Appendix A

Air Quality, Greenhouse Gas Emissions, and Energy Modeling Calculations

Master Modeling Assumptions & Inputs

University Avenue Housing ISMND

Project details

Construction Start (CMOD input)	2023	
Construction end	2024	
Total months of construction	15	months
Weeks per month	4	weeks
construction days per week	5	days
Total days of construction	300	days
First operational year (CMOD input)	2025	
Total project acerage	1.06	

Land Use

Land Use Type

Residential	CMOD input	value	unit	acres	sq ft
Apartments	Apartments Mid-rise	30	dwelling unit	0.79	30,000
Parking lot	Parking lot	52	parking spaces	0.27	

Construction Phasing

Construction Phase	Number of days (caleemod default)	Adjusted days per project timesline
Site Prep	2.00	3
Grading	4.00	5
Building Construction	200.00	265
Paving	10.00	13
Architectural Coatings	10.00	13
Total	226.00	300

Note: No demolition phase included. Adjusted caleemod default construction phasing to not exceed project timeline in PD

Operational Energy

	CalEEMod default			
Energy use	Non-title 24	Title 24	Total	
Natural Gas (KBTU/size/year)	2,687	6,729	9,416	<<<removed and converted to electricity
Electricity (KWhr/size/year)	98	3,054	3,152	
Converted Natrual Gas to Electricity (KBTU to KWhr)	787	1,972	2,760	
Total electricity (kwh/year)	**886**	**5,026**	**5,912**	<<Input to CalEEMod Operational Energy Use (Electricity Energy Intensity)

Conversion	
1	KBTU/hr
0.2930711	kW

Project Charecteristics

Construction starts May 2023 and is expected to be completed July 2024, operational year assumed first full year = 2025

Land Use

Land use type, unit amount, and square ft for apartments from applicant. 45 parking spaces per PD, update parking lot acerage to .27 to make total lot acerage amount be equal to 1.06 acres, per PD.

Construction - Phasing

No demo phasing per PD. Adjsuted total construction days to match total project construction from PD (15 months construction, 5 days per week, 300 days of construction)

Construction - Equipment

All construction equipment for all phases is caleemod deafult type, unit amount, and usage. Conservativley assumed to be typical of land use and similar to PD

Construction - Trips and VMT

Assume 6 haul trucks for hauling material on, off, and throughout site. Assume same as default for vendor trucks.

Operation - Energy

SMAQMD Tier 1 BMP 1, no natural gas infrastructure all electric. natural gas KBTU converted to KWhr and added to default electricity kwhr/size/year under non-title 24. No changes to lighting energy intensity default

Construction Mitigation

Construction mitigation applied per SMAQMD caleemod guidance - SMAQMD ceqa guide page 3-8: water exposed area 2x a day, unpaved road 15 mph, clean paved road 9% PM reduction

Construction with SMAQMD Construction Best Management Practice reductions applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	lb/day									
2023	3	27	22	0	6	1	7	3	1	4
2024	32	18	24	0	0	1	1	0	1	1
Maximum	31.70	26.92	24.45	0.05	6.13	1.12	7.24	2.93	1.06	3.95

	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	0.1415	1.0738	1.1627	2.2000e-003	0.0319	0.0460	0.0778	0.0112	0.0443	0.0555	0.0000	184.2408	184.2408	0.0290	1.8200e-003	185.5063
2024	0.2684	0.5934	0.7068	1.3100e-003	0.0119	0.0240	0.0358	3.2100e-003	0.0231	0.0263	0.0000	110.3229	110.3229	0.0174	1.0200e-003	111.0620
Maximum	0.2684	1.0738	1.1627	**2.2000e-003**	0.0319	0.0460	0.0778	0.0112	0.0443	0.0555	0.0000	184.2408	184.2408	0.0290	**1.8200e-003**	185.5063

Operation w/ Implementation of SMAQMG GHG Tier 1 BMP 1 (all-electric). BMP 2 (EV charging) not quantified

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day									
Area	0.83	0.03	2.48	0.00		0.01	0.01		0.01	0.01
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Mobile	0.51	0.49	4.10	0.01	0.88	0.01	0.89	0.24	0.01	0.24
Waste						0.00	0.00		0.00	0.00
Water						0.00	0.00		0.00	0.00
Total	1.34	0.52	6.58	**0.01**	0.88	0.02	0.90	0.24	0.02	0.26

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1467	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	33.4335	33.4335	3.0800e-003	3.7000e-004	33.6218
Mobile	0.0722	0.0922	0.6587	1.3800e-003	0.1475	1.0900e-003	0.1486	0.0394	1.0200e-003	0.0405	0.0000	128.1447	128.1447	8.8600e-003	6.4100e-003	130.2773
Waste						0.0000	0.0000		0.0000	0.0000	2.8013	0.0000	2.8013	0.1656	0.0000	6.9400
Water						0.0000	0.0000		0.0000	0.0000	0.6916	2.2817	2.9733	2.5900e-003	1.5300e-003	3.4938
Total	0.2189	0.0957	0.9684	**1.4000e-003**	0.1475	**2.8100e-003**	0.1503	0.0394	**2.7400e-003**	0.0422	3.4928	164.3664	167.8592	0.1806	**8.3100e-003**	174.8517

Operational Energy Summary

Land Use	Electricity kWh/year	Electricity MWh/year	Diesel gallons/year	Gasoline gallons/year
Residential Units	199,600	200	0.00	0.00
Parking Lot Lighting	6,300	6	0.00	0.00
Total	**205,900**	**206**	**0**	**0**

therm/kbtu	100.000000
kBTU/MMBT	1000

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	199600	32.4105	2.9900e-003	3.6000e-004	32.5931
Parking Lot	6300	1.0230	9.0000e-005	1.0000e-005	1.0287
Total		33.4335	**3.0800e-003**	**3.7000e-004**	33.6218

Energy Calculations Summary

Operational Fuel Use Summary

Fuel Type	Fleet Mix (%)	Gallons per Mile	Annual VMT	Gallons
Gasoline	98.81%	23.90	398,113	9,401,211
Diesel	1.19%	8.36		39,527

Notes:

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2021.
3. Annual VMT obtained from CalEEMod output file.

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: Sacramento
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Gasoline Fuel Consumption 1,000 gallons/day	Diesel Fuel Consumption 1,000 gallons/day
Sacrament	2025	All Other B	Aggregate	Aggregate	Diesel	459.1525	24332.464	4086.458		2.758850969
Sacrament	2025	LDA	Aggregate	Aggregate	Gasoline	491398.3	18017007	2259540	617.4841021	
Sacrament	2025	LDA	Aggregate	Aggregate	Diesel	1553.179	41591.195	6423.396		0.962694975
Sacrament	2025	LDT1	Aggregate	Aggregate	Gasoline	48785.94	1547597.8	212712.2	63.33573387	
Sacrament	2025	LDT1	Aggregate	Aggregate	Diesel	18.32966	167.48915	51.70598		0.007047228
Sacrament	2025	LDT2	Aggregate	Aggregate	Gasoline	237055.1	8875175.1	1098484	375.8620765	
Sacrament	2025	LDT2	Aggregate	Aggregate	Diesel	742.8591	29745.885	3530.433		0.91511317
Sacrament	2025	LHD1	Aggregate	Aggregate	Gasoline	21064.7	760756.24	313832.7	79.20833646	
Sacrament	2025	LHD1	Aggregate	Aggregate	Diesel	14102.97	504881.71	177397.7		31.54107237
Sacrament	2025	LHD2	Aggregate	Aggregate	Gasoline	2913.053	105559.79	43400.14	12.19562128	
Sacrament	2025	LHD2	Aggregate	Aggregate	Diesel	5366.008	203025.01	67497.63		15.2890039
Sacrament	2025	MCY	Aggregate	Aggregate	Gasoline	26621.96	143679.22	53243.92	3.585081887	
Sacrament	2025	MDV	Aggregate	Aggregate	Gasoline	152263.9	5300161.2	691884.2	275.1075475	
Sacrament	2025	MDV	Aggregate	Aggregate	Diesel	2523.926	93387.597	11727.82		3.816626134
Sacrament	2025	MH	Aggregate	Aggregate	Gasoline	2699.2	24193.056	270.028	5.482646957	
Sacrament	2025	MH	Aggregate	Aggregate	Diesel	1085.673	9792.3616	108.5673		1.042222345
Sacrament	2025	Motor Coa	Aggregate	Aggregate	Diesel	96.2828	12872.052	2212.579		2.318553832
Sacrament	2025	OBUS	Aggregate	Aggregate	Gasoline	520.9637	22263.948	10423.44	4.68545612	
Sacrament	2025	PTO	Aggregate	Aggregate	Diesel	0	23918.819	0		4.778072245
Sacrament	2025	SBUS	Aggregate	Aggregate	Gasoline	120.8436	6367.6112	483.3745	0.628580268	
Sacrament	2025	SBUS	Aggregate	Aggregate	Diesel	978.3427	21557.862	14166.4		2.653029999
Sacrament	2025	T6 CAIRP h	Aggregate	Aggregate	Diesel	84.43564	17260.198	1940.331		1.755639203
Sacrament	2025	T6 CAIRP sı	Aggregate	Aggregate	Diesel	77.68381	4535.4743	1785.174		0.499308551
Sacrament	2025	T6 instate l	Aggregate	Aggregate	Diesel	1768.445	92741.439	20959.97		10.42975712
Sacrament	2025	T6 instate s	Aggregate	Aggregate	Diesel	8365.227	337779.28	103415.7		39.76236362

Sacrament	2025	T6 OOS he	Aggregate	Aggregate	Diesel	40.09778	10210.897	921.447				1.029599414
Sacrament	2025	T6 OOS sm	Aggregate	Aggregate	Diesel	40.14341	2333.4557	922.4957				0.253329741
Sacrament	2025	T6 Public	Aggregate	Aggregate	Diesel	4371.277	177571.57	22424.65				22.54876914
Sacrament	2025	T6 Utility	Aggregate	Aggregate	Diesel	56.86646	2380.6773	727.8907				0.267054242
Sacrament	2025	T6TS	Aggregate	Aggregate	Gasoline	1996.7	93880.676	39949.98			20.20420805	
Sacrament	2025	T7 CAIRP	Aggregate	Aggregate	Diesel	929.9493	188597.96	21370.23				30.36721291
Sacrament	2025	T7 NNOOS	Aggregate	Aggregate	Diesel	819.5219	223562.82	18832.61				34.98741774
Sacrament	2025	T7 NOOS	Aggregate	Aggregate	Diesel	347.6814	81289.092	7989.719				13.02898585
Sacrament	2025	T7 Other P	Aggregate	Aggregate	Diesel	11.26841	2092.1876	184.3512				0.349865997
Sacrament	2025	T7 POAK	Aggregate	Aggregate	Diesel	37.31875	3714.9771	610.5347				0.633795723
Sacrament	2025	T7 Public	Aggregate	Aggregate	Diesel	4147.789	177768.39	21278.16				33.7475674
Sacrament	2025	T7 Single	Aggregate	Aggregate	Diesel	2054.519	117224.21	19353.57				19.93384124
Sacrament	2025	T7 SWCV	Aggregate	Aggregate	Diesel	285.4256	18514.447	1312.958				7.807676579
Sacrament	2025	T7 Tractor	Aggregate	Aggregate	Diesel	1028.071	77318.93	14937.88				12.56836859
Sacrament	2025	T7 Utility	Aggregate	Aggregate	Diesel	29.57644	1313.9289	378.5784				0.22505736
Sacrament	2025	T7IS	Aggregate	Aggregate	Gasoline	7.621424	193.64383	152.4894			0.05660207	
Sacrament	2025	UBUS	Aggregate	Aggregate	Gasoline	184.2324	13976.261	736.9297			2.974664125	
Sacrament	2025	UBUS	Aggregate	Aggregate	Diesel	6.215217	294.36372	24.86087				0.03113556
										total	**1460.81**	**296.31**

		mpg
TOTAL	37,412,588	21.3
Total (Gas)	34,910,811	23.9
Total (Dies	2,477,444	8.4

Annual VMT

398,113

	Mix (%)	**Miles**	**Gallons**
Gas	98.8%	393,385	9,401,211
Diesel	1.2%	4,728	39,527

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
All project land uses (residential + parking)	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

Gas	98.8%
Diesel	1.2%

Energy Calculations Summary

Construction Fuel Usage Summary

Construction Year	Diesel Off-road Equipment (gallons)	Gasoline On-road (gallons)	Diesel On-road (gallons)	Diesel Combined
2022-2023	14,697	4,996	6	14,703

Total Gasoline	**4,996**	**gallons**
Total Diesel	**14,703**	**gallons**

2022 & 2023 Construction Offroad Equipment

Phase Name	Offroad Equipment	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Site Preparation	Graders	1	8.00	187	0.41	3	0.6	49
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40	3	0.6	55
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37	3	0.6	23
Grading	Graders	1	8.00	187	0.41	5	0.6	98
Grading	Rubber Tired Dozers	1	8.00	247	0.40	5	0.6	126
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37	5	0.6	80
Building Construction	Cranes	1	6.00	231	0.29	265	0.6	3,201
Building Construction	Forklifts	1	6.00	89	0.20	265	0.6	851
Building Construction	Generator Sets	1	8.00	84	0.74	265	0.6	3,961
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37	265	0.6	1,715
Building Construction	Welders	3	8.00	46	0.45	265	0.6	3,957
Paving	Cement and Mortar Mixers	1	6.00	9	0.56	13	0.6	12
Paving	Pavers	1	6.00	130	0.42	13	0.6	130
Paving	Paving Equipment	1	8.00	132	0.36	13	0.6	151
Paving	Rollers	1	7.00	80	0.38	13	0.6	85
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	13	0.6	114
Architectural Coating	Air Compressors	1	6.00	78	0.48	13	0.6	89
							TOTAL	**14,697**

Construction Phasing

Construction Phase	Number of days (caleemod default)	Adjusted days per project timesline
Site Prep	2	3
Grading	4	5
Building Construction	200	265
Paving	10	13
Architectural Coatings	10	13
Total	226	300.00

Note: No demolition phase included. Adjusted caleemod default construction phasing to not exceed project timeline in PD. See master assumptions tab in larger excel assumption file

Trips and VMT

2022

Phase Name	Daily Worker Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Hauling Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Site Preparation	8.00	300.00	2400.00	0.00	10.00	6.50	20.00	20.00	15600	0	0	**606**	
Grading	10.00	300.00	3000.00	0.00	10.00	6.50	20.00	20.00	19500	0	0	**757**	
Building Construction	29.00	300.00	8700.00	6.00	10.00	6.50	20.00	20.00	56550	120	120	**2,195**	**6**
Paving	13.00	300.00	3900.00	0.00	10.00	6.50	20.00	20.00	25350	0	0	**984**	
Architectural Coating	6.00	300.00	1800.00	0.00	10.00	6.50	20.00	20.00	11700	0	0	**454**	
												4,996	**6**

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

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: Sacramento
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel gas	Diesel gas	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
				miles/hr		vehicles	miles/day	trips/day	00 gallons/	00 gallons/			
Sacramento	2023	LDA	Aggregate	Aggregate	Gasoline	495444.2	18039887	2281180	638.6074	0.00	28.25	25.76	6.07
Sacramento	2023	LDT1	Aggregate	Aggregate	Gasoline	51757.6	1638074	226418.4	68.83871	0.00	23.80		
Sacramento	2023	LDT2	Aggregate	Aggregate	Gasoline	228403.2	8495405	1060057	373.3643	0.00	22.75		
Sacramento	2023	T7 Tractor	Aggregate	Aggregate	Diesel	917.7543	74396.8	13334.97	0.00	12.25005	6.07		

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

University Avenue Housing Con + Op - Sacramento County, Annual

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

University Avenue Housing Con + Op

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	45.00	Space	0.27	18,000.00	0
Apartments Mid Rise	30.00	Dwelling Unit	0.79	30,000.00	80

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	2			**Operational Year**	2025
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	357.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction starts May 2023 and is expected to be completed July 2024, operational year assumed first full year = 2025

Land Use - Land use type, unit amount, and square ft for apartments from applicant. 45 parking spaces per PD, update parking lot acerage to .27 to make total lot acerage amount be equal to 1.06 acres, per PD.

Construction Phase - No demo phasing per PD. Adjsuted total construction days to match total project construction from PD (15 months construction, 5 days per week, 300 days of construction)

Off-road Equipment - No demolition phase, put 0 for all equipment unit amounts.

Trips and VMT - Assume 6 haul trucks for hauling material on, off, and throughout site. Assume same as default for vendor trucks.

Grading - Leave default

Architectural Coating -

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation - Construction mitigation applied per SMAQMD caleemod guidance - SMAQMD ceqa guide page 3-8: water exposed area 2x a day, unpaved road 15 mph, clean paved road 9% PM reduction

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

Water Mitigation -

Area Coating -

Energy Use - SMAQMD Tier 1 BMP 1, no natural gas infrastructure all electric. natural gas KBTU converted to KWhr and added to default electricity kwhr/size/year under non-title 24. No changes to lighting energy intensity default

Stationary Sources - Emergency Generators and Fire Pumps EF -

Off-road Equipment - All construction equipment for all phases is caleemod deafult type, unit amount, and usage. Conservativley assumed to be typical of land use and similar to PD>

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	2.00	3.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	200.00	265.00
tblConstructionPhase	NumDays	10.00	13.00
tblConstructionPhase	NumDays	10.00	13.00
tblEnergyUse	NT24E	3,054.10	5,911.90
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	T24E	98.18	0.00
tblEnergyUse	T24NG	6,729.23	0.00
tblLandUse	LotAcreage	0.41	0.27
tblTripsAndVMT	HaulingTripNumber	0.00	6.00

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	0.1416	1.0738	1.1627	2.2000e-003	0.0484	0.0460	0.0944	0.0188	0.0443	0.0631	0.0000	184.2410	184.2410	0.0290	1.8200e-003	185.5065
2024	0.2684	0.5934	0.7068	1.3100e-003	0.0128	0.0240	0.0368	3.4500e-003	0.0231	0.0265	0.0000	110.3230	110.3230	0.0174	1.0200e-003	111.0621
Maximum	**0.2684**	**1.0738**	**1.1627**	**2.2000e-003**	**0.0484**	**0.0460**	**0.0944**	**0.0188**	**0.0443**	**0.0631**	**0.0000**	**184.2410**	**184.2410**	**0.0290**	**1.8200e-003**	**185.5065**

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	0.1415	1.0738	1.1627	2.2000e-003	0.0319	0.0460	0.0778	0.0112	0.0443	0.0555	0.0000	184.2408	184.2408	0.0290	1.8200e-003	185.5063
2024	0.2684	0.5934	0.7068	1.3100e-003	0.0119	0.0240	0.0358	3.2100e-003	0.0231	0.0263	0.0000	110.3229	110.3229	0.0174	1.0200e-003	111.0620
Maximum	**0.2684**	**1.0738**	**1.1627**	**2.2000e-003**	**0.0319**	**0.0460**	**0.0778**	**0.0112**	**0.0443**	**0.0555**	**0.0000**	**184.2408**	**184.2408**	**0.0290**	**1.8200e-003**	**185.5063**

University Avenue Housing Con + Op - Sacramento 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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.58**	**0.00**	**13.34**	**35.16**	**0.00**	**8.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2023**	**7-31-2023**	0.4642	0.4642
2	**8-1-2023**	**10-31-2023**	0.4493	0.4493
3	**11-1-2023**	**1-31-2024**	0.4412	0.4412
4	**2-1-2024**	**4-30-2024**	0.6414	0.6414
5	**5-1-2024**	**7-31-2024**	0.0599	0.0599
		Highest	0.6414	0.6414

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1467	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	33.4335	33.4335	3.0800e-003	3.7000e-004	33.6218
Mobile	0.0722	0.0922	0.6587	1.3800e-003	0.1475	1.0900e-003	0.1486	0.0394	1.0200e-003	0.0405	0.0000	128.1447	128.1447	8.8600e-003	6.4100e-003	130.2773
Waste						0.0000	0.0000		0.0000	0.0000	2.8013	0.0000	2.8013	0.1656	0.0000	6.9400
Water						0.0000	0.0000		0.0000	0.0000	0.6916	2.2817	2.9733	2.5900e-003	1.5300e-003	3.4938
Total	**0.2189**	**0.0957**	**0.9684**	**1.4000e-003**	**0.1475**	**2.8100e-003**	**0.1503**	**0.0394**	**2.7400e-003**	**0.0422**	**3.4928**	**164.3664**	**167.8592**	**0.1806**	**8.3100e-003**	**174.8517**

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	0.1467	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	33.4335	33.4335	3.0800e-003	3.7000e-004	33.6218
Mobile	0.0722	0.0922	0.6587	1.3800e-003	0.1475	1.0900e-003	0.1486	0.0394	1.0200e-003	0.0405	0.0000	128.1447	128.1447	8.8600e-003	6.4100e-003	130.2773
Waste						0.0000	0.0000		0.0000	0.0000	2.8013	0.0000	2.8013	0.1656	0.0000	6.9400
Water						0.0000	0.0000		0.0000	0.0000	0.6916	2.2817	2.9733	2.5900e-003	1.5300e-003	3.4938
Total	**0.2189**	**0.0957**	**0.9684**	**1.4000e-003**	**0.1475**	**2.8100e-003**	**0.1503**	**0.0394**	**2.7400e-003**	**0.0422**	**3.4928**	**164.3664**	**167.8592**	**0.1806**	**8.3100e-003**	**174.8517**

	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**

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	5/1/2023	5/3/2023	5	3	
2	Grading	Grading	5/3/2023	5/9/2023	5	5	
3	Building Construction	Building Construction	5/9/2023	5/13/2024	5	265	

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

4	Paving	Paving	2/13/2024	2/29/2024	5	13	
5	Architectural Coating	Architectural Coating	2/27/2024	3/14/2024	5	13	

Acres of Grading (Site Preparation Phase): 2.81

Acres of Grading (Grading Phase): 5

Acres of Paving: 0.27

Residential Indoor: 60,750; Residential Outdoor: 20,250; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,080 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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

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	3	8.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	29.00	6.00	6.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

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					9.3900e-003	0.0000	9.3900e-003	4.5100e-003	0.0000	4.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0186	9.9600e-003	3.0000e-005		7.6000e-004	7.6000e-004		7.0000e-004	7.0000e-004	0.0000	2.2671	2.2671	7.3000e-004	0.0000	2.2855
Total	**1.7000e-003**	**0.0186**	**9.9600e-003**	**3.0000e-005**	**9.3900e-003**	**7.6000e-004**	**0.0102**	**4.5100e-003**	**7.0000e-004**	**5.2100e-003**	**0.0000**	**2.2671**	**2.2671**	**7.3000e-004**	**0.0000**	**2.2855**

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	3.0000e-005	2.0000e-005	2.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0698	0.0698	0.0000	0.0000	0.0705
Total	**3.0000e-005**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0698**	**0.0698**	**0.0000**	**0.0000**	**0.0705**

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					4.2300e-003	0.0000	4.2300e-003	2.0300e-003	0.0000	2.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0186	9.9600e-003	3.0000e-005		7.6000e-004	7.6000e-004		7.0000e-004	7.0000e-004	0.0000	2.2671	2.2671	7.3000e-004	0.0000	2.2855
Total	**1.7000e-003**	**0.0186**	**9.9600e-003**	**3.0000e-005**	**4.2300e-003**	**7.6000e-004**	**4.9900e-003**	**2.0300e-003**	**7.0000e-004**	**2.7300e-003**	**0.0000**	**2.2671**	**2.2671**	**7.3000e-004**	**0.0000**	**2.2855**

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	3.0000e-005	2.0000e-005	2.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0698	0.0698	0.0000	0.0000	0.0705
Total	**3.0000e-005**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0698**	**0.0698**	**0.0000**	**0.0000**	**0.0705**

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					0.0177	0.0000	0.0177	8.5600e-003	0.0000	8.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0362	0.0218	5.0000e-005		1.5100e-003	1.5100e-003		1.3900e-003	1.3900e-003	0.0000	4.5260	4.5260	1.4600e-003	0.0000	4.5626
Total	**3.3300e-003**	**0.0362**	**0.0218**	**5.0000e-005**	**0.0177**	**1.5100e-003**	**0.0192**	**8.5600e-003**	**1.3900e-003**	**9.9500e-003**	**0.0000**	**4.5260**	**4.5260**	**1.4600e-003**	**0.0000**	**4.5626**

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	7.0000e-005	4.0000e-005	5.8000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1455	0.1455	0.0000	0.0000	0.1468
Total	**7.0000e-005**	**4.0000e-005**	**5.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1455**	**0.1455**	**0.0000**	**0.0000**	**0.1468**

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					7.9700e-003	0.0000	7.9700e-003	3.8500e-003	0.0000	3.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0362	0.0218	5.0000e-005		1.5100e-003	1.5100e-003		1.3900e-003	1.3900e-003	0.0000	4.5260	4.5260	1.4600e-003	0.0000	4.5626
Total	**3.3300e-003**	**0.0362**	**0.0218**	**5.0000e-005**	**7.9700e-003**	**1.5100e-003**	**9.4800e-003**	**3.8500e-003**	**1.3900e-003**	**5.2400e-003**	**0.0000**	**4.5260**	**4.5260**	**1.4600e-003**	**0.0000**	**4.5626**

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	7.0000e-005	4.0000e-005	5.8000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1455	0.1455	0.0000	0.0000	0.1468
Total	**7.0000e-005**	**4.0000e-005**	**5.8000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1455**	**0.1455**	**0.0000**	**0.0000**	**0.1468**

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	0.1287	0.9895	1.0656	1.8600e-003		0.0435	0.0435		0.0420	0.0420	0.0000	153.4513	153.4513	0.0261	0.0000	154.1027
Total	**0.1287**	**0.9895**	**1.0656**	**1.8600e-003**		**0.0435**	**0.0435**		**0.0420**	**0.0420**	**0.0000**	**153.4513**	**153.4513**	**0.0261**	**0.0000**	**154.1027**

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	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1189	0.1189	0.0000	2.0000e-005	0.1246
Vendor	6.6000e-004	0.0247	7.4500e-003	1.0000e-004	2.9700e-003	1.3000e-004	3.1000e-003	8.6000e-004	1.3000e-004	9.8000e-004	0.0000	9.4033	9.4033	2.3000e-004	1.3800e-003	9.8203
Worker	7.0300e-003	4.3400e-003	0.0570	1.6000e-004	0.0180	1.0000e-004	0.0181	4.7900e-003	9.0000e-005	4.8700e-003	0.0000	14.2592	14.2592	4.6000e-004	4.1000e-004	14.3936
Total	**7.7000e-003**	**0.0294**	**0.0645**	**2.6000e-004**	**0.0210**	**2.3000e-004**	**0.0212**	**5.6600e-003**	**2.2000e-004**	**5.8600e-003**	**0.0000**	**23.7813**	**23.7813**	**6.9000e-004**	**1.8100e-003**	**24.3384**

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	0.1287	0.9895	1.0656	1.8600e-003		0.0435	0.0435		0.0420	0.0420	0.0000	153.4511	153.4511	0.0261	0.0000	154.1025
Total	**0.1287**	**0.9895**	**1.0656**	**1.8600e-003**		**0.0435**	**0.0435**		**0.0420**	**0.0420**	**0.0000**	**153.4511**	**153.4511**	**0.0261**	**0.0000**	**154.1025**

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	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1189	0.1189	0.0000	2.0000e-005	0.1246
Vendor	6.6000e-004	0.0247	7.4500e-003	1.0000e-004	2.7800e-003	1.3000e-004	2.9100e-003	8.1000e-004	1.3000e-004	9.4000e-004	0.0000	9.4033	9.4033	2.3000e-004	1.3800e-003	9.8203
Worker	7.0300e-003	4.3400e-003	0.0570	1.6000e-004	0.0166	1.0000e-004	0.0167	4.4400e-003	9.0000e-005	4.5300e-003	0.0000	14.2592	14.2592	4.6000e-004	4.1000e-004	14.3936
Total	**7.7000e-003**	**0.0294**	**0.0645**	**2.6000e-004**	**0.0194**	**2.3000e-004**	**0.0196**	**5.2600e-003**	**2.2000e-004**	**5.4800e-003**	**0.0000**	**23.7813**	**23.7813**	**6.9000e-004**	**1.8100e-003**	**24.3384**

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	0.0682	0.5311	0.6008	1.0600e-003		0.0216	0.0216		0.0209	0.0209	0.0000	87.1734	87.1734	0.0145	0.0000	87.5363
Total	**0.0682**	**0.5311**	**0.6008**	**1.0600e-003**		**0.0216**	**0.0216**		**0.0209**	**0.0209**	**0.0000**	**87.1734**	**87.1734**	**0.0145**	**0.0000**	**87.5363**

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	1.7000e-004	3.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0662	0.0662	0.0000	1.0000e-005	0.0694
Vendor	3.6000e-004	0.0138	4.1000e-003	5.0000e-005	1.6900e-003	7.0000e-005	1.7600e-003	4.9000e-004	7.0000e-005	5.6000e-004	0.0000	5.2401	5.2401	1.3000e-004	7.7000e-004	5.4729
Worker	3.7300e-003	2.2000e-003	0.0301	9.0000e-005	0.0102	5.0000e-005	0.0103	2.7200e-003	5.0000e-005	2.7700e-003	0.0000	7.8354	7.8354	2.4000e-004	2.2000e-004	7.9062
Total	**4.0900e-003**	**0.0161**	**0.0342**	**1.4000e-004**	**0.0119**	**1.2000e-004**	**0.0121**	**3.2200e-003**	**1.2000e-004**	**3.3400e-003**	**0.0000**	**13.1417**	**13.1417**	**3.7000e-004**	**1.0000e-003**	**13.4485**

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	0.0682	0.5311	0.6008	1.0600e-003		0.0216	0.0216		0.0209	0.0209	0.0000	87.1733	87.1733	0.0145	0.0000	87.5362
Total	**0.0682**	**0.5311**	**0.6008**	**1.0600e-003**		**0.0216**	**0.0216**		**0.0209**	**0.0209**	**0.0000**	**87.1733**	**87.1733**	**0.0145**	**0.0000**	**87.5362**

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	1.7000e-004	3.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0662	0.0662	0.0000	1.0000e-005	0.0694
Vendor	3.6000e-004	0.0138	4.1000e-003	5.0000e-005	1.5800e-003	7.0000e-005	1.6500e-003	4.6000e-004	7.0000e-005	5.3000e-004	0.0000	5.2401	5.2401	1.3000e-004	7.7000e-004	5.4729
Worker	3.7300e-003	2.2000e-003	0.0301	9.0000e-005	9.4300e-003	5.0000e-005	9.4800e-003	2.5200e-003	5.0000e-005	2.5700e-003	0.0000	7.8354	7.8354	2.4000e-004	2.2000e-004	7.9062
Total	**4.0900e-003**	**0.0161**	**0.0342**	**1.4000e-004**	**0.0110**	**1.2000e-004**	**0.0112**	**2.9800e-003**	**1.2000e-004**	**3.1100e-003**	**0.0000**	**13.1417**	**13.1417**	**3.7000e-004**	**1.0000e-003**	**13.4485**

3.5 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	4.0200e-003	0.0381	0.0574	9.0000e-005		1.8300e-003	1.8300e-003		1.6900e-003	1.6900e-003	0.0000	7.6531	7.6531	2.4300e-003	0.0000	7.7138
Paving	3.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.3700e-003**	**0.0381**	**0.0574**	**9.0000e-005**		**1.8300e-003**	**1.8300e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**7.6531**	**7.6531**	**2.4300e-003**	**0.0000**	**7.7138**

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

3.5 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	2.3000e-004	1.3000e-004	1.8300e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4756	0.4756	1.0000e-005	1.0000e-005	0.4799
Total	**2.3000e-004**	**1.3000e-004**	**1.8300e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4756**	**0.4756**	**1.0000e-005**	**1.0000e-005**	**0.4799**

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	4.0200e-003	0.0381	0.0574	9.0000e-005		1.8300e-003	1.8300e-003		1.6900e-003	1.6900e-003	0.0000	7.6531	7.6531	2.4300e-003	0.0000	7.7138
Paving	3.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.3700e-003**	**0.0381**	**0.0574**	**9.0000e-005**		**1.8300e-003**	**1.8300e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**7.6531**	**7.6531**	**2.4300e-003**	**0.0000**	**7.7138**

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

3.5 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	2.3000e-004	1.3000e-004	1.8300e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4756	0.4756	1.0000e-005	1.0000e-005	0.4799
Total	**2.3000e-004**	**1.3000e-004**	**1.8300e-003**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**5.8000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4756**	**0.4756**	**1.0000e-005**	**1.0000e-005**	**0.4799**

3.6 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	0.1902					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1700e-003	7.9200e-003	0.0118	2.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	1.6596	1.6596	9.0000e-005	0.0000	1.6620
Total	**0.1914**	**7.9200e-003**	**0.0118**	**2.0000e-005**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**1.6596**	**1.6596**	**9.0000e-005**	**0.0000**	**1.6620**

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

3.6 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	1.0000e-004	6.0000e-005	8.4000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2195	0.2195	1.0000e-005	1.0000e-005	0.2215
Total	**1.0000e-004**	**6.0000e-005**	**8.4000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2195**	**0.2195**	**1.0000e-005**	**1.0000e-005**	**0.2215**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1902					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1700e-003	7.9200e-003	0.0118	2.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	1.6596	1.6596	9.0000e-005	0.0000	1.6620
Total	**0.1914**	**7.9200e-003**	**0.0118**	**2.0000e-005**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**1.6596**	**1.6596**	**9.0000e-005**	**0.0000**	**1.6620**

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

3.6 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	1.0000e-004	6.0000e-005	8.4000e-004	0.0000	2.6000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2195	0.2195	1.0000e-005	1.0000e-005	0.2215
Total	**1.0000e-004**	**6.0000e-005**	**8.4000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2195**	**0.2195**	**1.0000e-005**	**1.0000e-005**	**0.2215**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	0.0722	0.0922	0.6587	1.3800e-003	0.1475	1.0900e-003	0.1486	0.0394	1.0200e-003	0.0405	0.0000	128.1447	128.1447	8.8600e-003	6.4100e-003	130.2773
Unmitigated	0.0722	0.0922	0.6587	1.3800e-003	0.1475	1.0900e-003	0.1486	0.0394	1.0200e-003	0.0405	0.0000	128.1447	128.1447	8.8600e-003	6.4100e-003	130.2773

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	163.20	147.30	122.70	398,113	398,113
Parking Lot	0.00	0.00	0.00		
Total	163.20	147.30	122.70	398,113	398,113

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 Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Parking Lot	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

5.0 Energy Detail

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

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	33.4335	33.4335	3.0800e-003	3.7000e-004	33.6218
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	33.4335	33.4335	3.0800e-003	3.7000e-004	33.6218
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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 Mid Rise	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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	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 Mid Rise	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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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 Mid Rise	199600	32.4105	2.9900e-003	3.6000e-004	32.5931
Parking Lot	6300	1.0230	9.0000e-005	1.0000e-005	1.0287
Total		**33.4335**	**3.0800e-003**	**3.7000e-004**	**33.6218**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	199600	32.4105	2.9900e-003	3.6000e-004	32.5931
Parking Lot	6300	1.0230	9.0000e-005	1.0000e-005	1.0287
Total		**33.4335**	**3.0800e-003**	**3.7000e-004**	**33.6218**

6.0 Area Detail

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1467	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Unmitigated	0.1467	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187

University Avenue Housing Con + Op - Sacramento County, Annual

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

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1183					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	9.3300e-003	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Total	**0.1467**	**3.5700e-003**	**0.3097**	**2.0000e-005**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**0.5065**	**0.5065**	**4.9000e-004**	**0.0000**	**0.5187**

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1183					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	9.3300e-003	3.5700e-003	0.3097	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	0.5065	0.5065	4.9000e-004	0.0000	0.5187
Total	**0.1467**	**3.5700e-003**	**0.3097**	**2.0000e-005**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**0.5065**	**0.5065**	**4.9000e-004**	**0.0000**	**0.5187**

7.0 Water Detail

7.1 Mitigation Measures Water

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	2.9733	2.5900e-003	1.5300e-003	3.4938
Unmitigated	2.9733	2.5900e-003	1.5300e-003	3.4938

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.95462 / 1.23226	2.9733	2.5900e-003	1.5300e-003	3.4938
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.9733**	**2.5900e-003**	**1.5300e-003**	**3.4938**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.95462 / 1.23226	2.9733	2.5900e-003	1.5300e-003	3.4938
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.9733**	**2.5900e-003**	**1.5300e-003**	**3.4938**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.8013	0.1656	0.0000	6.9400
Unmitigated	2.8013	0.1656	0.0000	6.9400

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 Mid Rise	13.8	2.8013	0.1656	0.0000	6.9400
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.8013**	**0.1656**	**0.0000**	**6.9400**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	13.8	2.8013	0.1656	0.0000	6.9400
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.8013**	**0.1656**	**0.0000**	**6.9400**

9.0 Operational Offroad

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

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

University Avenue Housing Con + Op - Sacramento County, Summer

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

University Avenue Housing Con + Op

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	45.00	Space	0.27	18,000.00	0
Apartments Mid Rise	30.00	Dwelling Unit	0.79	30,000.00	80

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	2			**Operational Year**	2025
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	357.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction starts May 2023 and is expected to be completed July 2024, operational year assumed first full year = 2025

Land Use - Land use type, unit amount, and square ft for apartments from applicant. 45 parking spaces per PD, update parking lot acerage to .27 to make total lot acerage amount be equal to 1.06 acres, per PD.

Construction Phase - No demo phasing per PD. Adjsuted total construction days to match total project construction from PD (15 months construction, 5 days per week, 300 days of construction)

Off-road Equipment - No demolition phase, put 0 for all equipment unit amounts.

Trips and VMT - Assume 6 haul trucks for hauling material on, off, and throughout site. Assume same as default for vendor trucks.

Grading - Leave default

Architectural Coating -

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation - Construction mitigation applied per SMAQMD caleemod guidance - SMAQMD ceqa guide page 3-8: water exposed area 2x a day, unpaved road 15 mph, clean paved road 9% PM reduction

University Avenue Housing Con + Op - Sacramento County, Summer

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

Water Mitigation -

Area Coating -

Energy Use - SMAQMD Tier 1 BMP 1, no natural gas infrastructure all electric. natural gas KBTU converted to KWhr and added to default electricity kwhr/size/year under non-title 24. No changes to lighting energy intensity default

Stationary Sources - Emergency Generators and Fire Pumps EF -

Off-road Equipment - All construction equipment for all phases is caleemod deafult type, unit amount, and usage. Conservativley assumed to be typical of land use and similar to PD>

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	2.00	3.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	200.00	265.00
tblConstructionPhase	NumDays	10.00	13.00
tblConstructionPhase	NumDays	10.00	13.00
tblEnergyUse	NT24E	3,054.10	5,911.90
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	T24E	98.18	0.00
tblEnergyUse	T24NG	6,729.23	0.00
tblLandUse	LotAcreage	0.41	0.27
tblTripsAndVMT	HaulingTripNumber	0.00	6.00

2.0 Emissions Summary

University Avenue Housing Con + Op - Sacramento 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	2.9957	26.9217	22.4621	0.0465	13.4822	1.1219	14.5946	6.4648	1.0557	7.4882	0.0000	4,395.7087	4,395.7087	1.1878	0.0251	4,428.0714
2024	31.6965	18.4881	24.4461	0.0429	0.4017	0.7959	1.1975	0.1074	0.7582	0.8656	0.0000	4,029.3353	4,029.3353	0.7722	0.0257	4,056.3036
Maximum	**31.6965**	**26.9217**	**24.4461**	**0.0465**	**13.4822**	**1.1219**	**14.5946**	**6.4648**	**1.0557**	**7.4882**	**0.0000**	**4,395.7087**	**4,395.7087**	**1.1878**	**0.0257**	**4,428.0714**

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	2.9957	26.9217	22.4621	0.0465	6.1316	1.1219	7.2440	2.9265	1.0557	3.9499	0.0000	4,395.7087	4,395.7087	1.1878	0.0251	4,428.0714
2024	31.6965	18.4881	24.4461	0.0429	0.3708	0.7959	1.1667	0.0998	0.7582	0.8580	0.0000	4,029.3353	4,029.3353	0.7722	0.0257	4,056.3036
Maximum	**31.6965**	**26.9217**	**24.4461**	**0.0465**	**6.1316**	**1.1219**	**7.2440**	**2.9265**	**1.0557**	**3.9499**	**0.0000**	**4,395.7087**	**4,395.7087**	**1.1878**	**0.0257**	**4,428.0714**

University Avenue Housing Con + Op - Sacramento 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	53.17	0.00	46.74	53.95	0.00	42.45	0.00	0.00	0.00	0.00	0.00	0.00

University Avenue Housing Con + Op - Sacramento County, Summer

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	0.8273	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.4664	4.4664	4.2900e-003	0.0000	4.5738
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.5139	0.4905	4.1020	8.6000e-003	0.8829	6.3100e-003	0.8892	0.2354	5.8900e-003	0.2413		876.7065	876.7065	0.0538	0.0392	889.7451
Total	**1.3412**	**0.5190**	**6.5793**	**8.7300e-003**	**0.8829**	**0.0201**	**0.9030**	**0.2354**	**0.0196**	**0.2550**	**0.0000**	**881.1729**	**881.1729**	**0.0581**	**0.0392**	**894.3188**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8273	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.4664	4.4664	4.2900e-003	0.0000	4.5738
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.5139	0.4905	4.1020	8.6000e-003	0.8829	6.3100e-003	0.8892	0.2354	5.8900e-003	0.2413		876.7065	876.7065	0.0538	0.0392	889.7451
Total	**1.3412**	**0.5190**	**6.5793**	**8.7300e-003**	**0.8829**	**0.0201**	**0.9030**	**0.2354**	**0.0196**	**0.2550**	**0.0000**	**881.1729**	**881.1729**	**0.0581**	**0.0392**	**894.3188**

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

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	5/1/2023	5/3/2023	5	3	
2	Grading	Grading	5/3/2023	5/9/2023	5	5	
3	Building Construction	Building Construction	5/9/2023	5/13/2024	5	265	
4	Paving	Paving	2/13/2024	2/29/2024	5	13	
5	Architectural Coating	Architectural Coating	2/27/2024	3/14/2024	5	13	

Acres of Grading (Site Preparation Phase): 2.81

Acres of Grading (Grading Phase): 5

Acres of Paving: 0.27

Residential Indoor: 60,750; Residential Outdoor: 20,250; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,080 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

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

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	29.00	6.00	6.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

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					6.2627	0.0000	6.2627	3.0037	0.0000	3.0037			0.0000			0.0000
Off-Road	1.1339	12.4250	6.6420	0.0172		0.5074	0.5074		0.4668	0.4668		1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**1.1339**	**12.4250**	**6.6420**	**0.0172**	**6.2627**	**0.5074**	**6.7700**	**3.0037**	**0.4668**	**3.4705**		**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

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	0.0269	0.0129	0.2174	5.6000e-004	0.0609	3.1000e-004	0.0612	0.0161	2.9000e-004	0.0164		56.2309	56.2309	1.5600e-003	1.4000e-003	56.6866
Total	**0.0269**	**0.0129**	**0.2174**	**5.6000e-004**	**0.0609**	**3.1000e-004**	**0.0612**	**0.0161**	**2.9000e-004**	**0.0164**		**56.2309**	**56.2309**	**1.5600e-003**	**1.4000e-003**	**56.6866**

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					2.8182	0.0000	2.8182	1.3517	0.0000	1.3517			0.0000			0.0000
Off-Road	1.1339	12.4250	6.6420	0.0172		0.5074	0.5074		0.4668	0.4668	0.0000	1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**1.1339**	**12.4250**	**6.6420**	**0.0172**	**2.8182**	**0.5074**	**3.3256**	**1.3517**	**0.4668**	**1.8185**	**0.0000**	**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

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	0.0269	0.0129	0.2174	5.6000e-004	0.0561	3.1000e-004	0.0564	0.0150	2.9000e-004	0.0153		56.2309	56.2309	1.5600e-003	1.4000e-003	56.6866
Total	**0.0269**	**0.0129**	**0.2174**	**5.6000e-004**	**0.0561**	**3.1000e-004**	**0.0564**	**0.0150**	**2.9000e-004**	**0.0153**		**56.2309**	**56.2309**	**1.5600e-003**	**1.4000e-003**	**56.6866**

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.0826**	**0.6044**	**7.6869**	**3.4247**	**0.5560**	**3.9807**		**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

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	0.0337	0.0162	0.2718	7.0000e-004	0.0761	3.9000e-004	0.0765	0.0202	3.6000e-004	0.0205		70.2886	70.2886	1.9500e-003	1.7500e-003	70.8583
Total	**0.0337**	**0.0162**	**0.2718**	**7.0000e-004**	**0.0761**	**3.9000e-004**	**0.0765**	**0.0202**	**3.6000e-004**	**0.0205**		**70.2886**	**70.2886**	**1.9500e-003**	**1.7500e-003**	**70.8583**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**3.1872**	**0.6044**	**3.7915**	**1.5411**	**0.5560**	**2.0971**	**0.0000**	**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

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	0.0337	0.0162	0.2718	7.0000e-004	0.0701	3.9000e-004	0.0705	0.0187	3.6000e-004	0.0191		70.2886	70.2886	1.9500e-003	1.7500e-003	70.8583
Total	**0.0337**	**0.0162**	**0.2718**	**7.0000e-004**	**0.0701**	**3.9000e-004**	**0.0705**	**0.0187**	**3.6000e-004**	**0.0191**		**70.2886**	**70.2886**	**1.9500e-003**	**1.7500e-003**	**70.8583**

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	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	**1.5233**	**11.7104**	**12.6111**	**0.0221**		**0.5145**	**0.5145**		**0.4968**	**0.4968**		**2,001.7877**	**2,001.7877**	**0.3399**		**2,010.2858**

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	6.0000e-005	3.4000e-003	7.2000e-004	1.0000e-005	3.9000e-004	3.0000e-005	4.2000e-004	1.1000e-004	3.0000e-005	1.3000e-004		1.5503	1.5503	6.0000e-005	2.5000e-004	1.6251
Vendor	8.0300e-003	0.2778	0.0865	1.1400e-003	0.0362	1.5500e-003	0.0377	0.0104	1.4800e-003	0.0119		122.6305	122.6305	3.0300e-003	0.0180	128.0631
Worker	0.0977	0.0469	0.7882	2.0200e-003	0.2206	1.1300e-003	0.2217	0.0585	1.0400e-003	0.0596		203.8369	203.8369	5.6600e-003	5.0700e-003	205.4889
Total	**0.1058**	**0.3281**	**0.8754**	**3.1700e-003**	**0.2571**	**2.7100e-003**	**0.2599**	**0.0690**	**2.5500e-003**	**0.0716**		**328.0177**	**328.0177**	**8.7500e-003**	**0.0233**	**335.1771**

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	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	**1.5233**	**11.7104**	**12.6111**	**0.0221**		**0.5145**	**0.5145**		**0.4968**	**0.4968**	**0.0000**	**2,001.7877**	**2,001.7877**	**0.3399**		**2,010.2858**

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	6.0000e-005	3.4000e-003	7.2000e-004	1.0000e-005	3.7000e-004	3.0000e-005	3.9000e-004	1.0000e-004	3.0000e-005	1.3000e-004		1.5503	1.5503	6.0000e-005	2.5000e-004	1.6251
Vendor	8.0300e-003	0.2778	0.0865	1.1400e-003	0.0338	1.5500e-003	0.0354	9.8300e-003	1.4800e-003	0.0113		122.6305	122.6305	3.0300e-003	0.0180	128.0631
Worker	0.0977	0.0469	0.7882	2.0200e-003	0.2034	1.1300e-003	0.2045	0.0543	1.0400e-003	0.0553		203.8369	203.8369	5.6600e-003	5.0700e-003	205.4889
Total	**0.1058**	**0.3281**	**0.8754**	**3.1700e-003**	**0.2376**	**2.7100e-003**	**0.2403**	**0.0642**	**2.5500e-003**	**0.0668**		**328.0177**	**328.0177**	**8.7500e-003**	**0.0233**	**335.1771**

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	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348		2,001.9214	2,001.9214	0.3334		2,010.2563
Total	**1.4200**	**11.0639**	**12.5172**	**0.0221**		**0.4506**	**0.4506**		**0.4348**	**0.4348**		**2,001.9214**	**2,001.9214**	**0.3334**		**2,010.2563**

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	6.0000e-005	3.3200e-003	7.2000e-004	1.0000e-005	3.9000e-004	3.0000e-005	4.2000e-004	1.1000e-004	2.0000e-005	1.3000e-004		1.5205	1.5205	6.0000e-005	2.4000e-004	1.5938
Vendor	7.6800e-003	0.2723	0.0838	1.1200e-003	0.0361	1.5300e-003	0.0377	0.0104	1.4600e-003	0.0119		120.2950	120.2950	2.9500e-003	0.0177	125.6357
Worker	0.0912	0.0418	0.7305	1.9500e-003	0.2206	1.0800e-003	0.2217	0.0585	9.9000e-004	0.0595		197.1284	197.1284	5.1200e-003	4.7200e-003	198.6614
Total	**0.0989**	**0.3174**	**0.8149**	**3.0800e-003**	**0.2571**	**2.6400e-003**	**0.2598**	**0.0690**	**2.4700e-003**	**0.0715**		**318.9439**	**318.9439**	**8.1300e-003**	**0.0226**	**325.8909**

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	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348	0.0000	2,001.9214	2,001.9214	0.3334		2,010.2563
Total	**1.4200**	**11.0639**	**12.5172**	**0.0221**		**0.4506**	**0.4506**		**0.4348**	**0.4348**	**0.0000**	**2,001.9214**	**2,001.9214**	**0.3334**		**2,010.2563**

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	6.0000e-005	3.3200e-003	7.2000e-004	1.0000e-005	3.7000e-004	3.0000e-005	3.9000e-004	1.0000e-004	2.0000e-005	1.3000e-004		1.5205	1.5205	6.0000e-005	2.4000e-004	1.5938
Vendor	7.6800e-003	0.2723	0.0838	1.1200e-003	0.0338	1.5300e-003	0.0354	9.8300e-003	1.4600e-003	0.0113		120.2950	120.2950	2.9500e-003	0.0177	125.6357
Worker	0.0912	0.0418	0.7305	1.9500e-003	0.2034	1.0800e-003	0.2044	0.0543	9.9000e-004	0.0553		197.1284	197.1284	5.1200e-003	4.7200e-003	198.6614
Total	**0.0989**	**0.3174**	**0.8149**	**3.0800e-003**	**0.2375**	**2.6400e-003**	**0.2402**	**0.0642**	**2.4700e-003**	**0.0667**		**318.9439**	**318.9439**	**8.1300e-003**	**0.0226**	**325.8909**

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

3.5 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	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594		1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6724**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**		**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

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	0.0409	0.0187	0.3274	8.7000e-004	0.0989	4.8000e-004	0.0994	0.0262	4.4000e-004	0.0267		88.3679	88.3679	2.2900e-003	2.1100e-003	89.0551
Total	**0.0409**	**0.0187**	**0.3274**	**8.7000e-004**	**0.0989**	**4.8000e-004**	**0.0994**	**0.0262**	**4.4000e-004**	**0.0267**		**88.3679**	**88.3679**	**2.2900e-003**	**2.1100e-003**	**89.0551**

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

3.5 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	0.6180	5.8607	8.8253	0.0136		0.2810	0.2810		0.2594	0.2594	0.0000	1,297.8688	1,297.8688	0.4114		1,308.1547
Paving	0.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6724**	**5.8607**	**8.8253**	**0.0136**		**0.2810**	**0.2810**		**0.2594**	**0.2594**	**0.0000**	**1,297.8688**	**1,297.8688**	**0.4114**		**1,308.1547**

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	0.0409	0.0187	0.3274	8.7000e-004	0.0912	4.8000e-004	0.0916	0.0243	4.4000e-004	0.0248		88.3679	88.3679	2.2900e-003	2.1100e-003	89.0551
Total	**0.0409**	**0.0187**	**0.3274**	**8.7000e-004**	**0.0912**	**4.8000e-004**	**0.0916**	**0.0243**	**4.4000e-004**	**0.0248**		**88.3679**	**88.3679**	**2.2900e-003**	**2.1100e-003**	**89.0551**

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

3.6 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	29.2647					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	**29.4454**	**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	0.0189	8.6400e-003	0.1511	4.0000e-004	0.0456	2.2000e-004	0.0459	0.0121	2.1000e-004	0.0123		40.7852	40.7852	1.0600e-003	9.8000e-004	41.1024
Total	**0.0189**	**8.6400e-003**	**0.1511**	**4.0000e-004**	**0.0456**	**2.2000e-004**	**0.0459**	**0.0121**	**2.1000e-004**	**0.0123**		**40.7852**	**40.7852**	**1.0600e-003**	**9.8000e-004**	**41.1024**

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

3.6 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	29.2647					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	**29.4454**	**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	0.0189	8.6400e-003	0.1511	4.0000e-004	0.0421	2.2000e-004	0.0423	0.0112	2.1000e-004	0.0114		40.7852	40.7852	1.0600e-003	9.8000e-004	41.1024
Total	**0.0189**	**8.6400e-003**	**0.1511**	**4.0000e-004**	**0.0421**	**2.2000e-004**	**0.0423**	**0.0112**	**2.1000e-004**	**0.0114**		**40.7852**	**40.7852**	**1.0600e-003**	**9.8000e-004**	**41.1024**

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	0.5139	0.4905	4.1020	8.6000e-003	0.8829	6.3100e-003	0.8892	0.2354	5.8900e-003	0.2413		876.7065	876.7065	0.0538	0.0392	889.7451
Unmitigated	0.5139	0.4905	4.1020	8.6000e-003	0.8829	6.3100e-003	0.8892	0.2354	5.8900e-003	0.2413		876.7065	876.7065	0.0538	0.0392	889.7451

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	163.20	147.30	122.70	398,113	398,113
Parking Lot	0.00	0.00	0.00		
Total	163.20	147.30	122.70	398,113	398,113

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 Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Parking Lot	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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 Mid Rise	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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

University Avenue Housing Con + Op - Sacramento County, Summer

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

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8273	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.4664	4.4664	4.2900e-003	0.0000	4.5738
Unmitigated	0.8273	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	4.4664	4.4664	4.2900e-003	0.0000	4.5738

University Avenue Housing Con + Op - Sacramento County, Summer

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6484					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	0.0747	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137		4.4664	4.4664	4.2900e-003		4.5738
Total	**0.8273**	**0.0285**	**2.4773**	**1.3000e-004**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**4.4664**	**4.4664**	**4.2900e-003**	**0.0000**	**4.5738**

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	0.1042					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6484					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	0.0747	0.0285	2.4773	1.3000e-004		0.0137	0.0137		0.0137	0.0137		4.4664	4.4664	4.2900e-003		4.5738
Total	**0.8273**	**0.0285**	**2.4773**	**1.3000e-004**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**4.4664**	**4.4664**	**4.2900e-003**	**0.0000**	**4.5738**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

CNDDB Special-Status Species List

CNDDB 9-Quad Species List 314 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Batrachoseps diabolicus	Hell Hollow slender salamander	AAAAD02130	None	None	-	-	3812153	CARMICHAEL	Unprocessed	Animals - Amphibians - Plethodontidae - Batrachoseps diabolicus
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812143	ELK GROVE	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812153	CARMICHAEL	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812144	FLORIN	Mapped	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812145	CLARKSBURG	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812164	RIO LINDA	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius

Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812143	ELK GROVE	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812154	SACRAMENTO EAST	Mapped	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias

Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Birds - Ardeidae - Botaurus lentiginosus
Animals - Birds	Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-	-	3812144	FLORIN	Unprocessed	Animals - Birds - Ardeidae - Botaurus lentiginosus
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812144	FLORIN	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812164	RIO LINDA	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Ixobrychus exilis	least bittern	ABNGA02010	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Ardeidae - Ixobrychus exilis
Animals - Birds	Ixobrychus exilis	least bittern	ABNGA02010	None	None	SSC	-	3812144	FLORIN	Unprocessed	Animals - Birds - Ardeidae - Ixobrychus exilis
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812164	RIO LINDA	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Charadrius montanus	mountain plover	ABNNB03100	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Charadriidae - Charadrius montanus
Animals - Birds	Pica nuttalli	yellow-billed magpie	ABPAV09020	None	None	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Birds - Corvidae - Pica nuttalli
Animals - Birds	Pica nuttalli	yellow-billed magpie	ABPAV09020	None	None	-	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Corvidae - Pica nuttalli
Animals - Birds	Pica nuttalli	yellow-billed magpie	ABPAV09020	None	None	-	-	3812143	ELK GROVE	Unprocessed	Animals - Birds - Corvidae - Pica nuttalli
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812145	CLARKSBURG	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis

Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812154	SACRAMENTO EAST	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812155	SACRAMENTO WEST	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812164	RIO LINDA	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3812144	FLORIN	Mapped	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Antigone canadensis tabida	greater sandhill crane	ABNMK01014	None	Threatened	FP	-	3812144	FLORIN	Unprocessed	Animals - Birds - Gruidae - Antigone canadensis tabida
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812154	SACRAMENTO EAST	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812153	CARMICHAEL	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812145	CLARKSBURG	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812143	ELK GROVE	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812164	RIO LINDA	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Birds - Icteridae - Agelaius tricolor

Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812155	SACRAMENTO WEST	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	None	None	SSC	-	3812144	FLORIN	Mapped	Animals - Birds - Icteridae - Xanthocephalus xanthocephalus
Animals - Birds	Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	None	None	SSC	-	3812145	CLARKSBURG	Mapped	Animals - Birds - Icteridae - Xanthocephalus xanthocephalus
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Icteriidae - Icteria virens
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812144	FLORIN	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812164	RIO LINDA	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP	-	3812144	FLORIN	Unprocessed	Animals - Birds - Laridae - Sternula antillarum browni
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812153	CARMICHAEL	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3812144	FLORIN	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812144	FLORIN	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812154	SACRAMENTO EAST	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812155	SACRAMENTO WEST	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812164	RIO LINDA	Mapped	Animals - Birds - Passerellidae - Melospiza melodia

Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812145	CLARKSBURG	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812144	FLORIN	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Pooecetes gramineus affinis	Oregon vesper sparrow	ABPBX95011	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Passerellidae - Pooecetes gramineus affinis
Animals - Birds	Spizella breweri	Brewer's sparrow	ABPBX94040	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Passerellidae - Spizella breweri
Animals - Birds	Spizella breweri	Brewer's sparrow	ABPBX94040	None	None	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Birds - Passerellidae - Spizella breweri
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812155	SACRAMENTO WEST	Mapped	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Plegadis chihi	white-faced ibis	ABNGE02020	None	None	WL	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Birds - Threskiornithidae - Plegadis chihi
Animals - Birds	Plegadis chihi	white-faced ibis	ABNGE02020	None	None	WL	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Birds - Threskiornithidae - Plegadis chihi
Animals - Birds	Vireo bellii pusillus	least Bell's vireo	ABPBW01114	Endangered	Endangered	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Birds - Vireonidae - Vireo bellii pusillus
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi

Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812145	CLARKSBURG	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812144	FLORIN	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812144	FLORIN	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812145	CLARKSBURG	Mapped	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812163	CITRUS HEIGHTS	Mapped and Unprocessed	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis

Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Crustaceans - Chirocephalidae - Linderiella occidentalis
Animals - Crustaceans	Dumontia oregonensis	hairy water flea	ICBRA23010	None	None	-	-	3812153	CARMICHAEL	Mapped	Animals - Crustaceans - Dumontiidae - Dumontia oregonensis
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812154	SACRAMENTO EAST	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812145	CLARKSBURG	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812144	FLORIN	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812143	ELK GROVE	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3812155	SACRAMENTO WEST	Mapped	Animals - Fish - Centrarchidae - Archoplites interruptus
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus

Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812145	CLARKSBURG	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812144	FLORIN	Mapped	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812145	CLARKSBURG	Mapped and Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812145	CLARKSBURG	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812144	FLORIN	Mapped	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus

Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812164	RIO LINDA	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812153	CARMICHAEL	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812143	ELK GROVE	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812145	CLARKSBURG	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812144	FLORIN	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	-	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 11

Animals - Fish	Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 11
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812165	TAYLOR MONUMENT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Insects	Andrena subapasta	An andrenid bee	IIHYM35210	None	None	-	-	3812163	CITRUS HEIGHTS	Mapped	Animals - Insects - Andrenidae - Andrena subapasta
Animals - Insects	Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	IICOL02106	None	None	-	-	3812155	SACRAMENTO WEST	Mapped	Animals - Insects - Carabidae - Cicindela hirticollis abrupta
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812155	SACRAMENTO WEST	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812163	CITRUS HEIGHTS	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus

Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812143	ELK GROVE	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Hydrochara ricksecker	Ricksecker's water scavenger beetle	IICOL5V010	None	None	-	-	3812153	CARMICHAEL	Mapped	Animals - Insects - Hydrophilidae - Hydrochara ricksecker
Animals - Mammals	Vulpes vulpes patwin	Sacramento Valley red fox	AMAJA03015	None	None	-	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Mammals - Canidae - Vulpes vulpes patwin
Animals - Mammals	Vulpes vulpes patwin	Sacramento Valley red fox	AMAJA03015	None	None	-	-	3812164	RIO LINDA	Unprocessed	Animals - Mammals - Canidae - Vulpes vulpes patwin
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812154	SACRAMENTO EAST	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812145	CLARKSBURG	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812144	FLORIN	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812144	FLORIN	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812155	SACRAMENTO WEST	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis lucifugus	little brown bat	AMACC01010	None	None	-	-	3812144	FLORIN	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis lucifugus
Animals - Mammals	Myotis lucifugus	little brown bat	AMACC01010	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis lucifugus
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812145	CLARKSBURG	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis

Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812144	FLORIN	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812154	SACRAMENTO EAST	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812155	SACRAMENTO WEST	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812164	RIO LINDA	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812165	TAYLOR MONUMENT	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812155	SACRAMENTO WEST	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812153	CARMICHAEL	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812144	FLORIN	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812143	ELK GROVE	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812145	CLARKSBURG	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812145	CLARKSBURG	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812143	ELK GROVE	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812144	FLORIN	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812155	SACRAMENTO WEST	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812164	RIO LINDA	Mapped and Unprocessed	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant gartersnake	ARADB36150	Threatened	Threatened	-	-	3812165	TAYLOR MONUMENT	Mapped and Unprocessed	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3812163	CITRUS HEIGHTS	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii

Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3812154	SACRAMENTO EAST	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Community - Terrestrial	Elderberry Savanna	Elderberry Savanna	CTT63440CA	None	None	-	-	3812154	SACRAMENTO EAST	Mapped	Community - Terrestrial - Elderberry Savanna
Community - Terrestrial	Elderberry Savanna	Elderberry Savanna	CTT63440CA	None	None	-	-	3812155	SACRAMENTO WEST	Mapped	Community - Terrestrial - Elderberry Savanna
Community - Terrestrial	Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	-	-	3812155	SACRAMENTO WEST	Mapped	Community - Terrestrial - Great Valley Cottonwood Riparian Forest
Community - Terrestrial	Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	-	-	3812143	ELK GROVE	Mapped	Community - Terrestrial - Great Valley Valley Oak Riparian Forest
Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	None	None	-	-	3812164	RIO LINDA	Mapped	Community - Terrestrial - Northern Claypan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812164	RIO LINDA	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812144	FLORIN	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812143	ELK GROVE	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812153	CARMICHAEL	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	-	-	3812163	CITRUS HEIGHTS	Mapped	Community - Terrestrial - Northern Volcanic Mud Flow Vernal Pool
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812163	CITRUS HEIGHTS	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812164	RIO LINDA	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812154	SACRAMENTO EAST	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812153	CARMICHAEL	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812144	FLORIN	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812143	ELK GROVE	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812145	CLARKSBURG	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-	1B.2	3812145	CLARKSBURG	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. parryi
Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3812145	CLARKSBURG	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis

Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3812144	FLORIN	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis
Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3812165	TAYLOR MONUMENT	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis
Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3812155	SACRAMENTO WEST	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3812144	FLORIN	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	None	None	-	1B.1	3812144	FLORIN	Mapped	Plants - Vascular - Asteraceae - Lasthenia chrysantha
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812155	SACRAMENTO WEST	Mapped	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Lepidium latipes var. heckardii	Heckard's pepper-grass	PDBRA1M0K1	None	None	-	1B.2	3812144	FLORIN	Mapped	Plants - Vascular - Brassicaceae - Lepidium latipes var. heckardii
Plants - Vascular	Lepidium latipes var. heckardii	Heckard's pepper-grass	PDBRA1M0K1	None	None	-	1B.2	3812145	CLARKSBURG	Mapped	Plants - Vascular - Brassicaceae - Lepidium latipes var. heckardii
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812144	FLORIN	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812143	ELK GROVE	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812164	RIO LINDA	Mapped and Unprocessed	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812164	RIO LINDA	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812143	ELK GROVE	Mapped and Unprocessed	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812144	FLORIN	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812153	CARMICHAEL	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Cuscuta obtusiflora var. glandulosa	Peruvian dodder	PDCUS01111	None	None	-	2B.2	3812144	FLORIN	Mapped	Plants - Vascular - Convolvulaceae - Cuscuta obtusiflora var. glandulosa
Plants - Vascular	Carex comosa	bristly sedge	PMCYP032Y0	None	None	-	2B.1	3812145	CLARKSBURG	Mapped	Plants - Vascular - Cyperaceae - Carex comosa
Plants - Vascular	Astragalus tener var. ferrisiae	Ferris' milk-vetch	PDFAB0F8R3	None	None	-	1B.1	3812155	SACRAMENTO WEST	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. ferrisiae
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812145	CLARKSBURG	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812144	FLORIN	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum

Plants - Vascular	Juncus leiospermus var. ahartii	Ahart's dwarf rush	PMJUN011L1	None	None	-	1B.2	3812153	CARMICHAEL	Mapped	Plants - Vascular - Juncaceae - Juncus leiospermus var. ahartii
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812154	SACRAMENTO EAST	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812155	SACRAMENTO WEST	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812164	RIO LINDA	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812163	CITRUS HEIGHTS	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	PDMAL0H0R3	None	None	-	1B.2	3812155	SACRAMENTO WEST	Mapped	Plants - Vascular - Malvaceae - Hibiscus lasiocarpos var. occidentalis
Plants - Vascular	Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	PDMAL0H0R3	None	None	-	1B.2	3812144	FLORIN	Mapped	Plants - Vascular - Malvaceae - Hibiscus lasiocarpos var. occidentalis
Plants - Vascular	Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	PDMAL0H0R3	None	None	-	1B.2	3812145	CLARKSBURG	Mapped and Unprocessed	Plants - Vascular - Malvaceae - Hibiscus lasiocarpos var. occidentalis
Plants - Vascular	Gratiola heterosepala	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812153	CARMICHAEL	Mapped	Plants - Vascular - Plantaginaceae - Gratiola heterosepala
Plants - Vascular	Gratiola heterosepala	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812164	RIO LINDA	Mapped	Plants - Vascular - Plantaginaceae - Gratiola heterosepala
Plants - Vascular	Gratiola heterosepala	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812143	ELK GROVE	Mapped	Plants - Vascular - Plantaginaceae - Gratiola heterosepala
Plants - Vascular	Orcuttia tenuis	slender Orcutt grass	PMPOA4G050	Threatened	Endangered	-	1B.1	3812143	ELK GROVE	Mapped	Plants - Vascular - Poaceae - Orcuttia tenuis
Plants - Vascular	Orcuttia viscida	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812143	ELK GROVE	Mapped	Plants - Vascular - Poaceae - Orcuttia viscida
Plants - Vascular	Orcuttia viscida	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812153	CARMICHAEL	Mapped	Plants - Vascular - Poaceae - Orcuttia viscida
Plants - Vascular	Navarretia eriocephala	hoary navarretia	PDPLM0C060	None	None	-	4.3	3812143	ELK GROVE	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia eriocephala
Plants - Vascular	Brodiaea rosea ssp. vallicola	valley brodiaea	PMLIL0C0K2	None	None	-	4.2	3812153	CARMICHAEL	Unprocessed	Plants - Vascular - Themidaceae - Brodiaea rosea ssp. vallicola
Plants - Vascular	Brodiaea rosea ssp. vallicola	valley brodiaea	PMLIL0C0K2	None	None	-	4.2	3812154	SACRAMENTO EAST	Unprocessed	Plants - Vascular - Themidaceae - Brodiaea rosea ssp. vallicola
Plants - Vascular	Brodiaea rosea ssp. vallicola	valley brodiaea	PMLIL0C0K2	None	None	-	4.2	3812164	RIO LINDA	Unprocessed	Plants - Vascular - Themidaceae - Brodiaea rosea ssp. vallicola
Plants - Vascular	Brodiaea rosea ssp. vallicola	valley brodiaea	PMLIL0C0K2	None	None	-	4.2	3812163	CITRUS HEIGHTS	Unprocessed	Plants - Vascular - Themidaceae - Brodiaea rosea ssp. vallicola

CNPS Special-Status Species List

Inventory of Rare and Endangered Plants of California

California Native Plant Society

Search Results

22 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3812163:3812153:3812143:3812155:3812165:3812164:3812144:3812154:3812145**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	No Photo Available
Brodiaea rosea ssp. *vallicola*	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	No Photo Available
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1	 Dean Wm. Taylor 1997
Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	No Photo Available
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	No Photo Available
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2	No Photo Available
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	No Photo Available
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2	No Photo Available
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	No Photo Available
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	No Photo Available
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	None	None	G2T1	S1	1B.2	No Photo Available
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	No Photo Available

Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	No Photo Available
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	None	None	G4T1	S1	1B.2	No Photo Available
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1	No Photo Available
Navarretia eriocephala	hoary navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G4?	S4?	4.3	No Photo Available
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	FT	CE	G2	S2	1B.1	No Photo Available
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	FE	CE	G1	S1	1B.1	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	No Photo Available
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	No Photo Available

Showing 1 to 22 of 22 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website https://www.rareplants.cnps.org [accessed 3 November 2021].

USFWS Threatened or Endangered Species List

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

Sacramento County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

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

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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

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

Reptiles

NAME	STATUS

Giant Garter Snake Thamnophis gigas — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4482

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2891

California Tiger Salamander Ambystoma californiense — Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS

Delta Smelt Hypomesus transpacificus — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/7850

Crustaceans

NAME	STATUS

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2246

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on

this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

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

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

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

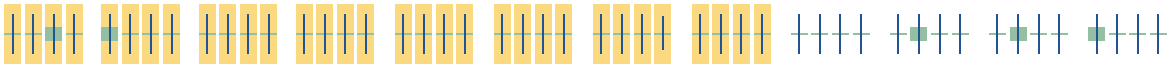
No Data (–)
A week is marked as having no data if there were no survey events for that week.

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

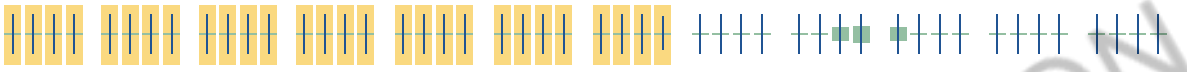
▪ probability of presence ▪ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

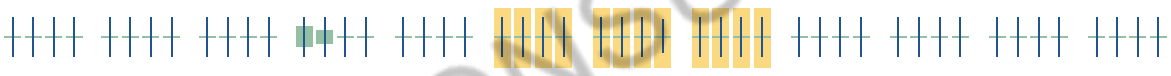
Bald Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



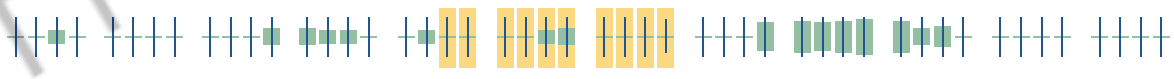
California Thrasher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



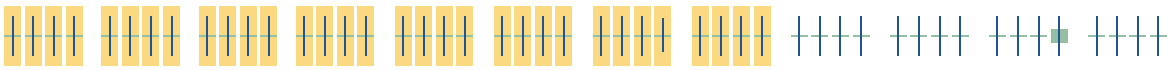
Clark's Grebe BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



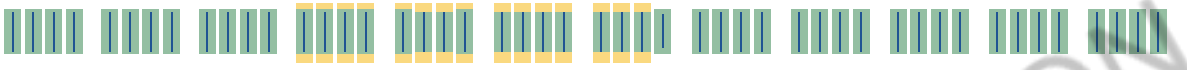
Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



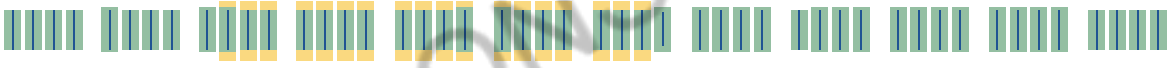
Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



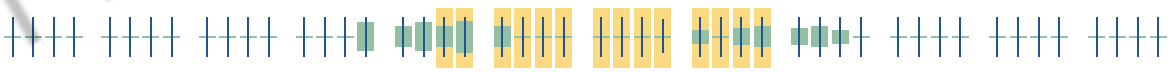
Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



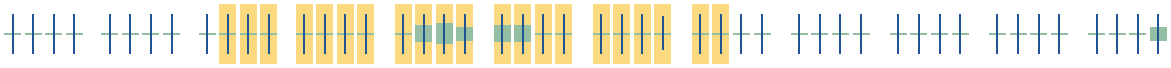
Oak Titmouse BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



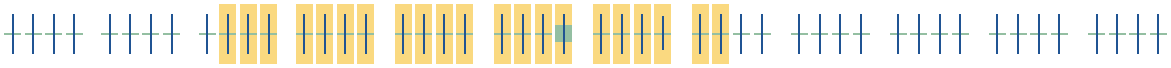
Olive-sided Flycatcher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



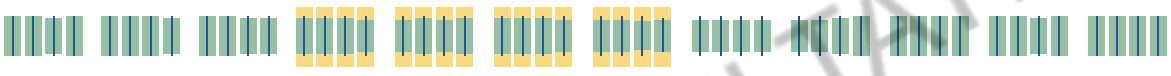
Tricolored Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wrentit BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Yellow-billed Magpie BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

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

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

ARBORIST REPORT
SACRAMENTO, CA

January 28, 2022

CSU Sacramento - UEI
ATTN: Brigett Reilly
6000 J St.
Sacramento, Ca 95819
Phone: (916) 278-6313
Email: brigettr@csus.edu

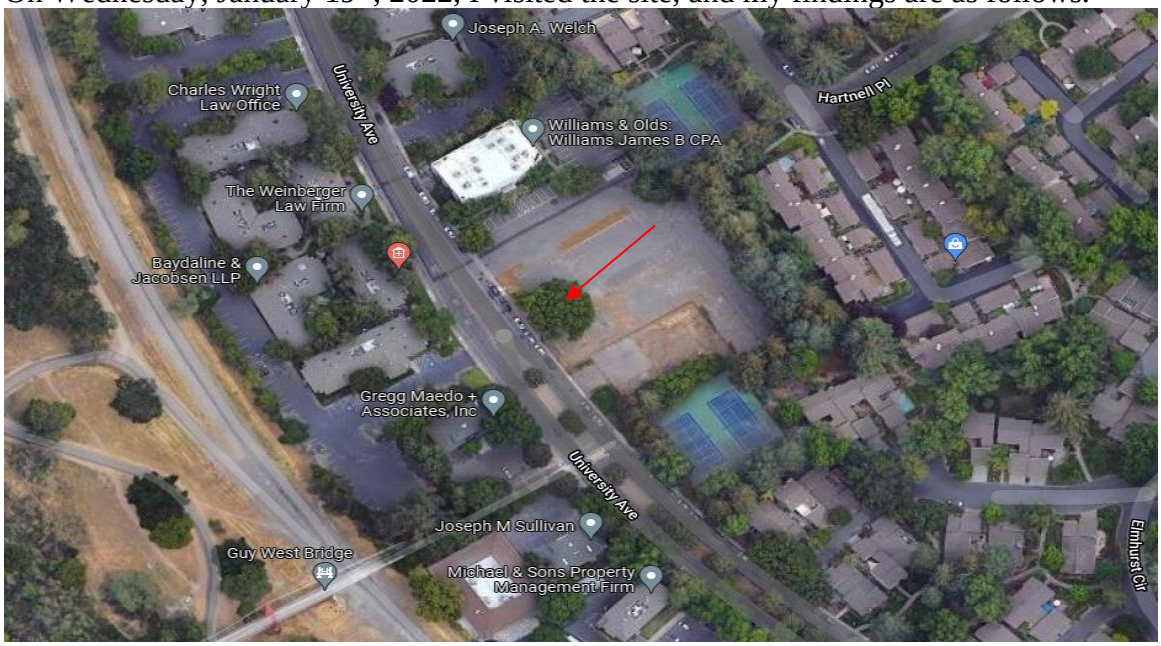
Re: 910 University Ave. Pre-Construction Tree Inspections

SCOPE OF WORK

The purpose of this report is to evaluate the current condition of two trees located on the west side of the property at 910 University Ave. There is a proposed housing project development, and I was requested to determine if the subject trees were worthy of preservation and capable of withstanding the proposed construction. I performed a visual inspection of the trees from ground level. I did not ascend into the canopies of the subject trees. This report should not be considered a formal tree risk assessment.

OBSERVATIONS

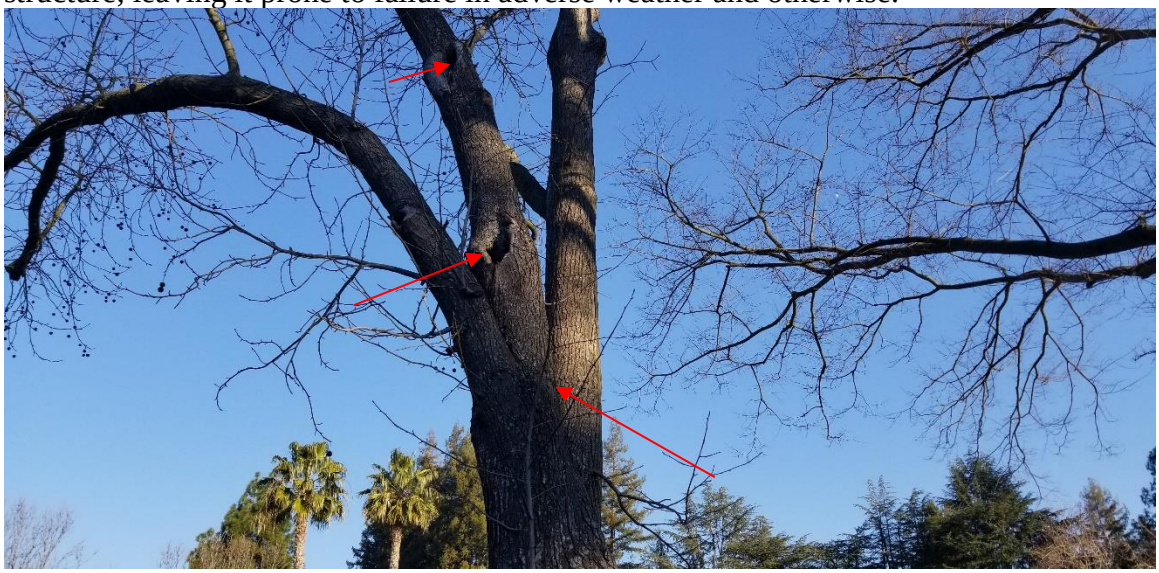
On Wednesday, January 19th, 2022, I visited the site, and my findings are as follows:

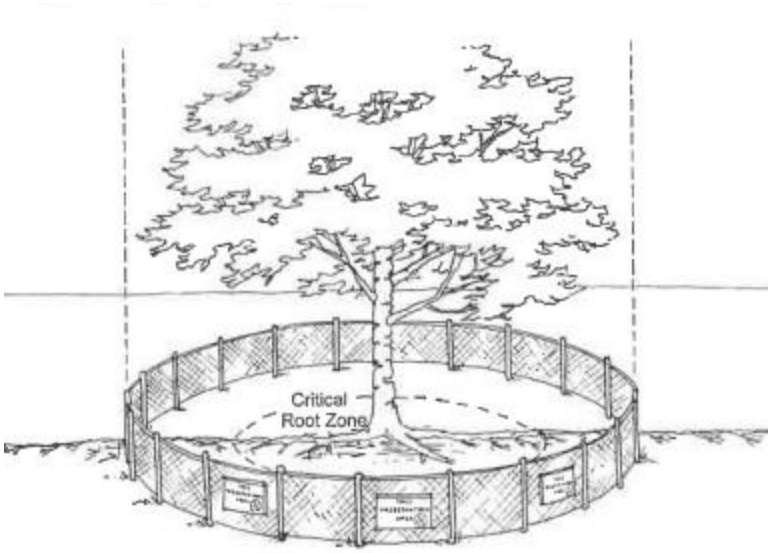


The red arrow in the above image depicts the location of the subject trees.

Tree #1- Sawtooth Zelkova (*Zelkova serrata*)
Diameter at Standard Height: 32 inches
Dripline Radius: 30 feet
Structural Condition: Fair. The subject tree has an open canopy with adequate branch spacing and taper. There are overextended branches on the south and west sides due to phototropism (growing toward the sun).
Vigor Condition: Fair. Dead branches up to 3 inches in diameter are scattered throughout the canopy.
Dripline Environment: Irrigated, compacted, silty-clay soil. The tree resided in a raised planter bed that has been removed (depicted by the yellow arrow below).
Recommendation: Prune to reduce branch end weight on overextended branches. Prune to crown clean dead branches 2 inches and larger. I recommend preserving the subject tree during the proposed development. I have included some recommendations for establishing a Tree Protection Zone during development on page 4.

Tree #2- Sweet Gum (*Liquidambar styciflua*)
Diameter at Standard Height: 22 inches
Dripline Radius: 20 feet
Structural Condition: Poor. The central lower branch union has included bark from a co-dominant attachment. There are several cavities from old pruning wounds on the main stem. (Seen below and depicted by the red arrows)
Vigor Condition: Fair. Dead branches up to 3 inches in diameter are scattered throughout the canopy.
Dripline Environment: Irrigated, compacted, silty-clay soil.
Recommendation: Remove to grade level due to defects compromising the subject tree's structure, leaving it prone to failure in adverse weather and otherwise.





Depicted above is the dripline method for establishing a TPZ (Tree Protection Zone), which should be established before the start of any grading, excavation, or construction. Fencing should be sturdy and highly visible to discourage entrance into or disturb the area. 4-foot-tall orange high-viz plastic net-type fencing is acceptable but not recommended. 6-foot-tall cyclone chain-link fencing is recommended. TPZ barriers should be clearly marked with signs stating the area is protected, and no one can enter or disturb soil without authorization from the project arborist. **No construction equipment or materials should be stored inside the TPZ.**

RECOMMENDATIONS AND DISCUSSION

In my professional opinion, an ISA Certified Arborist is recommended to supervise any excavation, grade changes, trenching performed beneath the canopies of the subject trees. An ISA Certified Arborist should direct all pruning.

Thank you for the opportunity to assist you in your tree assessment needs. If you have any questions or concerns, please contact me directly at (916) 417-1979.

Respectfully,

Kelley Gilleran
ASCA Registered Consulting Arborist #688
ISA Board Certified Master Arborist #7061-B

ASSUMPTIONS AND LIMITING CONDITIONS

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the Consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

2. The Consultant will not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

3. Loss or alteration of any part of this report invalidates the entire report.

4. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written consent of the Consultant.

5. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a stipulated result, a specified value, the occurrence of a subsequent event, nor upon any finding to be reported.

6. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree(s) or property in question may not arise in the future.

7. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. It is highly recommended that you follow the arborist recommendations; however, you may choose to accept or disregard the recommendations and/or seek additional advice.

8. 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 specific period of time. Likewise, remedial treatments performed cannot be guaranteed.

9. Any recommendations and/or performed treatments (including, but not limited to, pruning or removal) of trees may involve considerations beyond the scope of the arborist's services, such as property boundaries, property ownership, site lines, disputes between neighbors, and any other related issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist can then be expected to consider and reasonably rely on the completeness and accuracy of the information provided.

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

Appendix C

Noise Modeling Calculations

Site Preparation

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,218	50.0
Residence 1	1550	45.4
Residence 2	1890	43.1

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Dozer	85	0.4
Front End Loader	80	0.4
Excavator	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

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

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

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Site Preparation

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,725	50.0
Residence 1	25	96.4
Residence 2	50	88.4

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Dump Truck	84	1
Chain Saw	85	1
Front End Loader	80	1
chipper	75	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Dump Truck	84.0
Chain Saw	85.0
Front End Loader	80.0
chipper	75.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.4

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Night Cable Crossing Equipment

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	851,781	
SF Base Term. Res.	50	84.6
Residence 2	75	81.1

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Dozer	85	0.2
Dump Truck	84	0.4
Excavator	85	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Dozer	78.0
Dump Truck	80.0
Excavator	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Night Cable Crossing Equipment

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	301	70.0
SF Term. Residence.	175	75.2
Residence 2	1500	50.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Grader	85	1
Pickup Truck	55	1
Front End Loader	80	1
Generator	82	1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Grader	85.0
Pickup Truck	55.0
Front End Loader	80.0
Generator	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
90

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Day Cable Crossing Equipment (no helicopter)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	#VALUE!	50.0
Residence 1	600	#VALUE!
Residence 2	100	#VALUE!

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16
Blasting	94	#VALUE!
Pickup Truck	55	0.4
Rock Drill	85	0.2
Concrete Pump Truck	82	0.2
Generator	82	0.5

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	77.0
Blasting	#VALUE!
Pickup Truck	51.0
Rock Drill	78.0
Concrete Pump Truck	75.0
Generator	79.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
#VALUE!

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Day Cable Crossing Equipment (no helicopter)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	1,901	50.0
Residence 1	100	81.6
Residence 2	100	81.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1
Backhoe	80	1
Pickup Truck	55	1
Rock Drill	85	1
Concrete Pump Truck	82	1
Generator	82	1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0
Backhoe	80.0
Pickup Truck	55.0
Rock Drill	85.0
Concrete Pump Truck	82.0
Generator	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.5

Sources:

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

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

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

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

Where: E.L. = Emission Level;

U.F.= Usage Factor;

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

D = Distance from source to receiver.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Helicopter	68.0	@	492	soft	6	5	0.65	94.3	@	50
chipper	99.0	@	3	soft	6	5	0.65	67.7	@	50
blasting (night lmax)	94.0	@	50	soft	6	5	0.65	65.0	@	620
helicopter (night leq)	68.0	@	492.00	soft	6	5	0.65	45.1	@	3600
blasting (day lmax)	94.0	@	50	soft	6	5	0.65	70.1	@	400
helicopter (day leq)	68.0	@	492	soft	6	5	0.65	55.0	@	1520
Blasting (SF Res)	94.0	@	50	soft	6	5	0.65	79.6	@	175
blasting	94.0	@	50	soft	6	5	0.65	86.0	@	100
construction	85.0	@	50	soft	6	5	0.65	93.0	@	25
construction	95.0	@	50	soft	6	5	0.65	103.0	@	25
							0.66			
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

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

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

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
		Segment Description and Location				Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, $(dBA)_{5,6,7}$	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	University Avenue	(northbound)		3,650	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.6	1	4	11	36
2	University Avenue	(southbound)		3,380	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.3	1	3	11	34
3	Howe Avenue	US 50	Fair Oaks Boulevard	55,633	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.5	70	223	704	2225
4	Fair Oaks Boulevard	Howe Avenue	Munroe Street	29,904	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.0	20	63	198	627
5	J Street/Fair Oaks Boulevard	H Street	Howe Avenue	41,226	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.4	27	86	274	865

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

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

References

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

Pg 4-17.
-5), Pg 4-17

-23), Pg 2-5
-24), Pg 2-5

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Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

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

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.

— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

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

STEP 3A: Select the distance to the receiver.

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

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
large bull dozer	87.0	@	25	79.9	@	43
large bull dozer	87.0	@	25	77.2	@	53

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

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

STEP 3B: Select the distance to the receiver.

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

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
large bull dozer	0.089	@	25	0.049	@	37
large bull dozer	0.089	@	25	0.029	@	53

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Washington, D.C. Accessed: December 20, 2020. Page Available:

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
HVAC units	70.0	@	50	hard	10	5	0.00	64.0	@	100

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-