as the following trees:
California Buckeye *(Aesculus californica*) six inch or greater
California Bay (*Umbellularia californica*) twelve inch or greater

Size is trunk diameter measured at a height of 4.5 feet from surrounding grade. Multiple trunk trees must possess at least one trunk with the above diameter (based on species) to be considered protected. (Smaller trees may also be protected under special circumstances. On projects where Planning Commission/Town Council approval is not required, determination will be made at the direction of the Planning Director.)

B. Heritage trees as identified by Council resolution 3-124

C. Significant groves or stands of trees. On projects where Planning Commission/Town Council approval is not required, determination will be at the direction of the Planning Director.

D. Mature trees located on a parcel of one acre or more. Smaller trees may also be protected under special circumstances. On projects where Planning Commission/Town Council approval is not required, determination will be at the direction of the Planning Director.

E. Any tree required, to be planted or preserved, as environmental mitigation for a discretionary permit.

F. Landmark trees are trees identified during the development process and for which preservation is encouraged during the design phase of the project by keeping development and construction activity outside the designated Tree Protection Zone (TPZ). An arborist report prepared by a Town approved arborist shall be prepared assessing the structural integrity and health of the tree(s). Project developers should be aware of their significance and understand that special measures, unusual protection techniques, and more rigid preservation standards will apply. Development density and project layout may be affected where landmark trees are located in order to protect them. Over-mature, senescent, or ancient trees may not qualify for preservation if they are unstable, hazardous, in poor health, or otherwise unsuited for preservation in an urban setting. However, if older larger trees are not in optimum condition that in itself would not be a reason for removal. (Revised 04/18/07, ORD. 2007-214) Landmark trees shall be designated on the development plan for preservation and protection. When a tentative map is part of the development entitlement the conditions shall include the following notes to be recorded on the map:

1. The location of the tree shall be identified by lot/parcel number.
2. The Tree is subject to all regulations of the Tree Protection Ordinance.
3. Maintenance shall be completed in accordance with the Tree Technical Manual.
4. Tree Removal is subject to Planning Commission review and action.
5. Standard Tree Protection Notes including references to the arborist report and supplemental reports shall be included.

7.7.1 APPLICABILITY TO THE PROPOSED PROJECT

There are eight valley oaks (*Quercus lobata*) located in the northwestern portion of the project site. None of these trees will be impacted by the proposed project as they will be included within the proposed wetland preserve (conservation easement area; Attachment A). There are also approximately 15 sapling valley oak trees (DBH approximately 2 inches each) located along the north bank of Pruitt Creek that were planted as part of a riparian planting plan implemented as mitigation for another project over a decade ago. Some of these trees may have to be removed to create a newly realigned channel for Pruitt Creek on the project site. Since these sapling valley oaks were planted as mitigation for another project, they are considered “protected trees” pursuant to the Town’s tree protection and preservation ordinance. Mitigation is likely required for their removal.

8. TOWN OF WINDSOR GENERAL PLAN AND EIR (2040)

The Windsor General Plan that was adopted on April 4, 2018 identifies the Town's vision for the future and provides a framework that will guide decisions on growth, development, and conservation of natural resources and agriculture in a manner consistent with the quality of life desired by the Town's residents and businesses. To ensure that this desired vision is realized, the General Plan has been designed to be internally consistent and cross-referenced with other documents, including the Town's Zoning Ordinance.

The Town of Windsor 2040 General Plan EIR reviewed potentially significant environmental effects resulting from plan implementation and developed measures and policies to mitigate impacts. Nonetheless, significant and unavoidable impacts were determined to occur under the General Plan. Therefore, the Town adopted a statement of overriding considerations, which balance the merits of approving the plan despite the significant environmental effects. The effects identified as significant and unavoidable in the General Plan EIR are:

- Conversion of active agricultural land to non-agricultural land uses.
- Increases in traffic at certain locations, which have the potential to cause queuing beyond acceptable levels at certain intersections, resulting in traffic related hazards.

The Biological Resources chapter discusses the policies to protect unique and sensitive biotic features such as rare and endangered plant and animal species, dense oak woodlands, and vernal pools, and encourage sensitive design in these areas. Applicable policies are listed below:

8.1 Policies

ER-6.1 Protection of Biological and Ecological Resources. The Town shall protect significant biological and ecological resources in Windsor, including:

a. Wetlands, in particular, high value wetlands
b. Rare, threatened, or endangered species
c. Vulnerable habitats
d. Vernal pools
e. Oak groves and woodlands
f. Riparian woodlands
g. Heritage trees

ER-6.4 Compliance with State and Federal Wetland Regulations. The Town shall ensure that development projects that would fill wetlands or vernal pools conform with applicable State and Federal regulations regarding the protection of these resources.

ER-6.5 Applicant Mitigation Obligation. The Town shall ensure the protection or restoration of sensitive biological resources that is required as a condition or mitigation of a development project is closely monitored at the cost of the project applicant to determine compliance with the condition or mitigation and to evaluate the effectiveness of the measure.

ER-6.7 Preservation of Oak Woodlands. The Town shall encourage the preservation of oak woodlands and significant stands of oaks and heritage trees. Development plans should indicate

preservation of these resources to the fullest extent feasible and restrict pavement and other encroachments within the root zones of oak trees to ensure their long-term survival. Should removal be necessary, the project applicant shall be required to plant replacement trees or removal can be done through the payment of an in-lieu fee.

ER-6.8 Tree Protection During Construction. The Town shall require proper measures be implemented to ensure the long-term survival of trees designated in the Tree Preservation and Protection Ordinance during construction activities. Fencing around individual trees or groups of trees shall be required to protect them from compaction and mechanical injury.

8.1.1 APPLICABILITY TO THE PROPOSED PROJECT

The Clearwater at Windsor project is consistent with the Town of Windsor 2040 General Plan. Per Policy ER-6.1 Protection of Biological and Ecological Resources, an approximately 12.55-acre wetland preserve/conservation easement area will be established as part of the proposed project to protect existing seasonal wetlands, rare plant habitat, and native oak trees.

Per ER-6.4 Compliance with State and Federal Wetland Regulations, the Town will ensure conformance with applicable State and Federal regulations for any impacts to waters of the U.S. or State. The applicant will apply for a Corps Section 404 CWA permit and a RWQCB Section 401 water quality certification. The applicant will also apply for a CDFW Section 1602 Agreement.

Per ER-6.5 Applicant Mitigation Obligation, the Town will ensure compliance with any mitigation requirement stipulated in the resource agency permits.

Per ER-6.8 Tree Protection During Construction, the Town will implement proper measures to ensure the long-term survival of trees designated in the Tree Preservation and Protection Ordinance during construction activities. Fencing around individual trees or groups of trees shall be required to protect them from compaction and mechanical injury. Trees impacted by the project will be mitigated per the Tree Preservation and Protection Ordinance.

9. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

9.1 U.S. Army Corps of Engineers Jurisdiction and Permitting

9.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through

330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

9.1.1.1 Navigable Waters Protection Rule

On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and the Corps (together, ‘‘the agencies’’) published the Navigable Waters Protection Rule re-defining the scope of waters subject to federal regulation under the Clean Water Act (CWA or the Act), in light of the U.S. Supreme Court cases in *United States* v. *Riverside Bayview Homes* (*Riverside Bayview*), *Solid Waste Agency of Northern Cook County* v. *United States* (*SWANCC*), and *Rapanos* v. *United States* (*Rapanos*), and consistent with Executive Order 13778, signed on February 28, 2017, entitled ‘‘Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the ‘Waters of the United States’ Rule.’’ This Final Rule became effective on June 22, 2020 (Corps 2020).

In this final rule, the agencies interpret the term ‘‘waters of the United States’’ to encompass:

1. The territorial seas and traditional navigable waters;
2. perennial and intermittent tributaries that contribute surface water flow to such waters;
3. certain lakes, ponds, and impoundments of jurisdictional waters; and,
4. wetlands adjacent to other jurisdictional waters.

Paragraph (a) of the final rule identifies four categories of waters that are ‘‘waters of the United States.’’ These waters are referred to as ‘‘jurisdictional.’’

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[7]).

9.1.2 Clean Water Act Defined Wetlands

Wetlands are defined as: “...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions” (33 CFR Section 328.3 [16]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded and that exhibit properties that typically include redoximorphic chemical changes to the soil properties indicative of periodic saturation or inundation, and, thus that meet the hydric soil criterion). All three parameters must be present to be regarded as a Clean Water Act defined wetland. Wetlands may or may not be regulated by the Corps pursuant to the Clean Water Act depending on whether they occur as part of a navigable water or have direct adjacency to a navigable waters, as defined above.

9.1.2.1 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the U.S. In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to waters of the U.S. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g., a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.,* must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the U.S.) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.,* impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater

value than the impacted site. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

9.1.3 APPLICABILITY TO THE PROPOSED PROJECT

A wetland delineation was conducted by M&A Principal Biologist Mr. Geoff Monk and Project Biologist Mr. Geoff Thomas on January 2, 2008 according to the 1987 *Corps Wetland Delineation Manual* (Corps 1987) and the *Regional Supplement to the Corps' Wetland Delineation Manual: Arid West Regio*n (Corps 2008). A request for a jurisdictional determination and a Draft Aquatic Resources Delineation Map (Sheet 1) was submitted to the Corps on June 20, 2008 and the Corps issued an Approved Jurisdictional Determination (AJD) on December 19, 2008. M&A requested a re-verified Preliminary Jurisdictional Determination (PJD) on October 22, 2012, resulting in issuance of a PJD on January 28, 2013. This PJD confirmed 4.59 acres of "seasonal wetlands" on the project site, as well as 0.56-acre of "other waters" of the United States/State (Pruitt Creek). In total there are 5.15 acres of waters of the United States on the project site. Thus, Pruitt Creek and the seasonal wetlands identified on the project site (Sheet 1) fall under the Corps' jurisdiction as waters of the United States pursuant to Section 404 of the CWA. Any proposal to fill these waters of the United States would require prior authorization from the Corps.

Under the currently proposed project, approximately 0.29-acre of waters of the United States would be impacted (filled). This 0.29-acre of impact is broken down into:

1. 0.19-acre of seasonal wetlands being filled to accommodate the housing development and associated infrastructure;
2. 0.10-acre of impact to Pruitt Creek (other waters of the United State/State) from:
    (a) Construction of realigned Pruitt Creek which will require tying the new creek alignment into the upstream and downstream ends of the existing creek which will result in impacts to approximately 375 linear feet of Pruitt Creek below the ordinary high water marks in these up and downstream locations (Attachment A).
    (b) Installation of two outfall structures along the northern bank of Pruitt Creek below the ordinary high water marks as shown in Attachment A.

The proposed project's total impacts to waters of the United State are less than 0.5-acre and should qualify for use of a Nationwide Permit pursuant to Section 404 of the CWA. In accordance with any Nationwide Permit issued by the Corps for the proposed project, the applicant will be required to mitigate for the impacts to waters of the US. This is further discussed in the Impacts and Mitigation Measures section.

9.2 California Regional Water Quality Control Board (RWQCB)

9.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality. Where a project will result in dredge or fill of non-federal waters of the State, the RWQCB will authorize those fills through waste discharge requirements issued under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the State Water Resources Control Board adopted a state-level definition of "wetlands,' which definition is broader than the federal definition in that unvegetated areas may be considered a wetland water of the State. As a part of the same policy, the Water Board adopted permit procedures and standards governing the discharge of dredged or fill material into wetlands and other waters of the State. The policy includes, among other things, requirements for analyses to identify the least environmentally damaging practicable alternative (LEDPA) and compensatory mitigation standards including a minimum 1:1 ratio for wetlands and streams, and full functional replacement of all waters on top of this minimum where applicable. The policy, which will govern both Section 401 certifications and WDRs, is scheduled to become effective nine months following the completion of review by the California Office of Administrative Law.

9.2.2 Applicability to the Proposed Project

Since the RWQCB does not have a formal method for technically defining what constitutes waters of the State, M&A expects that the RWQCB should remain consistent with the Corps' determination. Any Section 404 permit authorized by the Corps for the project would be inoperative without also obtaining authorization from the RWQCB pursuant to Section 401 of the Clean Water Act (i.e., without obtaining a certification of water quality).

Any impacts to waters of the State would have to be mitigated to the satisfaction of the RWQCB prior to the time this resource agency would issue a permit for impacts to such features. The RWQCB requirements for issuance of a "401 Certification" typically parallel the Corps requirements for permitting impacts to Corps regulated waters pursuant to Section 404 of the Clean Water Act. However, in a pre-application meeting with the North Coast Branch of the RWQCB, the applicant team was told that for any project impacts within 20 feet of the project site's seasonal wetlands, the RWQCB would require mitigation at a 1:1 ratio for the loss of/impact to the wetlands' watershed. Thus, mitigation will be required for the project's impacts

to watershed associated with approximately 0.20-acre of seasonal wetlands that are within 20 feet of the proposed development footprint.

In addition, the 0.29-acre of waters of the State that would be impacted by fill activities (that is, 0.19-acre of seasonal wetlands and 0.10-acre of Pruitt Creek) will likely require mitigation at a 1:1 ratio for these permanent impacts, *if* mitigation credits are purchased at a qualified wetland mitigation bank to compensate for these impacts in addition to setting aside the majority of the project site's seasonal wetlands in a 12.55-acre preserve. Please see the Impacts and Mitigations section for details.

9.2.3 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the U.S. Environmental Protection Agency (USEPA), sediment is one of the most widespread pollutants contaminating U.S. rivers and streams. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the federal CWA and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices Plan (BMPs) of any portion of the project site that is graded. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into the project plans to ensure that there are no impacts to downstream receiving waters. The SWMP will be submitted to RWQCB for approval.

9.2.4 APPLICABILITY TO THE PROPOSED PROJECT

Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, care will be required when constructing the proposed project to be sure that adequate pre-and post-construction Best Management Practices Plan (BMPs) are incorporated into the project implementation plans.

All stormwater runoff from the undeveloped site currently flows into Pruitt Creek. Pruitt Creek flows underneath Highway 101 via a culvert. The proposed development will include installation of a storm drain system which will pre-treat stormwater prior to release into the Town's storm drain system. During project construction it will be important for the project proponent to have the components of a SWPPP and a SWMP in place; these documents are typically prepared by the project civil engineer.

10. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORM WATER MANAGEMENT

10.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the State Water Resources Control Board (SWRCB) has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the State Water Board's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the CWA, the RWQCB regulates construction discharges under the National Pollutant Discharge Elimination System (NPDES). The project sponsor of construction or other

activities that disturb more than 1 acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[2].

10.1.1 APPLICABILITY TO THE PROPOSED PROJECT

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, Stormwater Pollution Prevention Plan (SWPPP), Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify Best Management Practices (BMPs) for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

11. STORM WATER LOW IMPACT DEVELOPMENT (SWLID)

Participating cities in Sonoma County within the Santa Rosa Plain use the *Guidelines for the Standard Urban Storm Water Mitigation Plan (SUSMP), Storm Water Best Management Practices for New Development and Redevelopment for the Santa Rosa Area and Unincorporated Areas around Petaluma and Sonoma* published on June 3, 2005. However, the City of Santa Rosa has updated the process using the 2017 Storm Water Low Impact Development (SWLID) guidelines to better facilitate the processing of Clean Water Act permits. California's North Coast RWQCB routinely uses the SWLID Design Manual as an example program on how post-construction BMPs should be implemented.

The 2017 SWLID provides technical guidance for project designs that require the implementation of permanent storm water BMPs. This 2017 SWLID supersedes both the 2005 SUSMP guidelines and the 2011 version of the SWLID manual. To reduce storm water pollution, protect water quality of local waterways, and promote groundwater recharge, SWLID integrates specialized landscape features into an urban environment and directs runoff into these features where it can soak into the ground. This design approach mimics the storm water benefits of the natural environment. Specialized swales, planters, and raingardens provide beauty while also slowing runoff and removing pollutants. Plants and microbes that live in healthy soil use pollutants as nutrients, removing them from runoff.

The SWLID is formally defined as:

[2] CGP Order 2009-0009-DWQ remains in effect, but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

A development site design strategy with a goal of maintaining or reproducing the predevelopment hydrologic system through the use of design techniques to create a functionally equivalent hydrologic setting. Hydrologic functions of storage, infiltration, and groundwater recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed small-scale storm water retention and detention areas, reduction of impervious surfaces, and the lengthening of flow paths, and runoff time.

The SWLID Design Manual is intended to satisfy the specific requirements of "Order No. R1-2015-0030, NPDES No. CA-0025054 NPDES permit and waste discharge requirements for discharges from the municipal separate storm sewer systems." Additional design requirements imposed by governing agencies, such as local grading ordinances, CAL Green, CEQA, 401 permitting, and hydraulic design for flood control still apply as appropriate.

The intention of the Design Manual is to promote the following SWLID goals:

- Minimize the adverse impacts from storm water runoff on water quality, the biological integrity of receiving waters, and the beneficial uses of water bodies.
- Minimize the percentage of impervious surfaces on land development projects and implement mitigation measures to mimic the pre-development water balance through infiltration, evapotranspiration, and capture and reuse of storm water.
- Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs, including source control BMPs or good housekeeping practices, SWLID planning and design strategies, and treatment control BMPs.
- Proper selection, design and maintenance of treatment control BMPs, and hydromodification control BMPs to address pollutants generated by land development, minimizing post-development surface flows and velocities, assuring long-term functionality of BMPs, and avoiding the breeding of vectors.

11.1 Projects That Trigger Requirements

Geographic Areas

The requirements set forth in this SWLID Design Manual apply to projects within the jurisdiction of City of Santa Rosa, City of Healdsburg, Town of Windsor, City of Cotati, City of Sebastopol, City of Cloverdale, City of Ukiah, and City of Rohnert Park as well as the portions of the County of Sonoma as shown in Attachment C of the NPDES MS4 Permit Order No. R1-2015-0030.

This SWLID manual does not apply to the areas south of the Russian River/Laguna De Santa Rosa watershed boundary, including portions of Petaluma, Sonoma, and the southern portion of the County of Sonoma as they are outside the jurisdiction of the North Coast RWQCB and have distinct design requirements.

Project Triggers and Exemptions

Since SWLID features are designed to mitigate for the permanent impacts caused by impervious surfaces, the total amount of impervious surface must be considered when determining whether

or not a project triggers SWLID requirements. This evaluation must include the built-out project condition (including homes or structures that will be completed under separate building permits) as well as all phases of a phased project. Note that tributary areas where no impervious surface will be added or replaced are not required to install BMPs.

Impervious Surface

Impervious surfaces are defined as an area that has been modified such that storm water percolation into underlying soils is reduced or prevented. Examples of surfaces include concrete, asphalt, and roof tops. Existing gravel on a project site prior to the proposed project is considered to be pervious unless documentation is provided that demonstrates that it is impervious. Gravel placed as part of the proposed project is considered to be impervious unless documentation is provided to verify that it is pervious.

Site Determination

For the purposes of this Manual, the impacts that must be accounted for in the SWLID design includes everything within the project site of all improved parcels as well as all offsite or associated public improvements, such as trenching and repaving for utility connections.

11.1.1 Applicability to the Proposed Project

The Town of Windsor will require that a SWLID Plan be submitted that integrates the 2017 SWLID Design Manual guidelines. The proposed project will create more than one acre of impervious surface and will therefore be conditioned to meet treatment and hydromodification control requirements. The hydromodification control design goal requires the project to capture and/or infiltrate and/or reuse one hundred percent of the post project volume.

The proposed project will be designed to implement permanent water quality treatment and hydro-modification control BMPs set forth in the 2017 SWLID; such as treatment of all runoff generated by a one-inch rainfall event in a 24-hour time period falling on all impermeable surfaces, and the exit off the project site of all such storm water at flow rates similar to predevelopment conditions.

11.2 California Department of Fish and Wildlife Protections

11.2.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: “An entity may not 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, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the project’s location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.

(D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
(E) A copy of any other applicable local, state, or federal permit or agreement already issued.
(F) Any other information required by CDFW" (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

11.2.2 APPLICABILITY TO THE PROPOSED PROJECT

Any modifications to Pruitt Creek associated with the project would be subject to CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. The project proposes to create a newly realigned channel for Pruitt Creek which will require alterations to approximately 460 linear feet of channel below the top-of-banks. Prior to initiating this creek realignment, it will be necessary to apply to the CDFW for a Section 1602 Streambed Alteration Agreement. Similarly, two outfall structures are proposed to be installed on the bank of Pruitt Creek. This will also require prior authorization from the CDFW pursuant to Section 1602 of California Fish and Game Code.

It should also be noted that prior to issuance of any permit from the CDFW this agency will require submittal of a Notice of Determination with proof that the Fish and Game Filing Fee was paid, indicating that the Town of Windsor completed a review of the proposed project pursuant to CEQA.

12. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project

is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

12.1.1 Applicability to the Proposed Project

This report has been prepared as a Biology section that is suitable for incorporation by the CEQA lead agency (in this case the Town of Windsor) into a CEQA review document such as a Mitigated Negative Declaration or an Environmental Impact Report. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

13. IMPACTS ANALYSIS

The criteria used in assessing impacts to Biological Resources is presented below.

13.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

13.1.1 THRESHOLDS OF SIGNIFICANCE

13.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact 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 CDFW 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 the CDFW or USFWS.

- Have a substantial adverse effect on federally protected "wetlands" as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) 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.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

13.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the CWA (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

13.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

14. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including, special-status plant and animal species and waters of the United States and/or State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible. This impact assessment is based on an Environmental Impacts Exhibit prepared by BKF and dated May 2021 (Attachment A).

14.1 Impact BIO-1. Development of the Project Would Have a Potentially Significant Impact on Nesting Birds (Potentially Significant)

White-tailed kite, red-tailed hawk, great horned owls, and red-shouldered hawks are all known from the area and could nest on the project site. Common song birds (passerine birds) and mallard ducks (*Anas platyrhynchos*) could also nest on the project site. All of these birds and their eggs and young are protected under California Fish and Game Code Sections 3503, 3503.5. Any project-related impacts to these species would be considered a significant impact. Potential impacts to these species from the proposed project include disturbance to nesting birds and possibly death of adults and/or young. In the absence of survey results, it must be concluded that impacts to nesting raptors and song birds from the proposed project would be **potentially significant pursuant to CEQA.** This impact could be mitigated to a level considered less than significant.

14.2 Mitigation Measure BIO-1. Nesting Birds

To avoid impacts to nesting birds, a nesting survey shall be conducted within 15 days of commencing with construction work or tree removal if this work would commence between February 1st and August 31st. The nesting survey should include an examination of all trees onsite and within 200 feet of the entire project site if possible (i.e., within a zone of influence of nesting birds). The survey should not just be looking at trees slated for removal. The zone of influence includes those areas outside the project site where birds could be disturbed by earth-moving vibrations and/or other construction-related noise.

If birds are identified nesting on or within the zone of influence of the construction project, a qualified biologist shall establish a temporary protective nest buffer around the nest(s). The nest buffer should be staked with orange construction fencing. The buffer must be of sufficient size to protect the nesting site from construction-related disturbance and shall be established by a qualified ornithologist or biologist with extensive experience working with nesting birds near and on construction sites. Typically, adequate nesting buffers are 50 feet from the nest site or nest tree dripline for song birds and up to 300 feet for sensitive nesting birds that include several raptor species known the region of the project site. Upon completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the project site, a qualified ornithologist/biologist that frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm while the project is constructed.

No construction or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. In the region of the project

site, most species complete nesting by mid-July. This date can be significantly earlier or later, and would have to be determined by the qualified biologist. At the end of the nesting cycle, and fledging from the nest by its occupants, as determined by a qualified biologist, temporary nesting buffers may be removed and construction may commence in established nesting buffers without further regard for the nest site.

Implementation of this mitigation measure would reduce impacts to nesting birds to a level considered **less than significant pursuant to CEQA.**

14.3 Impact BIO-2. Development of the Proposed Project Would Have a Significant Impact on Habitat that Could Support Federally-listed Plant Species (Significant)

There is a historical occurrence of Burke's goldfields on the project site (CNDDB Occurrence No. 7). Burke's goldfields is a federally-listed and state-listed endangered species. While the CNDDB occurrence for this species states that it was last updated in 2014, this occurrence record combines several Burke's goldfield populations in the Windsor area into one record which does not accurately depict when Burke's goldfield was last observed on this particular project site. The Burke's goldfield population found on the project site was last seen by Mr. Charlie Patterson in 1989; it has not been found onsite since despite multiple years of surveys by different botanists over a span of over twenty years. Further, neither Sonoma sunshine nor Sebastopol meadowfoam has ever been observed on the project site. Nonetheless, pursuant to the FESA, the USFWS regulates impacts to "suitable habitats" of listed vernal pool plants on the Santa Rosa Plain. Most seasonal wetlands on the Santa Rosa Plain are regarded by the USFWS as "suitable habitat." Thus, impacts to suitable habitat for federally listed plant species must be considered under any development proposal. Impacts to federally and state-listed plant species habitat would be regarded as a **significant impact pursuant to CEQA.** This impact could be mitigated to a level considered less than significant.

14.4 Mitigation Measure BIO-2. Impacts to Suitable Habitat for Federally and State-listed Plant Species

Impacts to suitable habitat for federally listed plant species, specifically Burke's goldfields, can be reduced to less than significant levels through mitigation compensation as outlined below. Approximately 4.59 acres of "suitable" Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine vernal pool habitat is present on the project site. The suitable habitat for these plant species will be avoided to the extent possible by preservation of the habitat in a 12.55-acre conservation easement area/wetland preserve (Attachment A). As previously mentioned, during a meeting held on June 4, 2019, the USFWS determined that the formerly known occupied pools and the other wetlands onsite are currently regarded, in consideration of multiple years of surveys with negative results, as *"suitable habitat" for Burke's goldfields* (Ryan Olah, USFWS, pers. comm. with G. Monk of M&A, June 4, 2019). Thus, the project will have to mitigate for impacts to "suitable habitat" at a 1.5:1 ratio in accordance with the *Programmatic BO* (USFWS 2020). The project is proposing to impact approximately 0.19-acre of seasonal wetlands regarded as suitable habitat, and so will have to purchase Burke's goldfields mitigation credits at a ratio of 1.5:1, amounting to 0.29-acre of mitigation credits from an agency-approved mitigation bank as already negotiated with Mr. Olah (USFWS). The applicant is already in the process of purchasing mitigation credits for impacts to suitable habitat for the Burke's goldfields.

Accordingly, in regards to this project/project site, pursuant to the FESA, the Corps will initiate Section 7 consultation with the USFWS prior to authorizing a Clean Water Act permit for the proposed project that would allow 0.19-acre of seasonal wetlands to be removed from the project site. As part of the USFWS/Corps Section 7 consultation, the USFWS can be expected to prepare a Biological Opinion for the Corps with conditions that require the Applicant to provide mitigation for impacts to suitable federally-listed vernal pool plant habitat. The Corps, in turn, will incorporate the USFWS' conditions of the Biological Opinion into the conditions of any authorized Clean Water Act permit**.**

Implementation of this mitigation measure would reduce the project's impact on federally listed plant habitat to a **less than significant level pursuant to CEQA.**

14.5 Impact 2. Impact BIO-3 The Development Project Would Have a Potentially Significant Adverse Impact on Western Pond Turtle (Potentially Significant).

The western pond turtle is a California "species of special concern." The USFWS is also in preparation of a "12-month finding" to determine whether or not there is enough information to warrant the federal listing of this turtle species. The 12-month finding is expected in the summer of 2021. The closest occurrence of this species to the project site is a 2010 record located 0.8-mile west of the project site (Occurrence No. 1219). This turtle could be found in Pruitt Creek and the proposed re-routing of Pruitt Creek may result in impacts to individual western pond turtles who may be present in the creek at the time earth-work takes place. Additionally, at this time, it is not known if the western pond turtle uses the project site for nesting or haul out locations. If any pond turtle nest sites are identified on the project site, impacts to pond turtle adults, their eggs, or their hatchlings could occur from site development. These impacts are considered **potentially significant** pursuant to CEQA. This impact could be mitigated to a level considered less than significant. Mitigation to offset this impact is discussed below.

14.6 Mitigation Measure BIO-3. Western Pond Turtle

Preconstruction upland surveys and aquatic surveys for turtles and their nests shall be conducted by a qualified biologist 30 days prior to construction regardless of the time of year because young turtles (hatchlings) over-winter in the nest. If nests are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators. The nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fencing to avoid impacts to the eggs or hatchlings over-wintering at the nest site. Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by a qualified western pond turtle biologist (that is, a biologist who has identified pond turtles before). If no nests are found, no further consideration for western pond turtle nests is warranted. Implementation of these mitigation measures would decrease the impacts to **less than significant pursuant to CEQA.**

14.7 Impact BIO-4. Development of the Proposed Project Would Have a Significant Impact on Waters of the United States and/or State (Significant)

According to the Corps confirmed Preliminary Jurisdictional Determination (PJD), there are 5.15 acres of waters of the United States on the project site. Of these 5.15 acres, 4.59 acres are "seasonal wetlands," and 0.56-acre are "other waters" (Pruitt Creek) of the United States/State. The proposed project will result in impacts to areas that are within the Corps' and RWQCB's jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Under the current project design, 0.29-acre of waters of the United States/State would be impacted (filled) as illustrated in the Environmental Impacts Exhibit prepared by BKF (Attachment A). This 0.29-acre of impact is broken down into:

3. 0.19-acre of seasonal wetlands being filled to accommodate the housing development and associated infrastructure;
4. 0.10-acre of impact to Pruitt Creek (other waters of the United State/State) from:
    (c) Construction of a realigned channel which will require tying the new creek alignment into the upstream and downstream ends of the existing creek which will result in impacts to approximately 375 linear feet of Pruitt Creek below the ordinary high water marks in these up and downstream locations (Attachment A).
    (d) Installation of two outfall structures along the northern bank of Pruitt Creek below the ordinary high water marks as shown in Attachment A.

Finally, in a meeting with the RWQCB, M&A was told that any project impacts within 20 feet of the seasonal wetlands onsite would affect the wetland watershed and thus, the RWQCB would require mitigation for such indirect impacts at a 1:1 impacts to mitigation ratio (see Attachment A) (Ms. Kaete King, RWQCB, in a meeting with M&A, BKF Engineers and the applicant). The project as currently proposed would impact 0.20-acre of wetland buffer areas. Impacts to waters of the United States/State from the proposed project would be regarded as a **significant impact pursuant to CEQA.** Such impacts could be mitigated to a level considered less than significant.

14.8 Mitigation Measure BIO-4. Impacts to Waters of the United States and/or State

Impacts to waters of the United States and/or State can be reduced to less than significant levels through various means, including avoidance, minimization of impacts, and mitigation compensation. Based on the Corps-confirmed map, jurisdictional waters within the project area will be avoided by the project to the extent feasible. Where avoidance of jurisdictional waters is not practicable and impacts must occur in order to have a viable project, mitigation compensation will be necessary. Mitigation proposed to reduce the project's impacts to waters of the U.S./State to a less than significant level is as follows:

1. A Conservation Easement (i.e., wetland preserve) totaling 12.55 acres, protecting approximately 4.2 acres of seasonal wetland and the newly aligned Pruitt Creek will be established as part of the project, recorded and granted to a qualified land conservator who will manage the wetland preserve in perpetuity using a "non-wasting" endowment funding source.

2. Wetlands outside the preserve that will be impacted by the project will be mitigated for at a 1:1 ratio by (1) preservation of wetlands in the onsite wetland preserve; and (2) purchase of wetland mitigation credits at a 1:1 ratio from a qualified wetland mitigation bank.

3. Impacts to areas of Pruitt Creek below the ordinary high water marks will be mitigated by the reconstruction and widening of this creek which will create greater jurisdictional acreage (i.e., waters) and channel capacity than currently exists on site. In addition, a riparian enhancement planting plan will be implemented along Pruitt Creek which will enhance the existing habitat.

4. For any area of the project site where buffers around the wetlands to be preserved are reduced to 20 feet or less, impacts to the buffers shall be mitigated for at a 1:1 ratio by preservation of existing wetlands with the 12.55-acre wetland preserve.

Impacts to the preserved wetlands shall be avoided during project construction by the use of Best Management Practices to protect preserved wetlands and ensure protection of water quality in wetlands and other waters within the watershed. These practices can include installing orange construction fencing backed by silt fencing, hay or gravel wattles, and other protective measures to prevent equipment from entering protected areas and to prevent sedimentation or de minimus fill from impacting the preserved wetlands or Pruitt Creek. During project construction, a biological monitor shall be on-site to monitor the integrity of preserved wetlands and other waters, and to ensure that there are no impacts to Pruitt Creek below the ordinary high water marks except where authorized by permits issued by the Corps and RWQCB.

For those jurisdictional areas that cannot be avoided and must be filled, permits from the Corps and RWQCB shall be acquired that allows for the removal of specified waters of the US/State. Proof of a Section 404 permit from the Corps and a Section 401 water quality certification (permit) from the RWQCB shall be provided to the Town. Any conditions or stipulations in the Section 404 and 401 permits issued for this project will become conditions of project approval.

Finally, the RWQCB will require a complete pre- and post-development Best Management Practices Plan (BMPs) of any portion of the project site that is graded. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) will be developed prior to the time that a site is graded. In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) will be developed and incorporated into the project plans to ensure that there are no impacts to downstream receiving waters. The SWMP will need to be submitted to RWQCB for approval.

Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered **less than significant pursuant to the CEQA**.

14.9 Impact BIO-5. Development of the Proposed Project Would Have a Significant Impact to CDFW Section 1602 Jurisdictional Areas (Significant)

Pruitt Creek is a channel with a bed and bank, and as such is within the CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. The proposed creation of a new, realigned channel next to the existing Pruitt Creek channel will impact approximately 460 linear feet of the existing channel below the top of banks to tie both channels together (see Attachment A. Impact Exhibit). This new channel construction and any additional impacts to riparian vegetation as illustrated by BKF in the Environmental Impacts Exhibit dated May 2021, will be subject to CDFW regulation. Impacts to CDFW Section 1602 jurisdiction would be regarded as a **significant impact pursuant to CEQA.** This impact could be mitigated to a level considered less than significant.

14.6 Mitigation Measure BIO-5. Impacts to CDFW Section 1602 Jurisdictional Areas

The applicant shall secure an SBAA from the CDFW and implement all measures identified in the SBAA including but not limited to the following:

- To avoid fuels, lubricants, soils and other pollutants from entering Pruitt Creek, wildlife friendly hay wattles (that is, no mono-filament netting) and silt fending shall be installed at the top of bank. The use of mulch or any other substitute that may enter into the creek shall be prohibited.

- Staging, operation and maintenance of heavy duty construction equipment shall be located away from Pruitt Creek at all times and well outside of the riparian corridor unless the equipment is needed to specifically work on the realignment of Pruitt Creek or the outfalls for the project.

- To mitigate for any impacts to the riparian corridor of Pruitt Creek, disturbed areas shall be revegetated with native riparian plant species. Replacement of riparian trees to be removed shall be planted near the creek as feasible and/or adjacent to the existing limits of the riparian corridor to contribute to the existing riparian canopy. Riparian plantings shall be maintained for a minimum of 5 years to ensure that the canopy is enhanced and the understory restored.

- Non-native and invasive ornamental landscaping shall be precluded from use proximate to Pruitt Creek.

- To avoid debris from entering Pruitt Creek, the final roadway design shall provide for enclosed and accessible trash receptacles (located outside of the riparian corridor).

- New lighting introduced by the project shall be downcast and precluded from spilling over to the riparian corridor as direct lighting along creek corridors has a negative impact on nocturnal wildlife.

Any further requirements set forth in the Streambed Alteration Agreement (SBAA) issued for the project from the CDFW, such as specific erosion control measures near the creek, shall also be implemented.

Implementation of these measures would reduce significant impacts to Section 1602 jurisdictional areas to a level considered **less than significant pursuant to CEQA.**

14.10 Impact BIO-6. Development of the Project Would Have a Significant Adverse Impact on Town Protected Trees (Significant).

According to the Town of Windsor *Tree Preservation and Protection Ordinance*, a "Protected Tree" is: "**E.** Any tree required to be planted or preserved as environmental mitigation for a discretionary permit." Fifteen valley oak trees were planted along Pruitt Creek over a decade ago as part of a mitigation planting plan that was implemented on the project site. These valley oak trees average two inches in diameter at breast height (DBH). Some of these trees may be removed due to the construction of the Pruitt Creek realigned channel. Removal of any of these protected oak trees would be a **significant adverse impact pursuant to CEQA**. This impact could be mitigated to a less than significant level.

14.11 Mitigation Measure BIO-6. Impacts to Town Protected Trees

As there is a tree ordinance in place that protects trees that were planted as part of a mitigation planting plan, mitigation will be prescribed by the Town of Windsor for this project at an appropriate ratio when it is time to issue a discretionary permit for the proposed project. Tree mitigation would likely include replacement oak tree planting along the newly realigned Pruitt Creek channel and installation of an automatic watering system for a period of three years until the planted oak trees become established. This mitigation measure would reduce the project's impact to protected trees to a **less than significant level pursuant to CEQA**.

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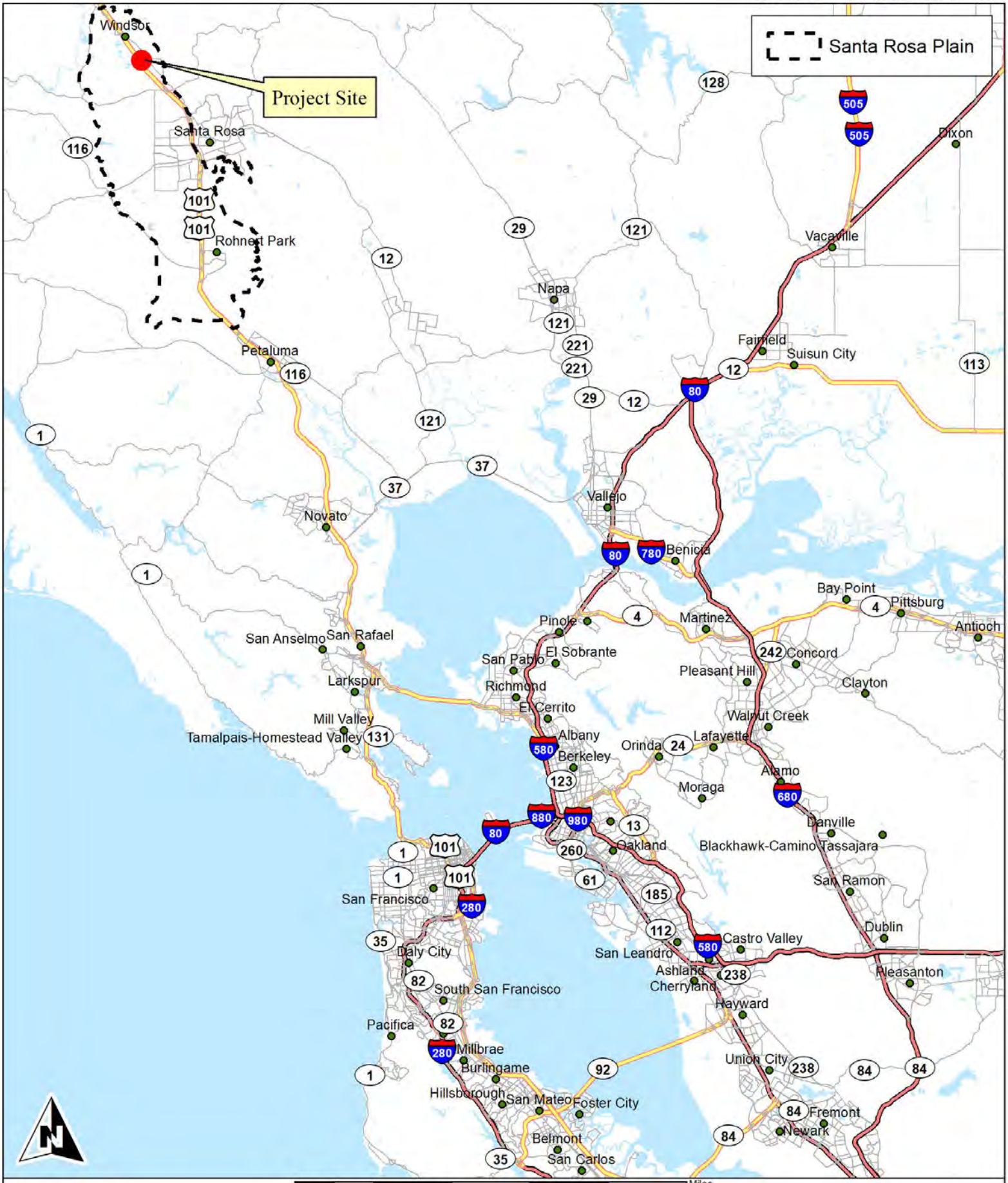
guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants).

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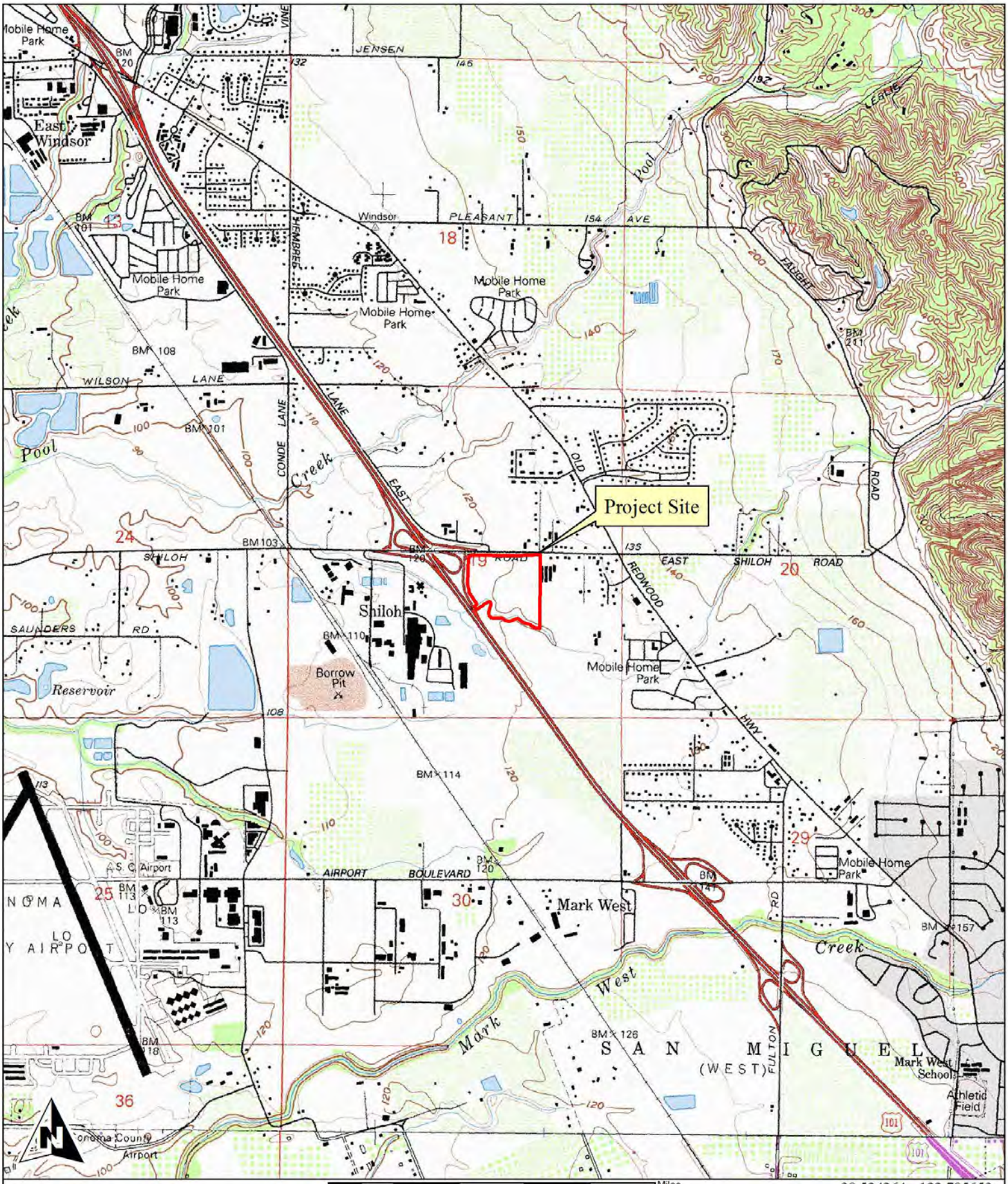
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Figure 1. Clearwater at Windsor Project Site
Regional Map
Town of Windsor, California

County: Sonoma
Map Preparation Date: April 26, 2021



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Figure 2. Clearwater at Windsor Project Site
Location Map
Town of Windsor, California

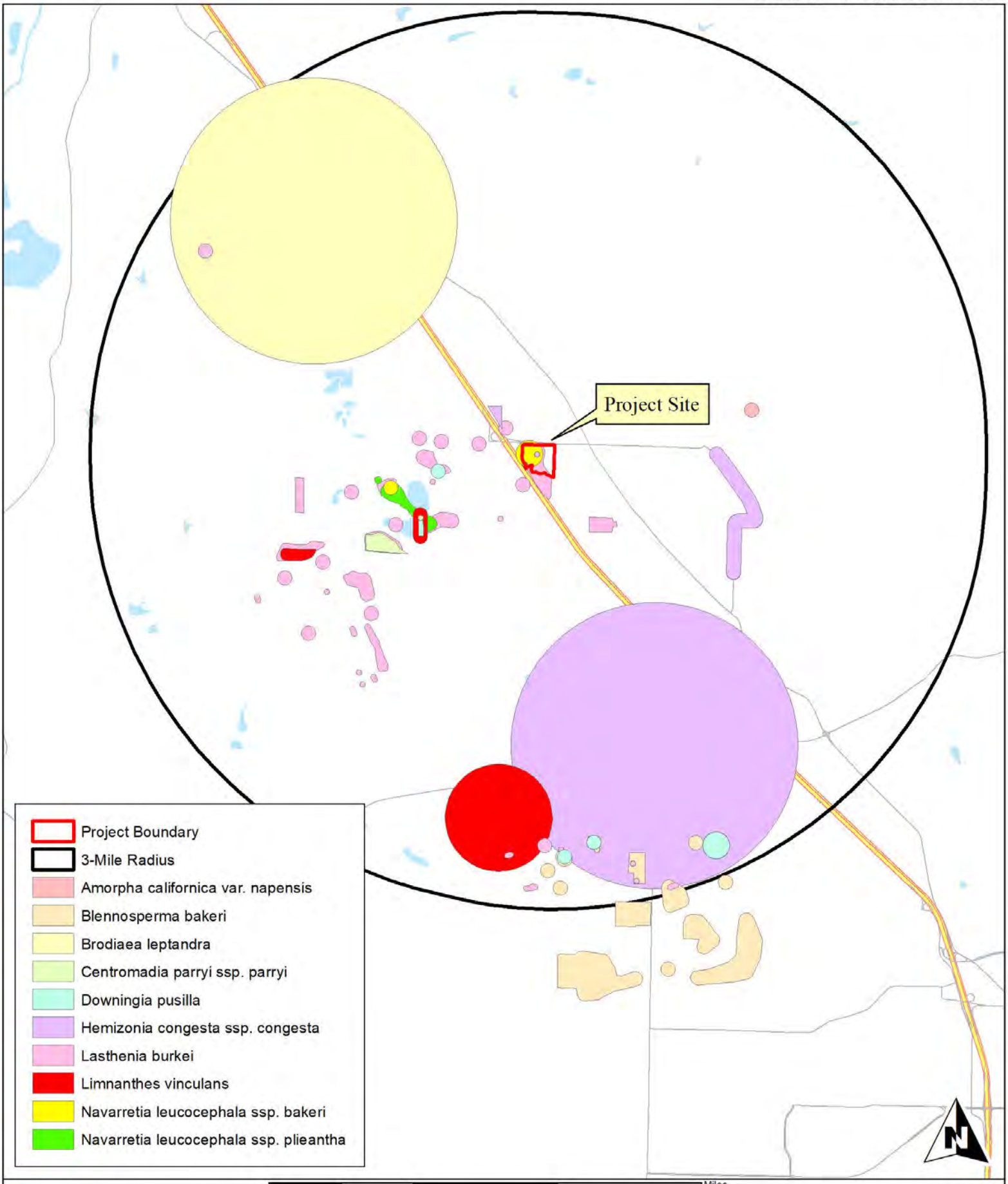
38.524264 -122.785653
Section: 19; T8N R8W
7.5-Minute Healdsburg quadrangle
HUC08 Watershed CA: Russian
Topography Source: USGS
Map Preparation Date: April 2, 2019



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Figure 3. Aerial Photograph of the Clearwater at Windsor Project Site Town of Windsor, California

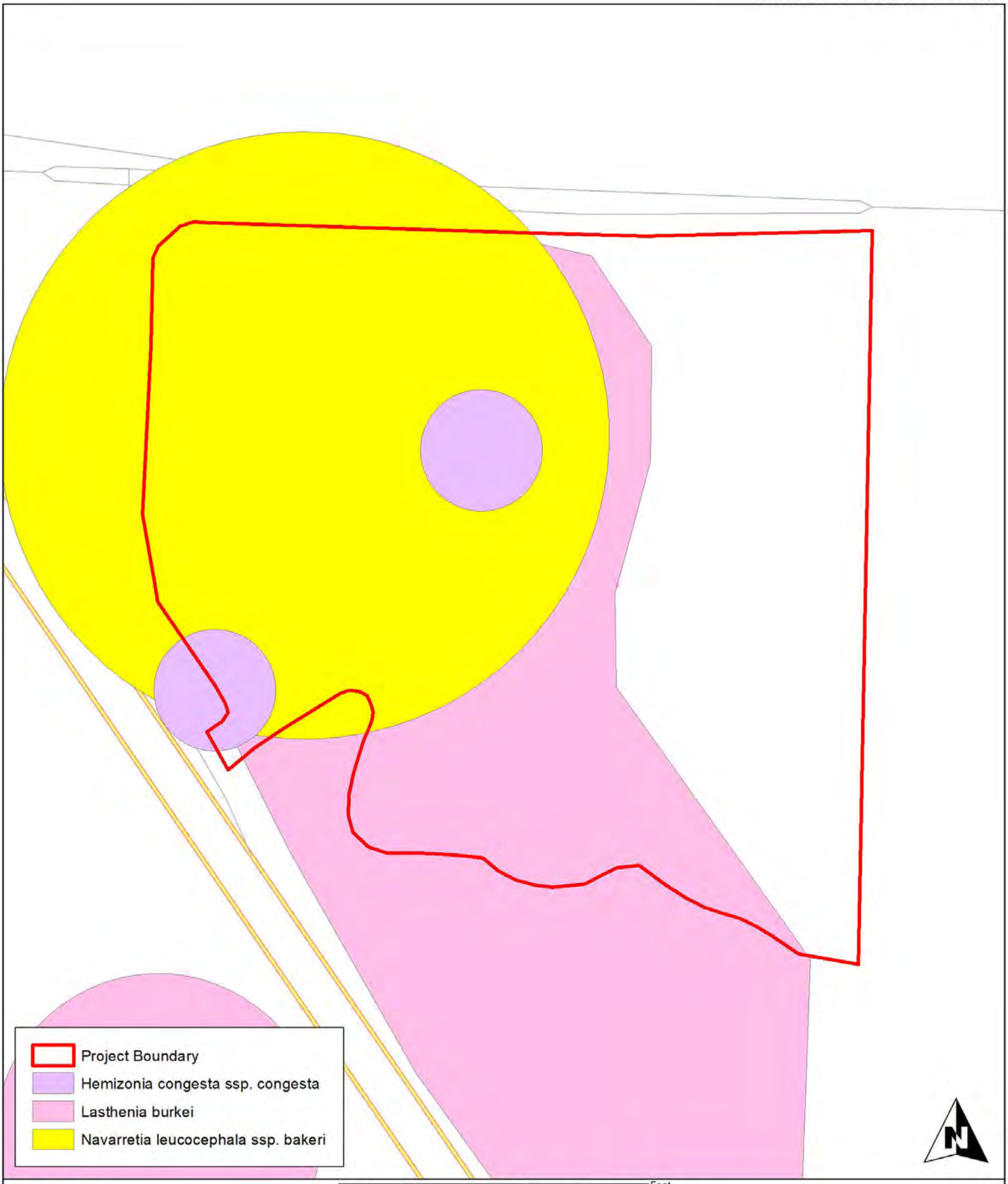
Aerial Photograph Source: ESRI
Map Preparation Date: April 26, 2021



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Figure 4. Known Special-Status CNDDB Plant Species Within 3 Miles of the Clearwater at Windsor Project

Map Preparation Date:
April 26, 2021
3-Mile Radius
Source: CDFW,
California Natural Diversity Data Base, 2021



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Figure 5. Known Special-Status CNDDB Plant Species
On the
Clearwater at Windsor Project

Map Preparation Date:
April 26, 2021
Source: CDFW,
California Natural Diversity Data Base, 2021

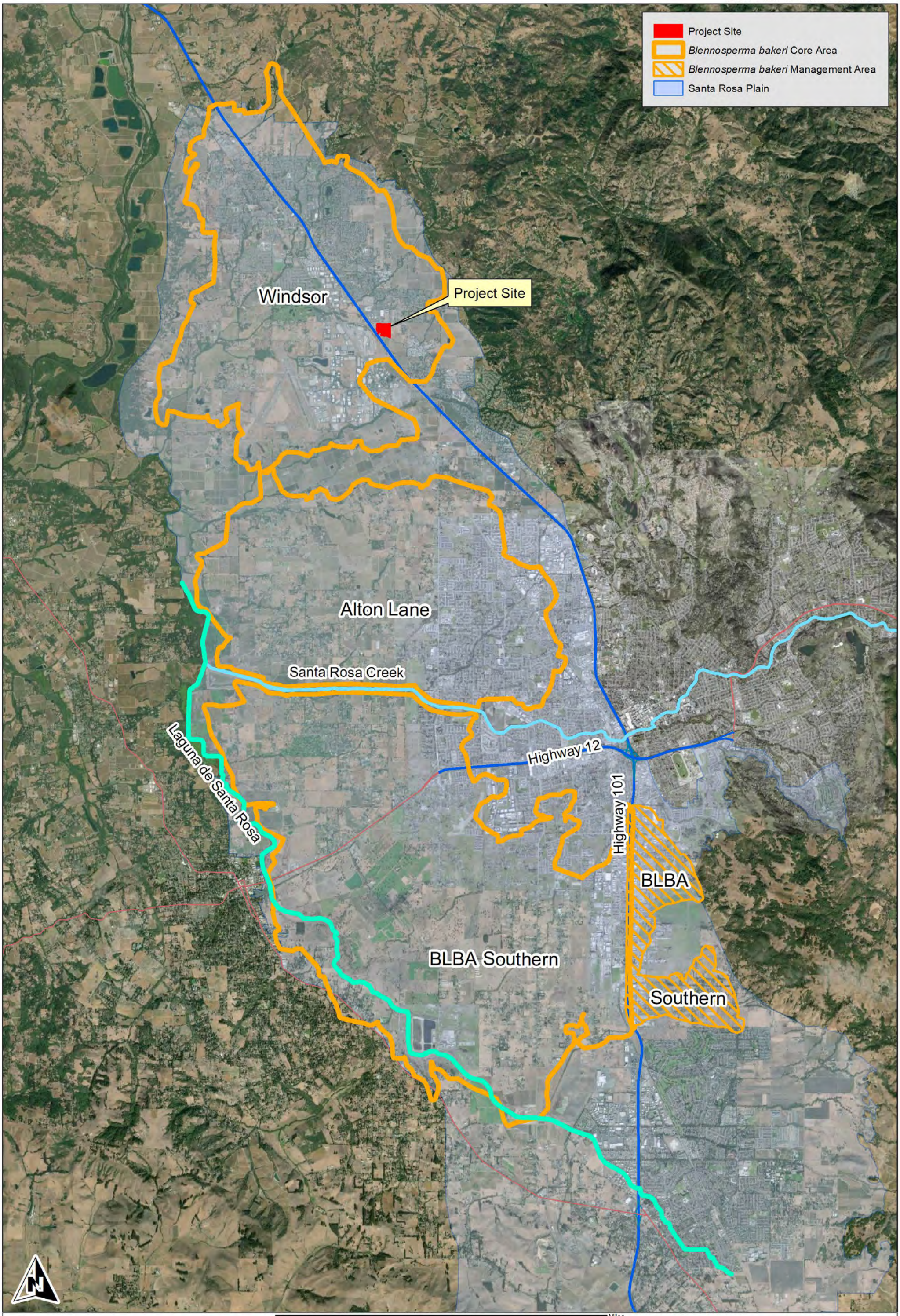
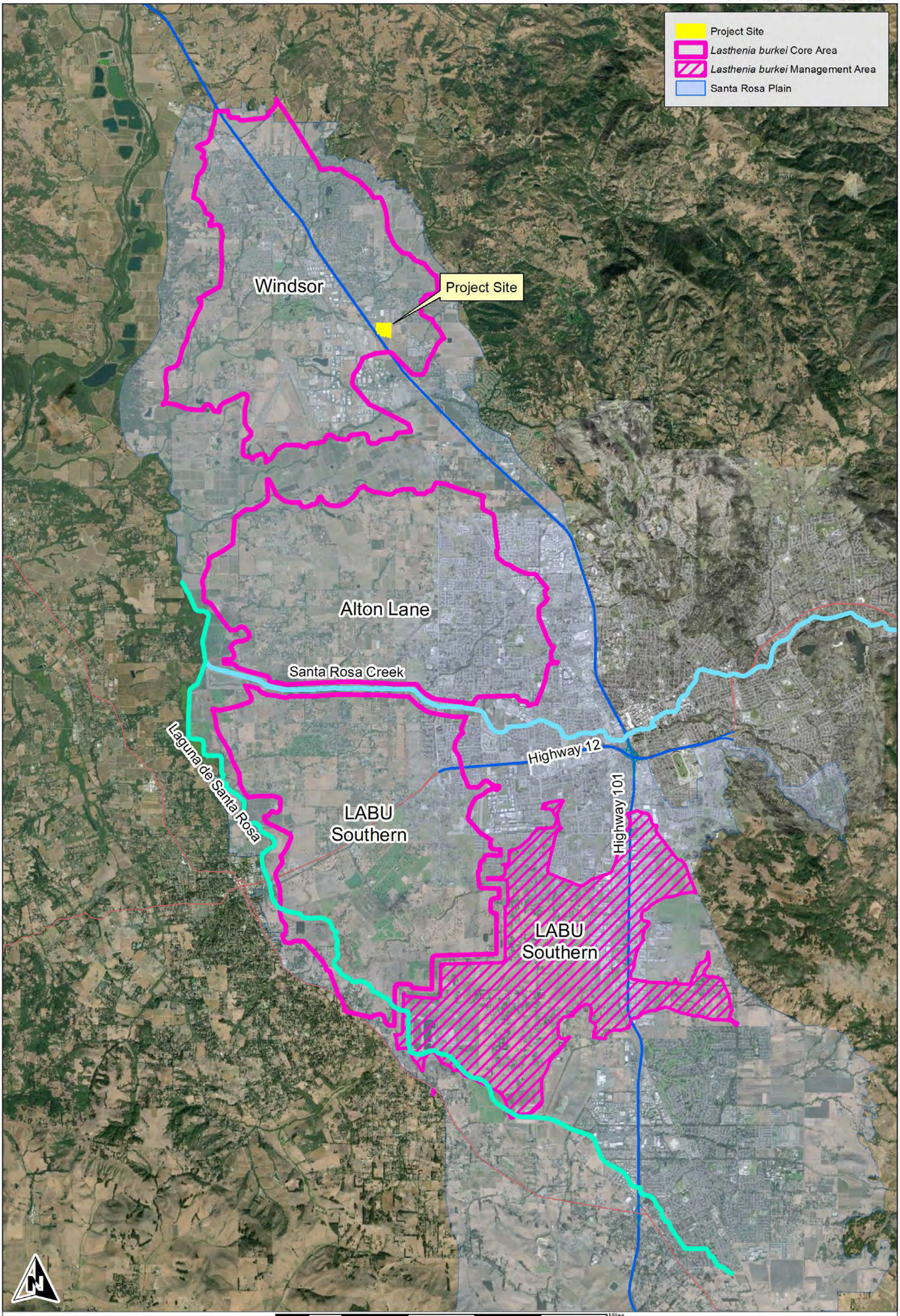


Figure 6. *Blennosperma bakeri* Core and Management Areas (from USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site

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County: Sonoma
Aerial Photograph Source: ESRI
Map Preparation Date: May 19, 2021



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Figure 7. *Lasthenia burkei* Core and Management Areas (from USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site

County: Sonoma
Aerial Photograph Source: ESRI
Map Preparation Date: May 19, 2021

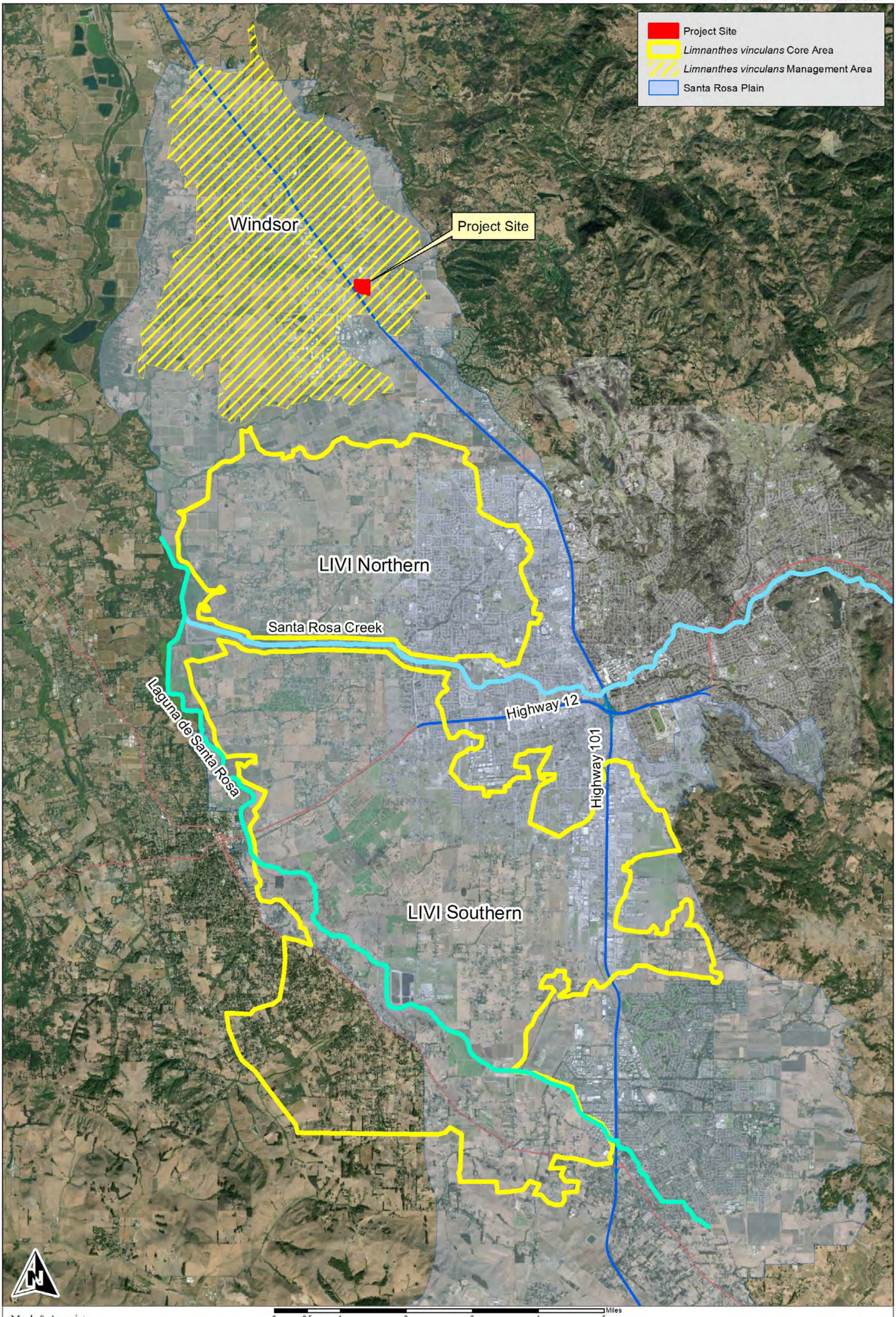
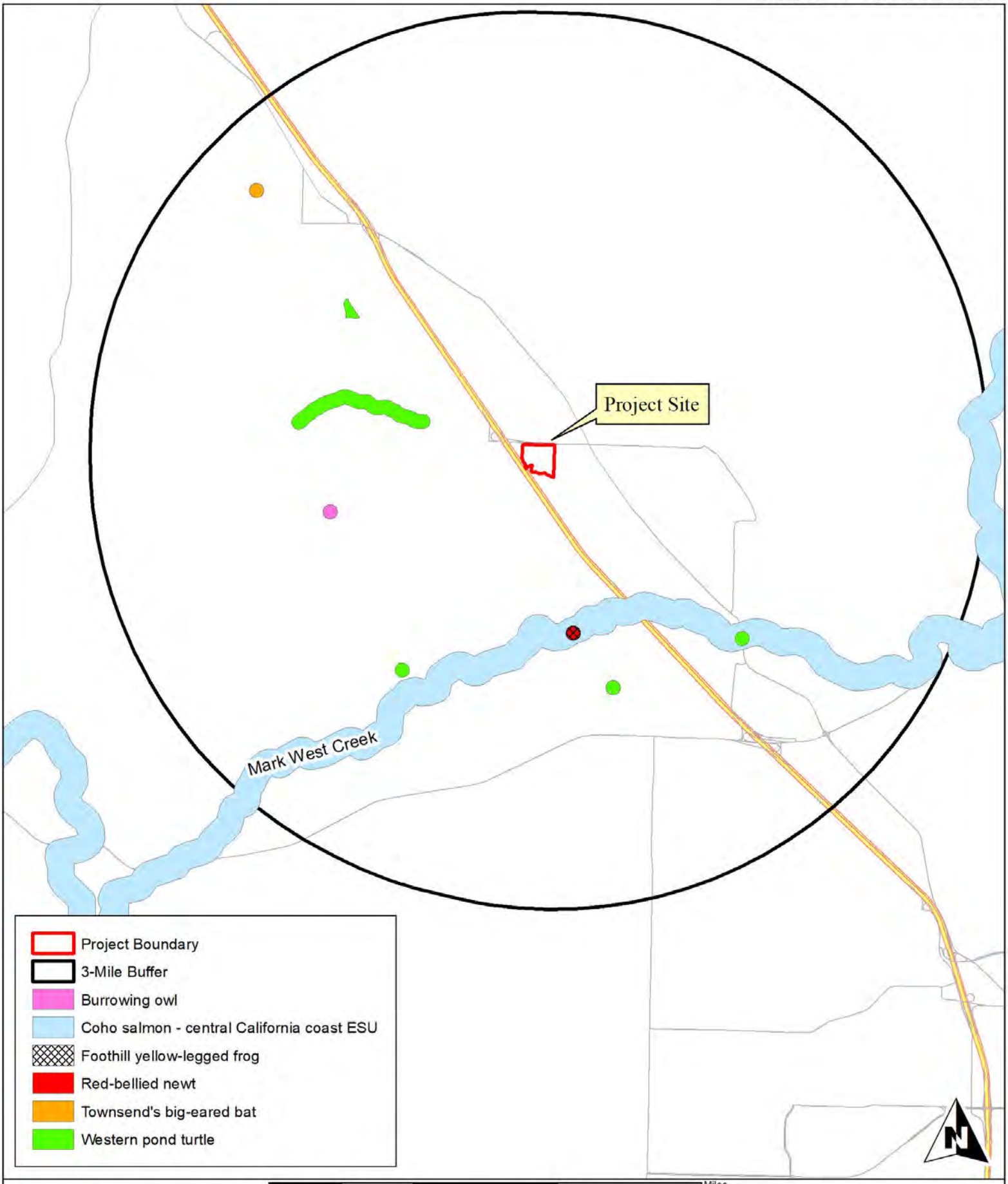


Figure 8. *Limnanthes vinculans* Core and Management Areas (from USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site

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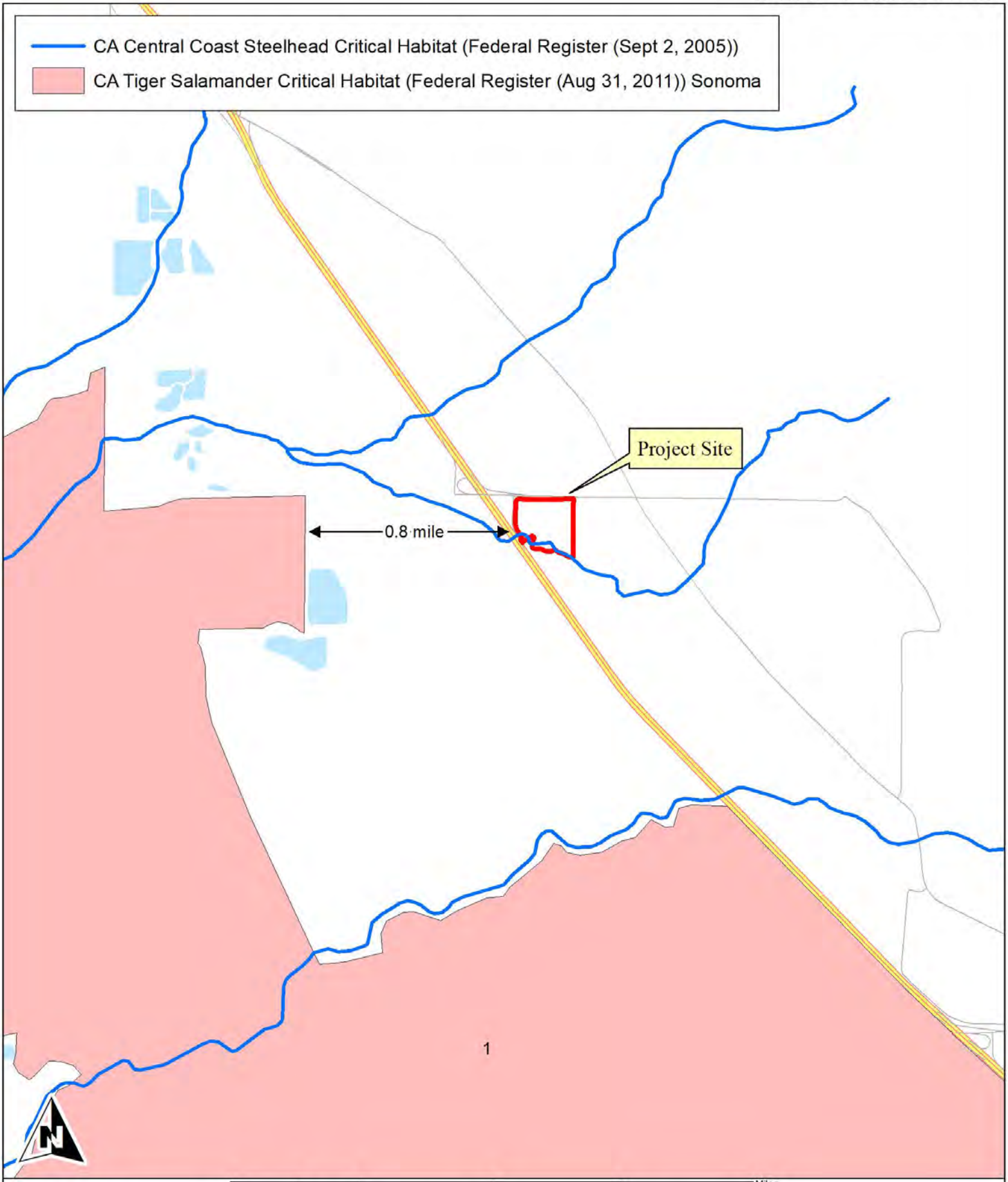
County: Sonoma
Aerial Photograph Source: ESRI
Map Preparation Date: May 19, 2021



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Figure 9. Known Special-Status CNDDB Wildlife Species Within 3 Miles of the Clearwater at Windsor Project

Map Preparation Date:
May 19, 2021
3-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2021



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Figure 10. USFWS Critical Habitat in the Vicinity of the Clearwater at Windsor Project Site Town of Windsor, California

Source: USFWS
Map Preparation Date: May 19, 2021

Project Site

Figure 3
SANTA ROSA PLAIN
CONSERVATION STRATEGY MAP

- Santa Rosa Plain Conservation Strategy Study Area
- Urban Growth Boundaries
- City Limits

Strategy Designations

- Future Development
- Potential Future Development
- CTS Conservation Areas
- Windsor Listed Plant Conservation Areas and Soutwest Santa Rosa Preserve System
- CTS Corridor
- Areas Within 1.3 miles of Known breeding
- Potential for Presence of CTS and Listed Plants
- Potential for Presence of CTS
- Presence of CTS is not likely but Mitigation for listed plants may be required
- Presence of CTS is not likely and there are no listed plants in this area
- Already Developed (no potential for impact)

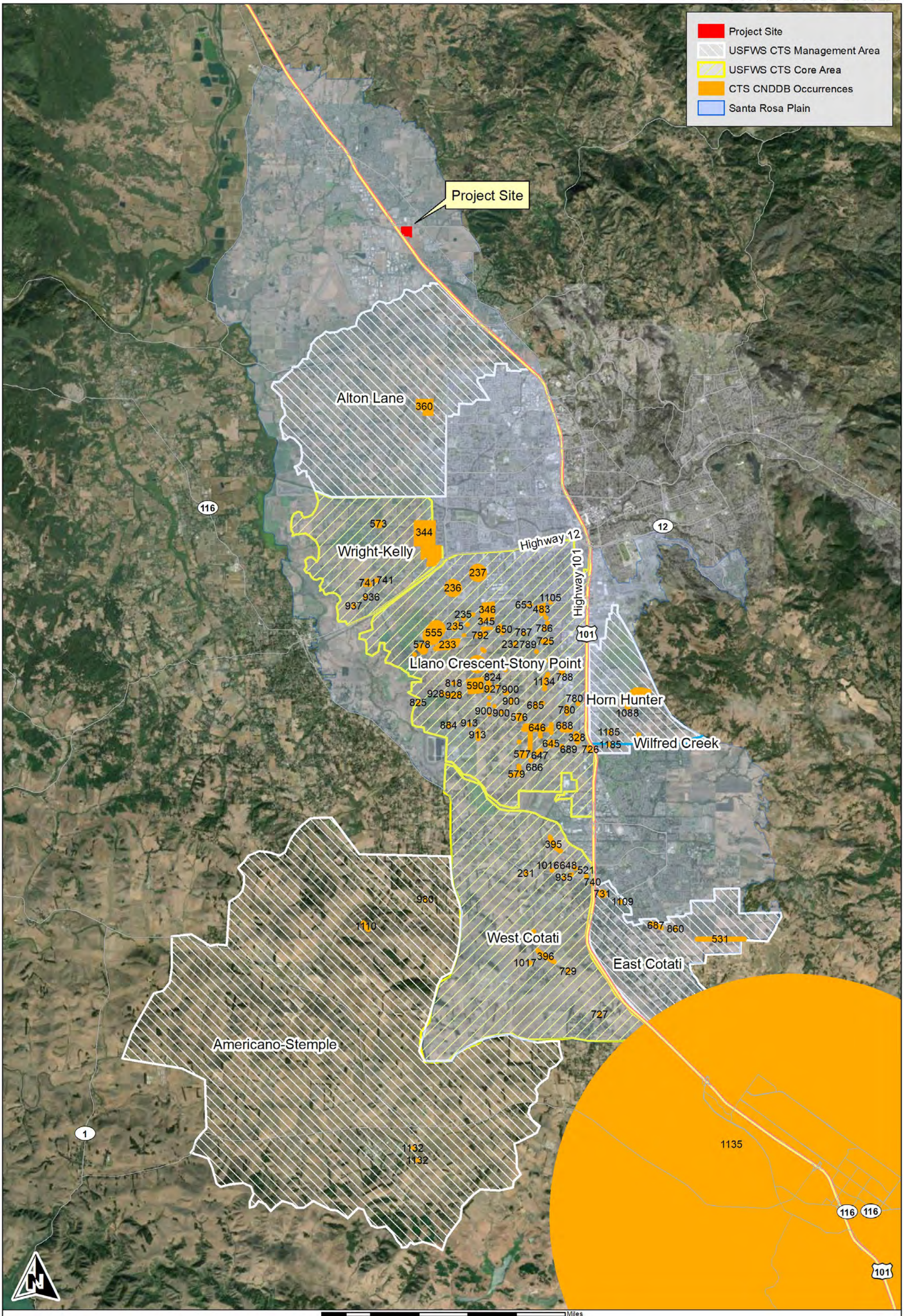
Mitigation Banks and Preserves

- EXISTING
- PENDING

Prepared on 4/16/2007
California Department of Fish and Game

Note that surveying for wetlands is required throughout the Study Area

Figure 11. Santa Rosa Plain Conservation Strategy Map as shown on Figure 3 of USFWS' 2007 Conservation Strategy.



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Figure 12. Santa Rosa Plain California Tiger Salamander Core and Management Areas (USFWS 2016) in the Vicinity of the Clearwater at Windsor Project Site

County: Sonoma
Aerial Photograph Source: ESRI
Map Preparation Date: May 19, 2021

Table 1

Plant Species on the Clearwater at Windsor Project Site

Ferns and Allies

Azollaceae

Azolla filiculoides	Large mosquito fern

Angiosperms - Dicots

Apiaceae

**Conium maculatum*	Poison hemlock
**Daucus carota*	Queen Anne's lace
Eryngium aristulatum var. aristulatum	California coyote-thistle
**Foeniculum vulgare*	Sweet fennel
**Torilis arvensis*	Tall sock destroyer

Asteraceae

Achyrachaena mollis	Blow-wives
**Anthemis cotula*	Mayweed
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. pilularis	Baccharis
**Calendula arvensis*	Field-marigold
**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Centaurea calcitrapa*	Purple starthistle
Centromadia fitchii	Fitch's spikeweed
**Cichorium intybus*	Chicory
Erigeron canadensis	Horseweed
**Helminthotheca echioides*	Bristly ox-tongue
Hemizonia congesta subsp. congesta	White seaside tarplant
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
**Lactuca saligna*	Willow lettuce
**Lactuca serriola*	Prickly lettuce
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle
**Sonchus asper subsp. asper*	Prickly sow-thistle
**Sonchus oleraceus*	Common sow-thistle
**Taraxacum officinale*	Common dandelion
**Tragopogon porrifolius*	Common salsify
Xanthium spinosum	Spiny cocklebur
Xanthium strumarium	Cocklebur

Boraginaceae

Plagiobothrys bracteatus	Bracted popcornflower

Brassicaceae

**Brassica rapa*	Field mustard
**Hirschfeldia incana*	Short-podded mustard
Lepidium nitidum	Shining peppergrass
**Raphanus raphanistrum*	Jointed charlock
**Raphanus sativus*	Wild radish

Table 1

Plant Species on the Clearwater at Windsor Project Site

Campanulaceae	
Downingia concolor var. concolor	Downingia
Caryophyllaceae	
**Spergula arvensis*	Stickwort
**Spergularia rubra*	Ruby sand-spurrey
Chenopodiaceae	
**Atriplex prostrata*	Hastate orache
Convolvulaceae	
**Convolvulus arvensis*	Bindweed
Dipsacaceae	
**Dipsacus fullonum*	Wild teasel
Euphorbiaceae	
Croton setiger	Turkey mullein
Fabaceae	
Acmispon americanus var. americanus	Spanish-clover
**Lotus corniculatus*	Birdfoot trefoil
Lupinus bicolor	Bicolored lupine
**Medicago polymorpha*	California burclover
**Trifolium dubium*	Little hop clover
**Trifolium hirtum*	Rose clover
**Trifolium incarnatum*	Crimson clover
**Trifolium subterraneum*	Subterranean clover
Trifolium willdenovii	Tomcat clover
**Vicia benghalensis*	Purple vetch
**Vicia sativa subsp. sativa*	Spring vetch
Fagaceae	
Quercus lobata	Valley oak
Gentianaceae	
**Centaurium tenuiflorum*	Slender centaury
Geraniaceae	
**Erodium botrys*	Broad-leaf filaree
**Erodium brachycarpum*	Short-fruited stork's-bill
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
**Geranium dissectum*	Cut-leaf geranium
Juglandaceae	
Juglans hindsii	Northern California black walnut
Lamiaceae	
**Lamium amplexicaule*	Deadnettle
**Marrubium vulgare*	Horehound
**Mentha pulegium*	Pennyroyal

* Indicates a non-native species

Table 1

Plant Species on the Clearwater at Windsor Project Site

Limnanthaceae	
Limnanthes douglasii subsp. nivea	Douglas' meadowfoam
Lythraceae	
**Lythrum hyssopifolia*	Hyssop loosestrife
Malvaceae	
**Malva parviflora*	Cheeseweed
Myrsinaceae	
**Lysimachia arvensis*	Scarlet pimpernel
Onagraceae	
Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum	Hairy willow-herb
Epilobium densiflorum	Dense-flower spike-primrose
Orobanchaceae	
**Parentucellia viscosa*	Yellow glandweed
Triphysaria versicolor subsp. faucibarbata	Yellow owl's-clover
Papaveraceae	
Eschscholzia californica	California poppy
Plantaginaceae	
**Kickxia spuria*	Round-leaved toadflax
**Plantago lanceolata*	English plantain
Veronica peregrina subsp. xalapensis	Purslane speedwell
Polygonaceae	
Persicaria lapathifolia	Willow weed
**Rumex acetosella*	Sheep sorrel
**Rumex conglomeratus*	Green dock
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock
Ranunculaceae	
**Ranunculus muricatus*	Spiny-fruit buttercup
Ranunculus occidentalis var. occidentalis	Western buttercup
Rosaceae	
Rosa californica	California rose
**Rubus armeniacus*	Himalayan blackberry
Rubiaceae	
Galium aparine	Goose grass
Salicaceae	
Populus sp.	Cottonwood
Salix exigua	Narrow-leaved willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow

* Indicates a non-native species

Table 1

Plant Species on the Clearwater at Windsor Project Site

Sapindaceae	
Aesculus californica	California buckeye
Scrophulariaceae	
Scrophularia californica	California figwort
Angiosperms -Monocots	
Agavaceae	
Chlorogalum pomeridianum var. pomeridianum	Soap plant
Alliaceae	
**Allium triquetrum*	Onion
Cyperaceae	
Cyperus eragrostis	Tall flatsedge
Eleocharis macrostachya	Creeping spikerush
Schoenoplectus acutus var. occidentalis	Common tule
Iridaceae	
Sisyrinchium bellum	Western blue-eyed grass
Juncaceae	
Juncus bufonius var. bufonius	Toad rush
Juncus patens	Spreading rush
Juncus phaeocephalus	Brown-headed rush
Juncaginaceae	
Triglochin scilloides	Flowering quillwort
Poaceae	
**Agrostis stolonifera*	Spreading bent
**Anthoxanthum odoratum*	Sweet vernal grass
**Avena barbata*	Slender wild oat
**Avena fatua*	Wild oat
**Briza maxima*	Rattlesnake grass
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Cynosurus echinatus*	Dogtail Grass
Distichlis spicata	Saltgrass
**Elymus caput-medusae*	Medusahead
Elymus glaucus	Blue wildrye
Elymus triticoides	Creeping wildrye
**Festuca bromoides*	Brome fescue
**Festuca myuros*	Rattail sixweeks grass
**Festuca perennis*	perennial ryegrass
**Glyceria declinata*	Low mannagrass
Hordeum brachyantherum subsp. brachyantherum	Northern barley
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum*	Wall barley
**Hordeum murinum subsp. leporinum*	Hare barley

* Indicates a non-native species

Table 1

Plant Species on the Clearwater at Windsor Project Site

**Paspalum dilatatum*	Dallis grass
**Phalaris aquatica*	Harding grass
**Phalaris paradoxa*	Paradox canary-grass
Pleuropogon californicus var. californicus	Annual semaphore grass
**Polypogon monspeliensis*	Annual beard grass
**Triticum aestivum*	Wheat
Themidaceae	
Brodiaea elegans subsp. elegans	Harvest brodiaea
Dichelostemma capitatum subsp. capitatum	Blue dicks
Triteleia hyacinthina	White brodiaea
Typhaceae	
Typha latifolia	Broad-leaved cattail

* Indicates a non-native species

Table 2
Wildlife Species Observed on the Clearwater at Windsor Project Site

Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Pacific gopher snake	*Pituophis catenifer catenifer*
Birds	
Great egret	*Ardea alba*
Turkey vulture	*Cathartes aura*
Mallard	*Anas platyrhynchos*
Cooper's hawk	*Accipiter cooperii*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Eurasian collared-dove	*Streptopelia decaocto*
Nuttall's woodpecker	*Picoides nuttallii*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Barn swallow	*Hirundo rustica*
Bewick's wren	*Thryomanes bewickii*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
American pipit	*Anthus rubescens*
Yellow-rumped warbler	*Setophaga coronata*
Savannah sparrow	*Passerculus sandwichensis*
Song sparrow	*Melospiza melodia*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Lesser goldfinch	*Spinus psaltria*
American goldfinch	*Spinus tristis*
Mammals	
Botta's pocket gopher	*Thomomys bottae*
California meadow vole	*Microtus californicus*

Table 3

Special-Status Plant Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Asteraceae					
Blennosperma bakeri Sonoma sunshine	Fed: FE State: CE CNPS: Rank 1B.1	February-April	Valley and foothill grassland (mesic); vernal pools.	Closest known record is 0.9-mile southwest of the project site from 1998 (Occurrence No.32).	Project in mapped extent of species. Never observed onsite in multiple survey years. Will mitigate impacts to suitable habitat at 1.5:1 ratio per 2019 mitigation agrmnt. with USFWS.
Centromadia parryi parryi Pappose tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernally wet grassland (sometimes alkaline).	Closest known record is 1.1 miles southwest of the project site from 2004 (Occurrence No.28).	This species was not observed during multiple years of rare plant surveys conducted on the project site. No impact expected.
Hemizonia congesta congesta White seaside tarplant	Fed: - State: - CNPS: Rank 1B.2	April-November	Valley and foothill grassland. 20 to 560 meters. Clay soils	Closest known record for this species is located on the project site from 2016 (Occurrence No.44).	The species was observed onsite. Will be protected in a wetland preseve onsite. See text.
Lasthenia burkei Burke's goldfields	Fed: FE State: CE CNPS: Rank 1B.1	April-June	Meadows and seeps (mesic); vernal pools.	Closest known record for this species is located on the project site from 1989 (Occurrence No.7).	Has not been observed on site since 1989 despite multiple years of surveys. Mitigation for impacts to "suitable habitat" only per a meeting with USFWS. See text.
Campanulaceae					
Downingia pusilla Dwarf downingia	Fed: - State: - CNPS: Rank 2.2	March-May	Valley and foothill grassland (mesic); vernal pools.	Closest known record is 0.6-mile west of the project site from 1994 (Occurrence No.87).	This species was not observed during multiple years of rare plant surveys conducted on the project site. No impact expected.
Fabaceae					
Amorpha californica napensis Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	Closest known occurrence is 1.4 miles east of the project site from 2014 (Occurrence No.67).	This species was not observed during multiple years of rare plant surveys conducted on the project site. No impact expected.

Table 3

Special-Status Plant Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Limnanthaceae					
Limnanthes vinculans Sebastopol meadowfoam	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Meadows (mesic); vernal pools.	Closest known record for this species is 0.9 mile southwest of the project site from 1990 (Occurrence No.50).	Project located in mapped extent of species. Never observed onsite in multiple survey years. Will mitigate for impacts to suitable habitat at 1.5:1 ratio, per 2019 mitigation agrmnt with USFWS.
Polemoniaceae					
Leptosiphon jepsonii Jepson's leptosiphon	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; cismontane woodland (usually volcanic).	Closest known occurrence is 3.0 miles northeast of the project site from 1992 (Occurrence No.25).	This species was not observed during multiple years of rare plant surveys conducted on the project site. No impact expected.
Navarretia leucocephala bakeri Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	Closest known record for this species is located on the project site from 1989 (Occurrence No.5).	This species was not observed during multiple years of rare plant surveys conducted on the project site between the 1990s and 2016. No impact expected.
Navarretia leucocephala plieantha Many-flowered navarretia	Fed: FE State: CE CNPS: Rank 1B.1	May-June	Vernal pools (volcanic ash flow).	Closest known occurrence is 0.8-mile southwest of the project site from 1998 (Occurrence No.9).	This species was not observed during multiple years of rare plant surveys conducted on the project site. No impact expected.
Themidaceae					
Brodiaea leptandra Narrow-anthered California brodiaea	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleafed upland forest; chaparral; cismontane woodland; lower montane coniferous forest; valley and foothill grassland. Elevation 110 - 915 meters.	Closest known record is 1.8 miles northwest of the project site from 1981 (Occurrence No.16).	This species was not observed during multiple years of plant surveys conducted on the project site. No impact expected.

Table 3

Special-Status Plant Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

Table 4

Special Status Wildlife Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Fish				
Coho salmon - Central California ESU *Oncorhynchus kisutch*	Fed: FE State: CE Other:	Federal listing = pops between Punta Gorda & San Lorenzo River. State listing = pops south of San Francisco Bay only. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	Closest known record for this species is approximately 2 miles north of the project site from 2015 (Occurrence No. 25).	None. Pruitt Creek is an intermittent creek that does not provide suitable habitat.
Amphibians				
Red-bellied newt *Taricha rivularis*	Fed: State: CSC Other: -	Inhabits coastal woodlands, especially redwood forests. Requires streams or rocky creeks and rivers to lay ay eggs in. Found along California coast from Sonoma County to Humboldt County.	Closest known record for this species is approximately 1.2 miles south of the project site from 2016 (Occurrence No. 124).	None. No suitable redwood or other woodland forest habitat. No impact expected.
Foothill yellow-legged frog ** *Rana boylii*	Fed: -- State: CE Other:	Found in partially shaded, shallow streams with rocky substrates. Requires perenial pools or flowing water. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Closest known record for this species is approximately 1.2 miles south of the project site from 2016 (Occurrence No. 1819).	None. Project site is located in a robust population of the species, that is not considered a listed or imperiled population.
Reptiles				
Western pond turtle *Emys marmorata*	Fed: - State: CSC Other:	Uncommon to common in suitable aquatic habitat throughout CA, west of the Sierra-Cascade crest and absent from desert regions, except the Mojave River. Associated with permanent or nearly permanent water in a wide variety of habitat types.	Closest known record for this species located approximately 0.8-mile west of the project site from 2010 (Occurrence No. 1219).	Low. Pruitt Creek has connectivity with the Russian River and thus provides suitable habitat. Surveys recommended. No impacts expected.
Birds				
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other:	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Closest known record for this species located approximately 1.5 miles west of the project site from 2017 (Occurrence No. 2023).	Low. No ground squirrels were noted on the project site at the time of the February 24, 2021 survey date. Burrows were nonetheless noted, and surveys are recommended. No impacts expected.

Table 4

Special Status Wildlife Species Known to Occur Within 3 Miles of the Clearwater at Windsor Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Mammals				
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Fed: -- State: CSC Other: -	Occurs in humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, and buildings. Extremely sensitive to disturbance.	Closest known record is 2.7 miles northwest of the project site from 2017 (Occurrence No. 650).	None. No caves, refugia or other suitable habitat were observed on the project site. No impact expected.

***Status**

Federal:	State:	State:
FE - Federal Endangered	CE - California Endangered	WL - Watch List. Not protected pursuant to CEQA
FT - Federal Threatened	CT - California Threatened	S1 - Critically Imperiled
FPE - Federal Proposed Endangered	CR - California Rare	S2 - Imperiled
FPT - Federal Proposed Threatened	CC - California Candidate	Global:
FC - Federal Candidate	CSC - California Species of Special Concern	G2 - Imperiled
FPD - Federally Proposed for delisting	FP - Fully Protected	G4 - Apparently Secure

** This frog is listed as “endangered” in the Southern Sierra, central, and southern California coasts and “threatened” in the Northern Sierra and Feather River. This frog is not protected pursuant to CESA on the northern coast of California (all counties north of Marin and Solano Counties north to Oregon boarder).

Shiloh Road

HWY 101

W 1 W 2 W 3 W 4 W 5 W 6 W 7 W 8 W 9 W 10 W 11 W 12 W 13

Preliminary Jurisdictional Determination Pursuant to Section 404 of the Clean Water Act (CWA): The Vicini Property bordered on the north by Shiloh Road, on the west by Highway 101, and to the south by Pruitt Creek in the Town of Windsor, Sonoma County, California (APN 059-271-059).

US Army Corps of Engineers®

All wetlands and creek channel, as depicted in the Legend and on the map within the Project Boundary, are potential waters of the U.S. All boundaries shown for these features are approximate.

Section 404 of the CWA Jurisdiction reviewed only within the Project Boundary.

File No: 1988-23979N Date: January 24, 2013 Page 1 of 1

Legend

- Confirmed Jurisdictional Wetlands (Adjacent and Abutting) (4.59 Acres)
- Potential Linear Wetland: Roadside Ditches (off-site)
- Data Points
- Re-Verified Data Points
- OHWM (Jurisdictional Creek Channel) (0.56 Acre)
- Bridge
- Concrete Culvert
- Storm Drain Inlet
- Vineyard
- Project Boundary (26 Acres)

Wetland #	Sq. Ft.
W 1	143,739
W 2	306
W 3	380
W 4	956
W 5	163
W 6	1,572
W 7	1,393
W 8	17,518
W 9	24,642
W 10	2,955
W 11	847
W 12	4,672
W 13	637

0 25 50 100 150 200 250 Feet

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 1. Re-Verified Wetland Delineation Map
Lands of Vicini Project Site
Windsor, California

Scale: 1 inch = 50 feet
Reverification Date: September 11, 2012
by Hope Kingma & Tim O'Donnell
Map Revision Date: October 18, 2012
Aerial Photograph Source: Bing Maps

LOT 3

LOT 2

LOT 4

LOT 1

20'

NEW CONSERVATION EASEMENT
OVER LOT 1
12.55 ACRES

PROPOSED STORM
DRAIN OUTFALL

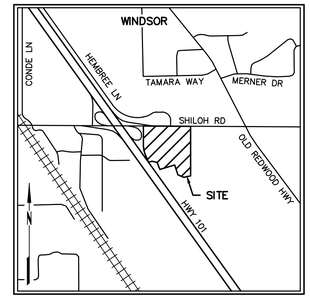
296 SF
DISTURBED
WETLAND

60 0 60 120
scale 1" = 60' feet

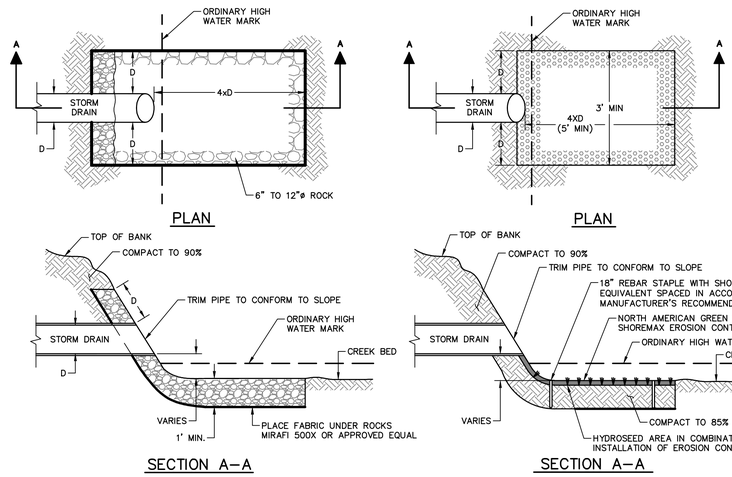
LEGEND

		TOTALS
	APPROXIMATE LIMITS OF WETLAND AREAS	4.59 ACRES
	PROPOSED STORM DRAIN	
	LIMITS OF PROPOSED CONSERVATION EASEMENT	
	APPROXIMATE LIMITS OF PROPOSED GRADING	
	20-FOOT OFFSET FROM APPROXIMATE LIMITS OF PROPOSED GRADING	
	APPROXIMATE ORDINARY HIGH WATER MARK OF PRUITT CREEK	
	TOP OF EXISTING CREEK BANK BEING IMPACTED BY THE PROPOSED IMPROVEMENTS	460 LF
	WETLAND AREAS WITHIN 20-FEET OF APPROXIMATE LIMITS OF PROPOSED GRADING	0.20 ACRE
	WETLAND AREAS BEING DISTURBED BY PROPOSED IMPROVEMENTS	0.19 ACRE
	AREA OF PRUITT CREEK BELOW APPROXIMATE ORDINARY HIGH WATER MARK BEING IMPACTED BY THE PROPOSED IMPROVEMENTS	0.10 ACRE

NOTE:
THE APPROXIMATE LIMITS OF THE WETLAND AREAS AND ORDINARY HIGH WATER MARK OF PRUITT CREEK SHOWN HEREON WERE PROVIDED TO BKF BY MONK & ASSOCIATES, THE WETLAND AREAS WERE REVERIFIED BY MONK & ASSOCIATES ON 09/11/2012.



VICINITY MAP
NOT TO SCALE



STORM DRAIN OUTFALL
TREATMENT OPTIONS
NO SCALE

ENVIRONMENTAL IMPACTS EXHIBIT

CLEARWATER AT WINDSOR
TOWN OF WINDSOR, CALIFORNIA

MAY 2021

PREPARED BY

BKF
200 4th STREET
SUITE 300
SANTA ROSA, CA 95401
(707) 583-8500
www.bkf.com

Plot May 25, 2021 at 1:13pm

169082_TENT.dwg

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BALCERAK DESIGN
LANDSCAPE ARCHITECTURE • URBAN FORESTRY
555 Fifth Street, Suite 300-B Santa Rosa, CA 95401

ARBORIST'S REPORT

376 SHILOH ROAD

WINDSOR, CALIFORNIA

February 10, 2021
Revised October 6, 2021

BALCERAK DESIGN

LANDSCAPE ARCHITECTURE • URBAN FORESTRY
555 Fifth Street, Suite 300-B Santa Rosa, CA 95401

October 6, 2021

Carissa Savant – VP Development Services
Clearwater Living
5000 Birch Street, Suite 400
Newport Beach, CA 92660

Dear Ms. Savant,

This Report has been prepared to address the requirements of the Town of Windsor's Zoning Ordinance, Section 27.36 – Tree Preservation and Protection. The property at 376 Shiloh Road is currently vacant and is being used as pasture land. The development proposal is to build a Mixed-Use Retirement Community.

On February 5, 2021 and September 24, 2021, Gary Balcerak, International Society of Arboriculture (ISA) Certified Arborist WE-3069A, observed all trees on the subject property, including those that would be impacted by the proposed project. The construction impacts are based upon the Tentative Map prepared by BKF Engineers, dated September, 2021.

A total of 28 trees are indicated on the Tentative Map, including seven off-site trees. All of these trees are included in this Report, even if they are not Protected Trees. For trees that qualify as Protected Trees all of the required information presented in the Tree Preservation and Protection Ordinance has been provided. For those trees indicated on the Tentative Map that do not qualify as Protected Trees, only the species of tree and its location on the Tree Exhibit have been provided.

Species of Protected Trees included *Quercus garryana* (Oregon White Oak), *Quercus lobata* (Valley Oak), and *Aesculus californica* (California Buckeye). Existing trees that are not Protected tree species included *Fraxinus latifolia* (Oregon Ash), *Juglans hindsii* (California Black Walnut), and *Salix lasiolepis* (Arroyo Willow).

INTRODUCTION

Trees #1, #2, and #3 are the only trees that will be close to the proposed development. They are all *Quercus lobata* trees and are proposed to be retained. All these trees are Significant Trees, they are old trees and contain many wounds and structural defects. They also represent very high quality wildlife habitat – several nesting cavities were observed. Due to the age and condition of the trees they would be hazardous if they were incorporated into a development

project. However, their location makes it quite feasible to create a zone around the trees where people can be excluded, and the trees (and the wildlife habitat) can be safely retained.

As described in the February 10, 2021 Report, these trees are so old that the Tree Protection Zone (TPZ) must be increased beyond the basic calculations presented in the Tree Technical Manual, to protect them. The TPZ should be 20' beyond the dripline as measured in the field, to protect the tree roots. The bioretention area, as shown on the Tentative Map, has been reconfigured the so that the required TPZ is provided.

A detailed description of each tree can be found in the Tree Evaluation section of this Report. A Tree Exhibit showing the location of the existing trees and their identification numbers has been provided for reference. Guidelines for tree protection during construction and general tree preservation measures are included for reference. A definition of terms used is provided at the end of this Report.

METHODS

An observation of the trees was conducted on February 5, 2021 & September 24, 2021, by Gary Balcerak. A detailed analysis was not requested nor performed. The evaluations are based upon a visual inspection of the trees, from ground level. No crown explorations or climbing inspections were performed. The evaluations are based upon the external defects present at the time of the observation; therefore, the analysis is not exhaustive. The condition of the trees will continue to change over time.

All tree diameters were recorded using a standard diameter tape with units in feet and tenths of feet. All diameters given are as measured at 54" off grade – Diameter at Breast Height (DBH), unless otherwise noted. When a tree had a crotch below DBH, the smallest trunk diameter below the crotch was measured and its height above natural grade was recorded, unless the measurement below the crotch would include the trunk flair and therefore provide an excessive size.

The tree heights were determined using an optical reading clinometer to find the angle between the top of the tree and the horizontal line of sight. Trigonometric functions were applied to find the tree height, the total tree height is obtained by adding the height of the horizontal line of sight of the observer. The dripline was measured using a standard tape measure and the distance was rounded off to the nearest foot. All of this data is presented in the Tree Evaluations section.

The Evaluations provide an assessment of the overall condition of each tree as characterized by its health and structure. Health is an indication of the overall vitality of the tree.

Structure refers to the physical form of the tree, this includes branch attachment, presence of decay, or mechanical damage the tree has suffered. Each tree was rated, in each category, using the rating scale provided in the Tree Technical Manual.

FINDINGS

The observed trees cover a variety of age classes so a few words about the aging process are warranted. The trees range in age classes from juvenal trees to senescence. Once trees are fully mature the aging process continues as old trees transition from late maturity, to being ancient, and finally senescence. Trees growing in favorable conditions will take many years to actually die. It is important to note as the trees decline in structural strength the value of the wildlife habitat increases exponentially.

Once a tree is fully mature annual growth stops, the natural process of limb loss begins, there is an increase in dysfunctional tissue, and accelerated fungal colonization. While these characteristics reduce the structural stability of the tree, at the same time it drastically improves the wildlife habitat function of the tree. Dead wood, broken limbs, fungal growth, and decay pockets all dramatically increase the quality of the habitat provided; it also increases the number of species that can use the tree as habitat. Tree #1 exhibits all of these characteristics.

Tree #2 is a tree that has aged beyond the point of being called fully mature. The name used for this age class is ancient (a term adopted from the British). At this point the tree crown naturally starts reducing itself (retrenchment), the canopy gets smaller year to year. There is increased vegetative vitality in the lower crown, increased fungal activity, and more extensive limb failure.

Tree #3 is a tree that is in the senescent stage. The tree is in terminal decline. Prior to the time of the observation a major scaffold limb failed so that only one scaffold limb is still intact on the tree. To facilitate nutrient recycling and because of the habitat value it is recommended that the downed wood be allowed to remain where it has fallen. As this tree shows, the natural aging process allows a tree to shed parts over the course of time, in a fairly predictable way. The stubs of scaffold limbs provide habitat to numerous species.

DISCUSSION

Roots are opportunistic and will grow wherever possible and extend where they can to support the tree. For trees growing in open areas, roots will extend two to three times the extent of the canopy dripline. The majority of roots are in the upper three feet of the soil. It is impossible to know how many roots, and of what size, will be encountered during the grading

operations. The TPZ shown on the Tree Exhibit represent the minimum required, the TPZ should be expanded to the greatest extent possible.

Of all the trees observed only a few are anticipated to be impacted by the proposed work, the vast majority are located a long distance from any proposed construction activities. For Trees #1, #2 & #3 the only impacts to the trees would result from the excavation required to create the bioretention area. Even modest depths of excavation (12"–18") will result in root loss, which would adversely impact the trees. Given the age of the trees, their condition, and the value of the wildlife habitat they provide, and the space available, the minimum TPZ of the dripline plus 20' is required. The TPZ should establish an exclusion zone, this not only protects the roots of the trees but also will prevent a target from being present when additional limb failures occur.

The only other trees that will be impacted are Tree #10 and Tree #23, they will be impacted by the grading for the proposed Purit Creek channel. Both trees are young and vigorous *Quercus lobata* trees. The grading for the new Pruit Creek channel will remove a number roots of both trees. The impacts to Tree #10 are anticipated to be minimal as the cut within the dripline will not exceed 1'. The calculated TPZ is sufficient to protect this tree, the protective fence should be established at the limits of grading within the dripline.

The impacts to Tree #23 will be more significant, the cut under the dripline will be up to 3' deep, and then sloping 3:1 to within a few feet of the trunk. In order to help protect the rest of this tree's roots, the TPZ has been increased to 25' from the trunk. The tree protection fence should be established at the limits of grading on the creek side of the tree, and then expand to 25'. Given the young and healthy sate of this tree and the fact no target is present even if the tree were to fail makes retention a reasonable option.

Disruption of the roots is a serious matter and care should be taken to minimize root damage. As grading occurs any root over 1" in diameter shall be exposed back to sound tissue and then hand pruned, the blades must be sharp. Roots shall not be exposed to the air any longer than necessary.

APPRAISAL METHODOLOGY

The 10th Edition of the Guide for Plant Appraisal (Guide) was published and released in 2018, this edition was used to calculate the tree values. The cost approach was used to determine the value of the trees, because the subject trees are larger than the largest available transplantable trees. An identical tree is not available for sale. Therefore, the cost of a 24" box tree was used as a base to extrapolate the value of the existing subject trees. Then depreciation factors were used to reflect any sub-optimal attributes of the subject trees compared to the theoretically ideal

replacement tree. This method is referred to as The Trunk Formula Technique (TFT). The assumption is made that the costs to procure a smaller tree can be extrapolated linearly and homogenously over the cross sectional area of a larger tree.

The unit cost of nursery stock is published in the Western Chapter ISA Regional Species Classification Guide, and it varies based on the growth rate of the tree species and its trunk size in various box sizes. This unit cost is expressed in dollars per square inch of trunk cross sectional area. The most current edition was published in 2004. One of the weaknesses is that it has not been adjusted for inflation and current market pricing. An alternative to using the published values in the Regional Species Classification, is to perform a detailed analysis of the unit cost by using wholesale nursery pricing catalogs from many growers to determine a more accurate unit cost. Due to budget and time limitations, that additional level of research was not undertaken for this appraisal. The Regional Species Classification has established a Basic Price of $82.82, per each square inch of trunk area, for *Quercus garryana* and *Quercus lobata*; *Aesculus California* has a Base Price of $77.04.

The Basic Tree Cost is the Trunk Area multiplied by the Basic Tree Cost. This represents the cost to procure a hypothetically ideal replacement that is free of any defects. In reality no tree is ideal, particularly with old large trees. Three depreciation ratings have been introduced to account for this. The three ratings are: Condition, Functional Limitations, and External Limitations. The appraised cost of the tree is the product of the basic cost and these three depreciation ratings.

The Condition rating reflects defects in health, structure, and form. Functional Limitations reflect the features of the tree/site interaction that restrict or constrain growth or function due to poor placement or size. External Limitations reflect restrictions to the tree involving legal, biological, or environmental conditions external to the property. Each rating will range between 0% and 100%, as determined by the appraising arborist, based on the information provided in the Guide.

Tree #1	**Result**
Trunk Area ($A = \pi r^2$)	2223 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 184,026.
Condition Rating	75%
Functional Limitations	85%
External Limitations	75%
Final Value (rounded off)	$ 88,000.

Tree #2	**Result**
Trunk Area ($A = \pi r^2$)	1885 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 156,116.
Condition Rating	50%
Functional Limitations	85%
External Limitations	75%
Final Value (rounded off)	$ 49,800.

Tree #3	**Result**
Trunk Area ($A = \pi r^2$)	1459 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 120,834.
Condition Rating	25%
Functional Limitations	85%
External Limitations	75%
Final Value (rounded off)	$ 19,300.

Tree #4	**Result**
Trunk Area ($A = \pi r^2$)	962 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 79,680
Condition Rating	85%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 48,900.

Tree #5	**Result**
Trunk Area ($A = \pi r^2$)	740 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 61,304.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 35,400.

Tree #6	**Result**
Trunk Area ($A = \pi r^2$)	679 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 56,222.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 32,500.

Tree #7	**Result**
Trunk Area ($A = \pi r^2$)	647 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 53,577.
Condition Rating	75%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 29,000.

Tree #8	**Result**
Trunk Area ($A = \pi r^2$)	552 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 45,678.
Condition Rating	75%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 24,800.

Tree #10	**Result**
Trunk Area ($A = \pi r^2$)	64 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 5,269.
Condition Rating	90%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 3,400.

Tree #20	**Result**
Trunk Area ($A = \pi r^2$)	74 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 6,099.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 3,500.

Tree #22	**Result**
Trunk Area ($A = \pi r^2$)	54 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 4,481.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 2,600.

Tree #23	**Result**
Trunk Area ($A = \pi r^2$)	79 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 6,504.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 3,800.

Tree #24	**Result**
Trunk Area ($A = \pi r^2$)	82 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 6,767.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 3,900.

Tree #25	**Result**
Trunk Area ($A = \pi r^2$)	71 in^2
Unit Cost	$ 82.82
Basic Tree Cost	$ 5870.
Condition Rating	80%
Functional Limitations	85%
External Limitations	85%
Final Value (rounded off)	$ 3,400.

Tree #26	**Result**
Trunk Area ($A = \pi r^2$)	311 in^2
Unit Cost	$ 77.04
Basic Tree Cost	$ 23,922.
Condition Rating	60%
Functional Limitations	70%
External Limitations	70%
Final Value (rounded off)	$ 7,000.

The appraised value for the subject trees totals $ 354,900.

TREE PROTECTION

Prior to the initiation of any construction activity, temporary protective fencing shall be erected in the construction area. Fencing shall be a minimum of five feet high, and shall form a continuous barrier around the trees to be protected. Fencing shall be 2" chain link fabric. The fencing installation shall be performed by qualified personnel with all necessary supports and braces to provide a secure fence throughout the construction process. The fence shall not be removed during the construction process, without written authorization from the project arborist. All equipment and personnel shall remain outside the fenced area at all times. The storage of materials (of any kind) is prohibited within the tree protection area. Refer to Town Standard Drawing Number 004 for additional information.

As required, a warning sign shall be prominently displayed on each fence. The minimum size of the sign shall be 8.5"x11". The wording shall be as follows: **WARNING – *Tree Protection Zone* – DO NOT ENTER – *This fence shall not be removed. Unauthorized removal is subject to a penalty***.

GENERAL NOTES ON TREE PRESERVATION

There are some general recommendations that apply to all of the existing trees that are to be retained. All trees should be protected from mechanical damage during the construction work.

has been completed. It is often the case that by the time the tree has exhibited overt signs of decline it is too late to return the tree to a healthy condition. Trees are huge living systems where health problems are slow to manifest and slow to be reversed. It is imperative that contractors and construction personnel understand the procedural guidelines and follow them. Any deviation from the guidelines presented here will increase the chances of tree decline, failure, or death.

Soil compaction shall be kept to a minimum, no machinery, worker, or operation shall be allowed on exposed soil surfaces, except that which is necessary to complete the approved work. The established drainage patterns should be respected. The soil elevation, particularly at the trunk, shall not be altered without written authorization from the project arborist.

LIMITATIONS

The observations and preparation of this report has been done in accordance with the generally accepted standards of the arboricultural profession. No warranty, either expressed or implied is given. The services provided were limited to the scope of work outlined above and specifically excluded other services.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Please feel free to contact me if further discussion of these items is necessary, or if you have any questions.

Respectfully,
BALCERAK DESIGN



Gary Balcerak
Landscape Architect C-3704
Certified Arborist WE-3069A
Certified Urban Forester 125

TREE EVALUATIONS

Tree	Species	DBH	High[1]	DL[2]	TPZ	Health[3]	Struct.[4]	Comments	Status
1	*Quercus lobata* (Valley Oak)	53.2"	50'	45'	65'	3	2	Fully mature tree. The bioretention area has been revised to provide the required TPZ.	Save
2	*Quercus lobata* (Valley Oak)	49" @36"	40'	38'	60'	3	2	Ancient tree. The bioretention area has been revised to provide the required TPZ.	Save
3	*Quercus lobata* (Valley Oak)	43.1"	31'	28'	51'	2	1	Senescent tree. The bioretention area has been revised to provide the required TPZ.	Save
4	*Quercus garryana* (Oregon White Oak)	35.0"	55'	32'	35'	4	4	Fully mature tree. Some dead wood noted in canopy, normal for the age and species. No overt defects noted.	Save
5	*Quercus lobata* (Valley Oak)	30.7 @ 36"	39'	31'	34'	4	4	Fully mature tree. Some dead wood noted in canopy, normal for the age and species. Past limb failure and decay has resulted in a nesting cavities.	Save
6	*Quercus garryana* (Oregon White Oak)	29.4"	49'	33'	36'	4	4	Fully mature tree. Some dead wood noted in canopy, normal for the age and species. No overt defects noted.	Save
7	*Quercus garryana* (Oregon White Oak)	28.7"	45'	35'	38'	4	4	Fully mature tree. Some dead wood noted in canopy, normal for the age and species. Past limb failure and decay has resulted in a nesting cavities.	Save
8	*Quercus garryana* (Oregon White Oak)	26.5"	35"	22'	25'	4	4	Fully mature tree. Some dead wood noted in canopy, normal for the age and species. No overt defects noted.	Save
9	*Juglans hindsii* (California Walnut)							Not a Protected Tree.	Save

TREE EVALUATIONS

Tree	Species	DBH	High[1]	DL[2]	TPZ	Health[3]	Struct.[4]	Comments	Status
10	*Quercus lobata* (Valley Oak)	9.0" @ 12"	22'	12'	15'	5	4	Off-site tree. Young tree, no overt defects noted. The grading for the new Pruit Creek channel will some roots, but given the young age of the tree, minimal impacts are anticipated.	Save
11	*Salix lasiolepis* (Arrow Willow)							Off-site tree. Not a Protected Tree.	Save
12	*Juglans hindsii* (California Walnut)							Off-site tree. Not a Protected Tree.	Save
13	*Salix lasiolepis* (Arrow Willow)							Off-site tree. Not a Protected Tree.	Save
14	*Salix lasiolepis* (Arrow Willow)							Off-site tree. Not a Protected Tree.	Save
15	*Quercus lobata* (Valley Oak)	5.7"						Young tree with no overt defects noted. Not a Protected Tree.	Save
16	*Salix lasiolepis* (Arrow Willow)							Not a Protected Tree.	Save
17	*Salix lasiolepis* (Arrow Willow)							Not a Protected Tree.	Save
18	*Salix lasiolepis* (Arrow Willow)							Not a Protected Tree.	Save
19	*Salix lasiolepis* (Arrow Willow)							Not a Protected Tree.	Save
20	*Quercus lobata* (Valley Oak)	4.8", 5.8", 6.1"	27'	14'	17'	5	4	Codominate trunks with included bark at both unions, common for the species. No overt defects noted.	Save

TREE EVALUATIONS

Tree	Species	DBH	High[1]	DL[2]	TPZ	Health[3]	Struct.[4]	Comments	Status
21	*Salix lasiolepis* (Arrow Willow)							Not a Protected Tree.	Save
22	*Quercus lobata* (Valley Oak)	8.3" @ 24"	15'	6'	9'	4	4	Codominate trunks with included bark at both union, common for the species. Bark damage to lower trunk, apparently from rabbits. Tree trunk has been wrapped with metal fabric as protection, the fabric should be removed prior to becoming embedded into the bark.	Save
23	*Quercus lobata* (Valley Oak)	10.0" @ 18"	19'	10'	25'	5	4	Codominate trunks with included bark at both unions, common for the species. No overt defects noted. The grading for the new Pruit Creek channel will remove a substantial number of roots, but given the young age of the tree, retention will likely succeed.	Save
24	*Quercus lobata* (Valley Oak)	10.2"	14'	14'	17'	5	4	Bark damage to lower trunk, apparently from rabbits. Tree trunk has been wrapped with metal fabric as protection, the fabric should be removed prior to becoming embedded into the bark. No overt defects noted.	Save
25	*Quercus lobata* (Valley Oak)	9.5" @ 35"	21'	13'	16'	5	4	Codominate trunks with included bark at ± 4' above grade, common for the species. No overt defects noted.	Save
26	*Aesculus californica* (California Buckeye)	10.7", 11.7", ±12"	36'	38'	41'	3	2	Off-site tree. Ancient tree. This tree has extensive decay present in all three trunks, this species is prone to decay. Not fully assessable due to Tree #27, and a dead *Juglans hindsii* all growing together. High wildlife value tree.	Save

TREE EVALUATIONS

Tree	Species	DBH	High[1]	DL[2]	TPZ	Health[3]	Struct.[4]	Comments	Status
27	*Fraxinus latifolia* (Oregon Ash)							Not a Protected Tree.	Save
28	*Salix lasiolepis* (Arrow Willow)							Off-site tree. Not a Protected Tree.	Save

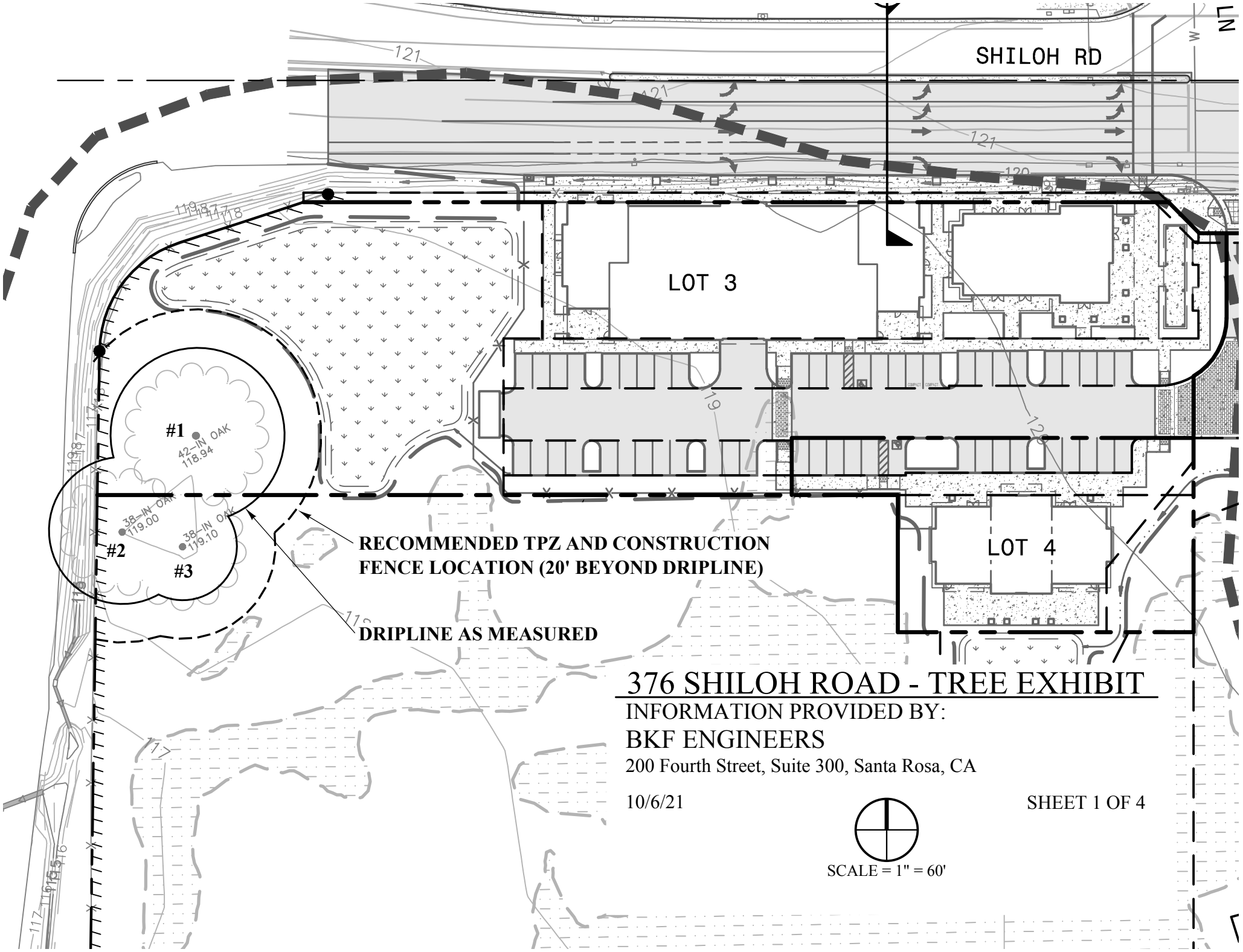
NOTES:

High[1] = Approximate height of tree.

DL[2] = Approximate Dripline at the greatest distance from trunk.

Health[3] = Health Rating where 5 = Exceptional (no disease, pest, or distress symptoms).
4 = Good (average health and vigor).
3 = Fair (health and vigor compromised, distress symptoms are visible but generally correctable).
2 = Marginal (health and vigor are seriously compromised, survivability is questionable).
1 = Poor (decline has progressed to the point the tree is moribund or dead.)

Struct.[4] = Structural Rating where 4 = Good (minor structural problems that do not require corrective action).
3 = Fair (typical structural defects which are generally correctable).
2 = Marginal (serious structural defects that may or may not be correctable)
1 = Poor (hazardous structural condition, targets to be identified and evaluated)



376 SHILOH ROAD - TREE EXHIBIT

INFORMATION PROVIDED BY:

BKF ENGINEERS

200 Fourth Street, Suite 300, Santa Rosa, CA

10/6/21

SHEET 1 OF 4

SCALE = 1" = 60'

376 SHILOH ROAD - TREE EXHIBIT

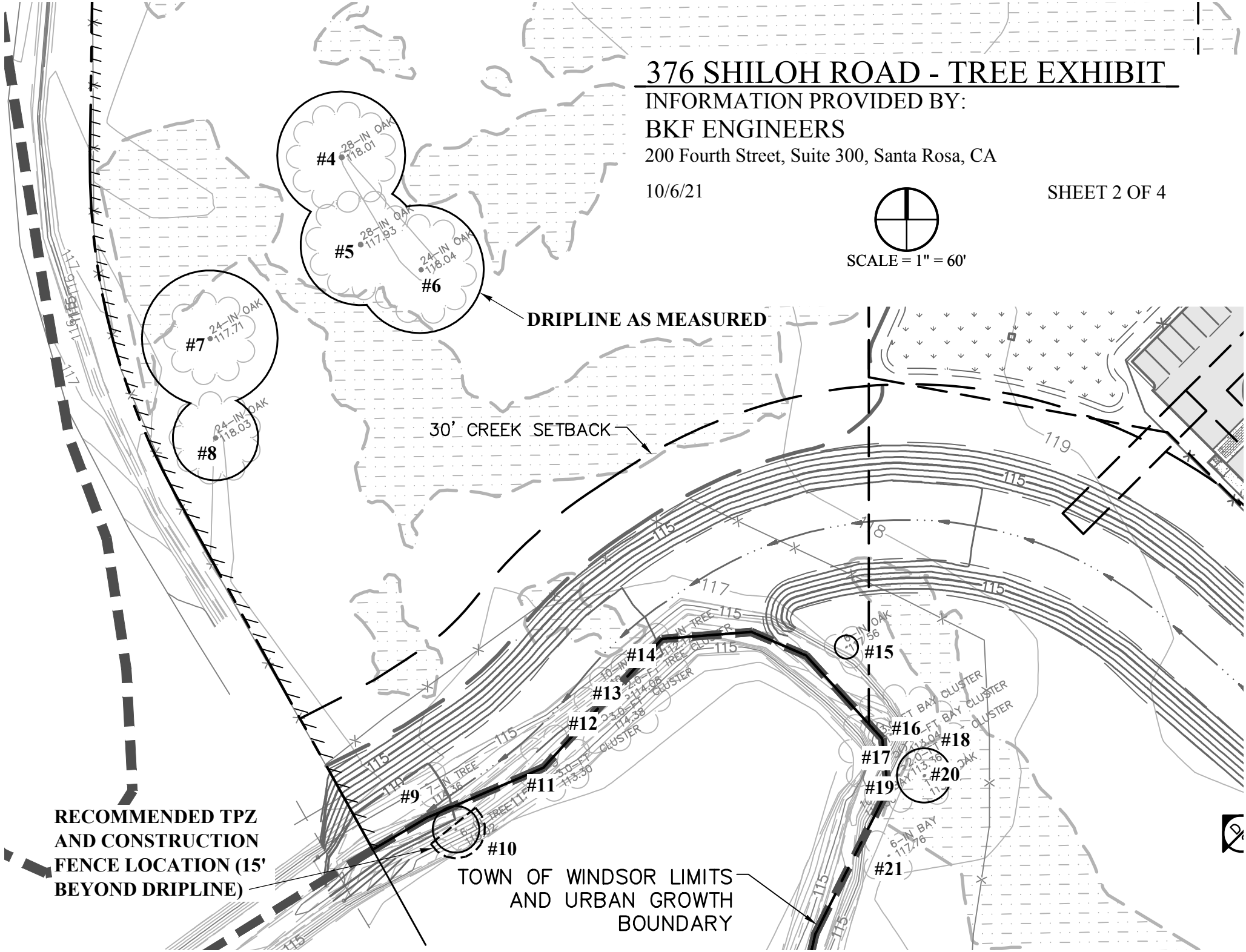
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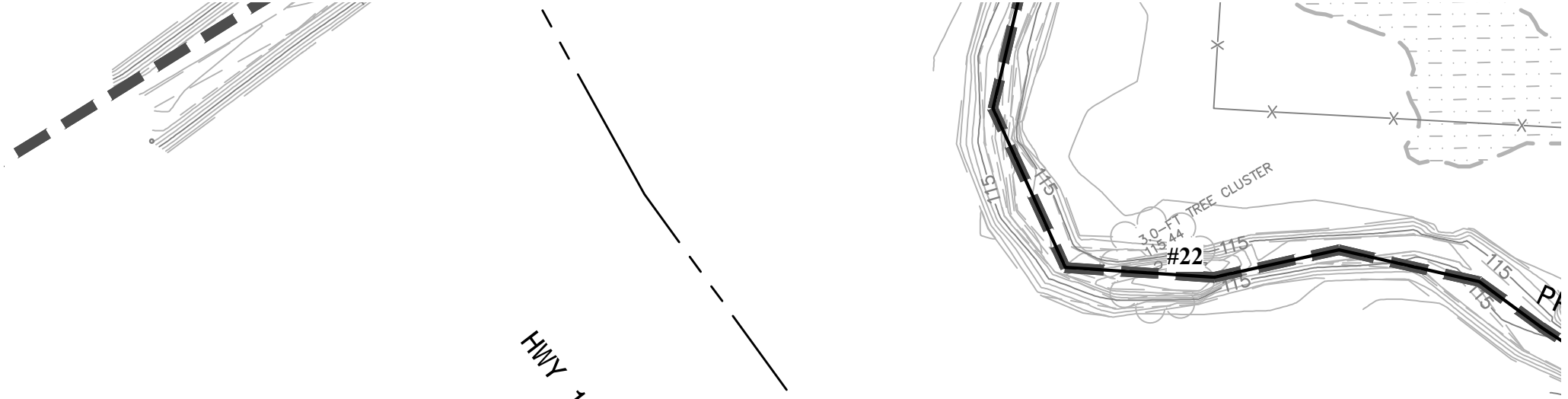
BKF ENGINEERS

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10/6/21

SCALE = 1" = 60'





376 SHILOH ROAD - TREE EXHIBIT

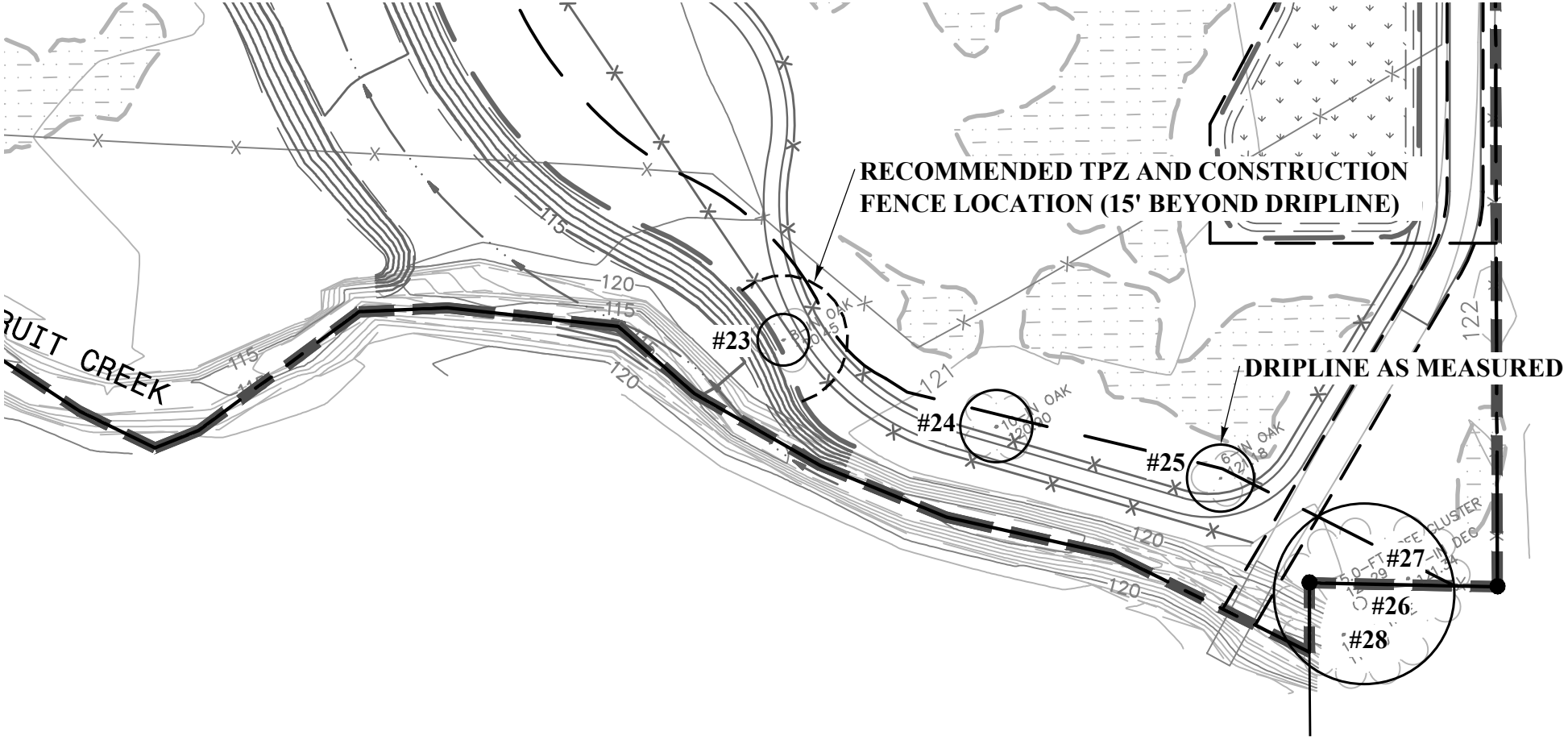
INFORMATION PROVIDED BY:

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SCALE = 1" = 60'



376 SHILOH ROAD - TREE EXHIBIT

INFORMATION PROVIDED BY:

BKF ENGINEERS

200 Fourth Street, Suite 300, Santa Rosa, CA

10/6/21

SCALE = 1" = 60'

Definition of Terms

Abiotic: nonliving
Adventitious: appearing in abnormal or unusual position or place.
Aerobic: living or acting only in the presence of air (oxygen).
Allelopathy: the chemical process by which a plant suppresses competing plants
Anaerobic: living or acting only in the absence of air (oxygen).

Bifurcation: natural division of a branch or stem into two or more stems or parts.
Biotic: pertaining to living organisms.
Boundary tree: said of a tree when the property line passes through some portion of the tree trunk. California law states *"trees whose trunks stand partly on the land of two or more coterminous owners, belong to them in common"*.
Branch bark ridge: swelling of bark tissue on the upper side of the branch junction; normal pattern of development (contrast with embedded and included bark).
Branch collar: wood which forms around a branch attachment, frequently more pronounced below the branch.
Bud: the rudimentary state of a leaf, branch, or flower.
Buttress root: a large woody root located at the base of the trunk (the root crown), which helps to support the tree.

Cambium: a layer several cells thick between the wood and the bark. This is the tissue that gives trunks the ability to grow in circumference.
Canker: a necrotic lesion in the bark of the stem or root; also, the scar left after shedding of bark tissues killed by localized disease or environmental injury.
Chlorosis: lacking in chlorophyll, typically yellow in color.
Codominate: equal in size and relative importance, usually associated with either the trunks/stems or scaffold limbs/branches in the crown; in the context of crown class, trees whose crowns form the bulk of the upper layer of the canopy but which are crowded by adjacent trees.
Compartmentalization: physiological process which creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.
Conk: fruiting or spore producing body of a group of fungi.
Crotch: the point (or angle) at which two branches (or branch and the leader) meet.
Crown: parts of the tree above the trunk, including leaves, and branches.

DBH: diameter of the trunk, measured at breast height (54 inches above the ground).
Dripline: the width of the crown, as measured by the lateral extent of the foliage.

Epicormic: shoots, which result from adventitious or latent buds.
Excurrent: crown form where a strong central leader is present (contrast with decurrent) to the top of the tree.
Exotic: introduced from another place or region; non-native.
Exudate: bleeding or oozing.

Flush cut: pruning cut where the branch collar is removed, causing unnecessary injury to the trunk or parent stem.
Frass: fecal material and/or wood shavings produced by insects.

Gall: a plants response to irritation from an insect, fungus, or a virus on the foliage, branches, or roots; producing growth, which isolates the irritation.

Girdling root: root that encircles all or part of the trunk, or other roots, which constricts the vascular tissue and inhibits secondary growth and the movement of materials.

Habit: the general characteristic appearance of a plant.
Heading: pruning technique where the cut is made to a bud, weak lateral branch not large enough to assume the role as a leader, or stub.
Herbaceous: a perennial plant that is not woody.
Hybrid: the offspring of two plants of different varieties, species, or genera.

Included bark: pattern of development at branch junctions where bark is turned inward rather than pushed out.
Inflorescence: the part of the plant responsible for the flowers.
Internode: the space between two nodes.

Latent bud: a bud that is more than one year old, which has grown enough to be located just below the surface of the bark.
Lenticel: a small opening in the bark that permits the exchange of gasses between the tree and the air.

Mechanical damage: injury caused by human activities as opposed to natural forces like wind, snow, or ice loads.
Moribund: nearly dead; having lost all vitality.

Necrotic: dead
Node: the often swollen or modified part of the stem that normally bears a bud.

Odoriferous: giving off an odor or scent or fragrance.

Parasite: an organism that grows in or on a host, getting all or part of its nutrients from the host.
Pathogen: any agent that causes disease, usually refers to microorganisms.
Pollarding: pruning technique where young trees or branches are initially headed, then re-headed on an annual (or regular) basis without disturbing the callus knob (knuckle).
Prostrate: a stem lying flat on the ground, often rooting at the nodes.

Reaction wood: specialized secondary wood, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.

Saprophyte: an organism that gets nourishment from dead or decaying matter.
Scaffold limb: primary structural branch of the crown.
Suppressed: in crown class, trees which have been overtopped and whose crown development is restricted from above.

Trunk flair: transition zone between from the trunk to roots where the trunk expands into the buttress roots.

Woundwood: lignified, partially differentiated tissue that develops from the callus associated with wounds.

Xylem: tissue produced by the cambium that functions to transport and store water and mineral elements, as well as provide support; wood.

Appendix C

Cultural Resources Study

This report is confidential. If you would like to request a copy, please contact Kimberly Jordan (Town of Windsor Planner III) at kjordan@townofwindsor.com.

Appendix D

Energy Calculations

376 Shiloh Road Mixed-Use Project

Last Updated: 8/12/2022

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Rubber Tired Dozers	3	8	247	0.4	Site Preparation Phase	1,629.41
Tractors/Loaders/Backhoes	4	8	97	0.37	Site Preparation Phase	877.36
Graders	1	8	187	0.41	Grading Phase	1,232.02
Excavators	2	8	158	0.38	Grading Phase	1,929.58
Rubber Tired Dozers	1	8	247	0.4	Grading Phase	1,587.63
Tractors/Loaders/Backhoes	2	8	97	0.37	Grading Phase	1,282.30
Scrapers	2	8	367	0.48	Grading Phase	5,661.48
Cranes	1	7	231	0.29	Building Construction Phase	9,295.19
Forklifts	3	8	89	0.2	Building Construction Phase	9,414.03
Generator Sets	1	8	84	0.74	Building Construction Phase	10,958.35
Tractors/Loaders/Backhoes	3	7	97	0.37	Building Construction Phase	16,608.75
Welders	1	8	46	0.45	Building Construction Phase	3,649.26
Air Compressors	1	6	78	0.48	Architectural Coating Phase	2,547.75
Pavers	2	8	130	0.42	Paving Phase	1,154.44
Paving Equipment	2	8	132	0.36	Paving Phase	1,004.74
Rollers	2	8	80	0.38	Paving Phase	714.57
					Total Fuel Used	**69,546.88**
						(Gallons)

Construction Phase	Days of Operation
Site Preparation Phase	13
Grading Phase	38
Building Construction Phase	375
Paving Phase	25
Architectural Coating Phase	193
Total Days	644

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Site Preparation Phase	24.1	18	10.8	104.86
Grading Phase	24.1	20	10.8	340.58
Building Construction Phase	24.1	264	10.8	44365.15
Paving Phase	24.1	15	10.8	168.05
Architectural Coating Phase	24.1	53	10.8	4583.95
		Total		**49,562.59**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Site Preparation Phase	7.5	0	20.0	0.00
Grading Phase	7.5	0	20.0	0.00

Building Construction Phase	7.5	0	20.0	0.00
Paving Phase	7.5	0	20.0	0.00
Architectural Coating Phase	7.5	0	20.0	0.00
			Total	**-**
		VENDOR TRIPS		
Site Preparation Phase	7.5	0	7.3	0.00
Grading Phase	7.5	0	7.3	0.00
Building Construction Phase	7.5	57	7.3	20805.00
Paving Phase	7.5	0	7.3	0.00
Architectural Coating Phase	7.5	0	7.3	0.00
			Total	**20,805.00**

Total Gasoline Consumption (gallons)	**49,562.59**
Total Diesel Consumption (gallons)	**90,351.88**

Sources:

[1] United States Environmental Protection Agency. 2018. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b* . July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2019. *National Transportation Statistics 2019* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

376 Shiloh Road Mixed-Use Project

Last Updated: 8/12/2022

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	2,580,797		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix
Light Duty Auto (LDA)	0.578487
Light Duty Truck 1 (LDT1)	0.054091
Light Duty Truck 2 (LDT2)	0.163601
Medium Duty Vehicle (MDV)	0.113178
Light Heavy Duty 1 (LHD1)	0.027971
Light Heavy Duty 2 (LHD2)	0.007469
Medium Heavy Duty (MHD)	0.015619
Heavy Heavy Duty (HHD)	0.006666
Other Bus (OBUS)	0.001080
Urban Bus (UBUS)	0.000273
Motorcycle (MCY)	0.026807
School Bus (SBUS)	0.001478
Motorhome (MH)	0.003279

Fuel Economy (MPG) [1]	
Passenger Vehicles	24.1
Light-Med Duty Trucks	17.9
Heavy Trucks/Other	7.5
Motorcycles	44

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons)
Passenger Vehicles	*57.85%*	*Gasoline*	1492958	0.00	61,948
Light-Medium Duty Trucks	*33.09%*	*Gasoline*	853908	0.00	47,704
Heavy Trucks/Other	*6.38%*	*Diesel*	164745	0.00	21,966
Motorcycle	*2.68%*	*Gasoline*	69183	0.00	1,572

Total Gasoline Consumption (gallons)	**111,225**
Total Diesel Consumption (gallons)	**21,966**

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2019. National Transportation Statistics 2019. Available at: https://www.bts.gov/topics/national-transportation-statistics.