Russell Ranch Project

Draft
Environmental Impact Report

Volume II of III
Appendices D - H

SCH # 2014062018

Prepared for
the City of Folsom

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APPENDIX D

Russell Ranch AQ & GHG CalEEMod Modeling Assumptions

Construction Phases and Timing:

Phase 1

- Phase 1 construction would commence April 2015
- Phase 1 would include construction of
    - 364 single-family residential units
        - 114 units on 11.3 acres
        - 250 units on 60.53 acres
    - 3.2-acre park
    - 9.7 acres for Elementary School
        - Assume 600 students, based on FPASP EIR assumptions[1]
- Demolition not required
- Construction phases and timing based on information provided by applicant
    - Site Prep 4/6/15 – 5/6/15 (23 days)
    - Grading 5/7/15 – 5/6/16 (262 days)
    - Paving 5/9/16 – 6/3/16 (20 days)
    - Building Construction 6/6/16 – 6/6/18 (523 days)
    - Architectural Coating 6/20/16 – 6/20/18 (523 days)
- Approximately 135 total acres disturbed during grading

Phase 2

- Phase 2 construction would commence April 2017
- Phase 2 would include construction of
    - 246 single-family residential units on 59.56 acres
    - 0.3-acre park
- Demolition not required
- Construction phases and timing based on information provided by applicant
    - Site Prep 4/3/2017– 5/3/17 (23 days)
    - Grading 5/4/17 – 1/4/18 (176 days)
    - Paving 1/5/18 – 1/25/18 (15 days)
    - Building Construction 1/26/18 – 1/24/20 (521 days)
    - Architectural Coating 2/5/18 – 2/3/20 (521 days)
- Approximately 95 total acres disturbed during grading

Phase 3

- Phase 3 construction would commence April 2019
- Phase 3 would include construction of
    - 265 single-family residential units on 64.16 acres
    - 5.3-acre park
- Demolition not required
- Construction phases and timing based on information provided by applicant
    - Site Prep 4/1/19 – 5/1/19 (23 days)
    - Grading 8/1/16 – 1/20/20 (176 days)
    - Paving 1/3/20– 1/23/20 (15 days)

[1] FPASP EIR assumes each elementary school in plan area to have an average capacity of 600 students (see page 3A.14-24 of FPASP EIR).

    - Building Construction 1/24/20 – 1/21/22 (521 days)
    - Architectural Coating 2/7/20 – 2/4/22 (521 days)
- Approximately 105 total acres disturbed during grading

Based on the anticipated construction phases and timing, the year the project was assumed to be fully operational by **2022**

VMT Calculation Assumptions:

As Approved:

- Default Annual Unmitigated VMT (CalEEMod) = **47,482,904**
- Actual Estimated Annual VMT (Fehr & Peers) = **17,414,150**
- Adjustment ratio to apply in CalEEMod = 47,482,904 / 17,414,150 = **2.73**

Land Use	Default CalEEMod VMT		
	H-W or C-C	H-S or C-W	H-O or C-NW
Apartments Low Rise	10	5	6.5
City Park	5	10	6.5
Elementary School	5	10	6.5
Regional Shopping Center	5	10	6.5
Single Family Housing	10	5	6.5

Land Use	Adjusted CalEEMod VMT for As Approved		
	H-W or C-C	H-S or C-W	H-O or C-NW
Apartments Low Rise	27.3	13.65	17.75
City Park	13.65	27.3	17.75
Elementary School	13.65	27.3	17.75
Regional Shopping Center	13.65	27.3	17.75
Single Family Housing	27.3	13.65	17.75

Proposed Project:

- Default Annual Unmitigated VMT (CalEEMod) = **22,583,618**
- Actual Estimated Annual VMT (Fehr & Peers) = **8,482,965**
- Adjustment ratio to apply in CalEEMod = 22,583,618 / 8,482,965 = **2.66**

Land Use	Default CalEEMod VMT		
	H-W or C-C	H-S or C-W	H-O or C-NW
City Park	5	10	6.5
Elementary School	5	10	6.5
Single Family Housing	10	5	6.5

Land Use	Adjusted CalEEMod VMT for As Proposed		
	H-W or C-C	H-S or C-W	H-O or C-NW
City Park	13.3	26.6	17.29
Elementary School	13.3	26.6	17.29
Single Family Housing	26.6	13.3	17.29

Project's Inherent Measures Applied to CalEEMod:

The following measures were applied to both the As Approved and the As Proposed scenarios unless otherwise noted.

Project Characteristics

- Intensity Factors for CO_2, CH_4, and N_2O adjusted based on SMUD RPS reductions[2] *(APPLIED TO GHG MODELING RUNS ONLY – DOES NOT AFFECT AQ MODELING)*
    - DEFAULT VALUES:
        - CO_2 = 590.31
        - CH_4 = 0.029
        - N_2O = 0.00617
    - **BAU**: In 2010 SMUD RPS reached 24.0%
        - CO_2 = 448.64
        - CH_4 = 0.022
        - N_2O = 0.00469
    - **2020**: By 2020 SMUD anticipates RPS to reach 33.0%
        - CO_2 = 395.51
        - CH_4 = 0.019
        - N_2O = 0.00413

Area

- Use low VOC cleaning supplies (required/regulated by the SMAQMD per rules and regulations)
- Only natural gas hearth (per FPASP OAQMP and SMAQMD rules and regulations)
- 100% Electric Lawnmower (per FPASP OAQMP and FPASP objectives and policies)

Energy

- Exceed Title 24 - % Improvement = 25
    - CalEEMod inherently includes compliance with 2008 Title 24 standards
    - FPASP objectives and policies require compliance with latest CALGreen Code
    - 2013 Title 24 standards (latest CALGreen Code) is anticipated to result in 25% improvement from 2008 Title 24 standards[3]
- Energy Efficient Appliances
    - Clothwasher, dishwasher, fan, refrigerator for single family housing

Water

- Install low-flow fixtures
    - Bathroom faucet, kitchen faucet, toilet, shower

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[2] SMUD exceeded the statewide RPS goal of 20% by 2010 by supplying more than 24% of its retail sales with renewable energy. SMUD has a goal of 37% by 2020, which would exceed the 2020 requirement of 33%. However, for analysis purposes, compliance with the 33% requirement by 2020 was assumed. *Source: SMUD. Renewal Energy Portfolio. Available at: https://www.smud.org/en/about-smud/environment/renewable-energy/renewable-energy-portfolio.htm. Accessed October 14, 2014.*

[3] California Energy Commission. *Building Energy Efficiency Standards Frequently Asked Questions*. Available at: http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2013_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed October 15, 2014.

Russell Ranch BREEZE AERMOD Modeling Assumptions

All modeling performed in accordance with SMAQMD's *Dispersion Modeling of Construction-Generated PM_{10} Emissions*

- Utilized Phase 3 of construction for modeling due to intensity and proximity to sensitive receptors in comparison to other phases
- Maximum 24-hour concentration of PM_{10}

Source Data:

- Volume sources – 4 sources per acre = 362 total sources
- Half represent fugitive PM_{10} dust emissions and half represent PM_{10} exhaust emissions (181 sources each)
- Each source location (X- and Y-coordinates) would have one fugitive dust source and one exhaust source

Fugitive PM_{10} dust sources

- Release height = 0 meters
- Base elevation = 0 meters
- Initial lateral dimension (X or Y length divided by 2.15) = 97.21 meters
- Initial vertical dimension = 1.0 meter

Exhaust PM_{10} sources

- Release height = 5.0 meters
- Base elevation = 0 meters
- Initial lateral dimension (X or Y length divided by 2.15) = 97.21 meters
- Initial vertical dimension = 1.0 meter

Emission rates:

Fugitive PM_{10} dust sources

Utilizing the CalEEMod fugitive PM_{10} emissions for Phase 3 of construction of 29.29 lbs/day:

$$\frac{29.29 \text{ lbs}}{\text{day}} \left| \frac{453.592 \text{ g}}{\text{lb}} \right| \frac{1 \text{ day}}{8 \text{ hrs}} \left| \frac{1 \text{ hr}}{3{,}600 \text{ s}} \right. = 0.46131 \text{ g/s}$$

0.46131 g/s / 181 sources = **0.0025 g/s per source**

Exhaust PM_{10} sources

Utilizing the CalEEMod fugitive PM_{10} emissions for Phase 3 of construction of 29.29 lbs/day:

$$\frac{6.83 \text{ lbs}}{\text{day}} \left| \frac{453.592 \text{ g}}{\text{lb}} \right| \frac{1 \text{ day}}{8 \text{ hrs}} \left| \frac{1 \text{ hr}}{3{,}600 \text{ s}} \right. = 0.10757 \text{ g/s}$$

0.10757 g/s / 181 sources = **0.0006 g/s per source**

Receptor Data:

- Discrete receptors = specific nearby sensitive receptor (i.e., the closest residence)
- Uniform grid of receptors to represent residential neighborhood
    - Spaced 10 meters apart at 10 meter intervals
- Used flagpole receptor height of 1.8 meters

Russel Ranch - Construction AQ - Phase 1

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	3.20	Acre	3.20	139,392.00	0
Single Family Housing	250.00	Dwelling Unit	60.53	450,000.00	668
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	110.00	523.00
tblConstructionPhase	NumDays	1,550.00	523.00
tblConstructionPhase	NumDays	155.00	262.00
tblConstructionPhase	NumDays	110.00	20.00
tblConstructionPhase	NumDays	60.00	23.00
tblConstructionPhase	PhaseEndDate	6/8/2020	6/20/2018
tblConstructionPhase	PhaseStartDate	6/7/2018	6/20/2016
tblConstructionPhase	PhaseStartDate	6/4/2016	6/6/2016
tblConstructionPhase	PhaseStartDate	5/7/2016	5/9/2016
tblEnergyUse	LightingElect	3.55	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	2.17	0.00

tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	0.66	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	2.51	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	15.37	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	655.00	135.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	81.17	60.53
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	109.50	0.00
tblSolidWaste	SolidWasteGenerationRate	349.92	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00

tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.29	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	1,454,544.00	0.00
tblWater	IndoorWaterUseRate	23,716,065.33	0.00
tblWater	OutdoorWaterUseRate	3,812,740.32	0.00
tblWater	OutdoorWaterUseRate	3,740,256.00	0.00
tblWater	OutdoorWaterUseRate	14,951,432.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.8646	79.1275	51.9181	0.0637	18.2032	3.8034	21.2925	9.9670	3.4991	12.8092						
2016	26.3519	74.8858	50.1026	0.0691	6.7207	3.5854	10.3060	3.4096	3.2985	6.7081						
2017	25.7855	34.3852	39.7605	0.0690	2.3359	2.0459	4.3817	0.6276	1.9303	2.5579						
2018	25.1020	30.4894	36.9536	0.0689	2.3358	1.7296	4.0654	0.6276	1.6333	2.2609						
Total	**84.1039**	**218.8879**	**178.7348**	**0.2707**	**29.5955**	**11.1642**	**40.0456**	**14.6318**	**10.3612**	**24.3361**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2015	6.8646	79.1275	51.9181	0.0637	18.2032	3.8034	21.2925	9.9670	3.4991	12.8092						
2016	26.3519	74.8858	50.1026	0.0691	6.7207	3.5854	10.3060	3.4096	3.2985	6.7081						
2017	25.7855	34.3852	39.7605	0.0690	2.3359	2.0459	4.3817	0.6276	1.9303	2.5579						
2018	25.1020	30.4894	36.9536	0.0689	2.3358	1.7296	4.0654	0.6276	1.6333	2.2609						
Total	**84.1039**	**218.8879**	**178.7348**	**0.2707**	**29.5955**	**11.1642**	**40.0456**	**14.6318**	**10.3612**	**24.3361**						

	ROG	NOx	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**

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	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**	**0.0000**	**0.1661**	**0.1661**	**0.0000**	**0.1661**	**0.1661**						

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	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**	**0.0000**	**0.1661**	**0.1661**	**0.0000**	**0.1661**	**0.1661**						

	ROG	NOx	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	4/6/2015	5/6/2015	5	23	
2	Grading	Grading	5/7/2015	5/6/2016	5	262	
3	Paving	Paving	5/9/2016	6/3/2016	5	20	
4	Building Construction	Building Construction	6/6/2016	6/6/2018	5	523	
5	Architectural Coating	Architectural Coating	6/20/2016	6/20/2018	5	523	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 135

Acres of Paving: 0

Residential Indoor: 1,326,780; Residential Outdoor: 442,260; Non-Residential Indoor: 284,331; Non-Residential Outdoor: 94,777 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412						
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0805	0.0727	0.9703	1.7500e-003	0.1369	1.0600e-003	0.1380	0.0363	9.7000e-004	0.0373						
Total	**0.0805**	**0.0727**	**0.9703**	**1.7500e-003**	**0.1369**	**1.0600e-003**	**0.1380**	**0.0363**	**9.7000e-004**	**0.0373**						

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412						
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0805	0.0727	0.9703	1.7500e-003	0.1369	1.0600e-003	0.1380	0.0363	9.7000e-004	0.0373						
Total	**0.0805**	**0.0727**	**0.9703**	**1.7500e-003**	**0.1369**	**1.0600e-003**	**0.1380**	**0.0363**	**9.7000e-004**	**0.0373**						

3.3 Grading - 2015

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980						
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**6.5685**	**3.8022**	**10.3707**	**3.3692**	**3.4980**	**6.8672**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0895	0.0808	1.0781	1.9500e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0700e-003	0.0414						
Total	**0.0895**	**0.0808**	**1.0781**	**1.9500e-003**	**0.1521**	**1.1700e-003**	**0.1533**	**0.0404**	**1.0700e-003**	**0.0414**						

3.3 Grading - 2015

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980						
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**6.5685**	**3.8022**	**10.3707**	**3.3692**	**3.4980**	**6.8672**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0895	0.0808	1.0781	1.9500e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0700e-003	0.0414						
Total	**0.0895**	**0.0808**	**1.0781**	**1.9500e-003**	**0.1521**	**1.1700e-003**	**0.1533**	**0.0404**	**1.0700e-003**	**0.0414**						

3.3 Grading - 2016

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975						
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.5685**	**3.5842**	**10.1528**	**3.3692**	**3.2975**	**6.6667**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0802	0.0721	0.9651	1.9500e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414						
Total	**0.0802**	**0.0721**	**0.9651**	**1.9500e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**						

3.3 Grading - 2016

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975						
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.5685**	**3.5842**	**10.1528**	**3.3692**	**3.2975**	**6.6667**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0802	0.0721	0.9651	1.9500e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414						
Total	**0.0802**	**0.0721**	**0.9651**	**1.9500e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**						

3.4 Paving - 2016

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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310						
Total	**0.0601**	**0.0541**	**0.7239**	**1.4600e-003**	**0.1141**	**8.4000e-004**	**0.1149**	**0.0303**	**7.7000e-004**	**0.0310**						

3.4 Paving - 2016

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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310						
Total	**0.0601**	**0.0541**	**0.7239**	**1.4600e-003**	**0.1141**	**8.4000e-004**	**0.1149**	**0.0303**	**7.7000e-004**	**0.0310**						

3.5 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**						

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						
Vendor	0.8458	5.6222	9.8644	0.0146	0.4112	0.0922	0.5033	0.1171	0.0846	0.2017						
Worker	0.8456	0.7606	10.1823	0.0205	1.6051	0.0118	1.6169	0.4258	0.0108	0.4366						
Total	**1.6914**	**6.3828**	**20.0466**	**0.0352**	**2.0163**	**0.1039**	**2.1202**	**0.5428**	**0.0955**	**0.6383**						

3.5 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**						

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						
Vendor	0.8458	5.6222	9.8644	0.0146	0.4112	0.0922	0.5033	0.1171	0.0846	0.2017						
Worker	0.8456	0.7606	10.1823	0.0205	1.6051	0.0118	1.6169	0.4258	0.0108	0.4366						
Total	**1.6914**	**6.3828**	**20.0466**	**0.0352**	**2.0163**	**0.1039**	**2.1202**	**0.5428**	**0.0955**	**0.6383**						

3.5 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

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						
Vendor	0.7293	4.9792	8.8335	0.0146	0.4113	0.0777	0.4890	0.1171	0.0713	0.1884						
Worker	0.7540	0.6800	9.1154	0.0205	1.6051	0.0114	1.6165	0.4258	0.0105	0.4363						
Total	**1.4833**	**5.6592**	**17.9489**	**0.0351**	**2.0164**	**0.0891**	**2.1054**	**0.5429**	**0.0819**	**0.6247**						

3.5 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

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						
Vendor	0.7293	4.9792	8.8335	0.0146	0.4113	0.0777	0.4890	0.1171	0.0713	0.1884						
Worker	0.7540	0.6800	9.1154	0.0205	1.6051	0.0114	1.6165	0.4258	0.0105	0.4363						
Total	**1.4833**	**5.6592**	**17.9489**	**0.0351**	**2.0164**	**0.0891**	**2.1054**	**0.5429**	**0.0819**	**0.6247**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.6062	4.4883	7.7084	0.0146	0.4112	0.0714	0.4826	0.1171	0.0656	0.1827						
Worker	0.6764	0.6126	8.2218	0.0205	1.6051	0.0112	1.6162	0.4258	0.0103	0.4361						
Total	**1.2825**	**5.1009**	**15.9302**	**0.0351**	**2.0163**	**0.0825**	**2.0988**	**0.5428**	**0.0759**	**0.6188**						

3.5 Building Construction - 2018

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	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.6062	4.4883	7.7084	0.0146	0.4112	0.0714	0.4826	0.1171	0.0656	0.1827						
Worker	0.6764	0.6126	8.2218	0.0205	1.6051	0.0112	1.6162	0.4258	0.0103	0.4361						
Total	**1.2825**	**5.1009**	**15.9302**	**0.0351**	**2.0163**	**0.0825**	**2.0988**	**0.5428**	**0.0759**	**0.6188**						

3.6 Architectural Coating - 2016

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966						
Total	**21.0860**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1683	0.1514	2.0268	4.0900e-003	0.3195	2.3500e-003	0.3218	0.0848	2.1600e-003	0.0869						
Total	**0.1683**	**0.1514**	**2.0268**	**4.0900e-003**	**0.3195**	**2.3500e-003**	**0.3218**	**0.0848**	**2.1600e-003**	**0.0869**						

3.6 Architectural Coating - 2016

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966						
Total	**21.0860**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1683	0.1514	2.0268	4.0900e-003	0.3195	2.3500e-003	0.3218	0.0848	2.1600e-003	0.0869						
Total	**0.1683**	**0.1514**	**2.0268**	**4.0900e-003**	**0.3195**	**2.3500e-003**	**0.3218**	**0.0848**	**2.1600e-003**	**0.0869**						

3.6 Architectural Coating - 2017

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**21.0498**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1501	0.1354	1.8144	4.0900e-003	0.3195	2.2700e-003	0.3218	0.0848	2.0900e-003	0.0868						
Total	**0.1501**	**0.1354**	**1.8144**	**4.0900e-003**	**0.3195**	**2.2700e-003**	**0.3218**	**0.0848**	**2.0900e-003**	**0.0868**						

3.6 Architectural Coating - 2017

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**21.0498**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1501	0.1354	1.8144	4.0900e-003	0.3195	2.2700e-003	0.3218	0.0848	2.0900e-003	0.0868						
Total	**0.1501**	**0.1354**	**1.8144**	**4.0900e-003**	**0.3195**	**2.2700e-003**	**0.3218**	**0.0848**	**2.0900e-003**	**0.0868**						

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**21.0161**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1346	0.1219	1.6366	4.0800e-003	0.3195	2.2200e-003	0.3217	0.0848	2.0600e-003	0.0868						
Total	**0.1346**	**0.1219**	**1.6366**	**4.0800e-003**	**0.3195**	**2.2200e-003**	**0.3217**	**0.0848**	**2.0600e-003**	**0.0868**						

3.6 Architectural Coating - 2018

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**21.0161**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1346	0.1219	1.6366	4.0800e-003	0.3195	2.2200e-003	0.3217	0.0848	2.0600e-003	0.0868						
Total	**0.1346**	**0.1219**	**1.6366**	**4.0800e-003**	**0.3195**	**2.2200e-003**	**0.3217**	**0.0848**	**2.0600e-003**	**0.0868**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Elementary School	0.00	0.00	0.00	65.00	30.00	5.00	63	25	12
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

5.0 Energy Detail

4.4 Fleet Mix

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Unmitigated	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	18.0777					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						
Landscaping	0.9176	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**		**0.1661**	**0.1661**		**0.1661**	**0.1661**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	18.0777					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						
Landscaping	0.9176	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**		**0.1661**	**0.1661**		**0.1661**	**0.1661**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction AQ - Phase 1

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	3.20	Acre	3.20	139,392.00	0
Single Family Housing	250.00	Dwelling Unit	60.53	450,000.00	668
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	110.00	523.00
tblConstructionPhase	NumDays	1,550.00	523.00
tblConstructionPhase	NumDays	155.00	262.00
tblConstructionPhase	NumDays	110.00	20.00
tblConstructionPhase	NumDays	60.00	23.00
tblConstructionPhase	PhaseEndDate	6/8/2020	6/20/2018
tblConstructionPhase	PhaseStartDate	6/7/2018	6/20/2016
tblConstructionPhase	PhaseStartDate	6/4/2016	6/6/2016
tblConstructionPhase	PhaseStartDate	5/7/2016	5/9/2016
tblEnergyUse	LightingElect	3.55	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	2.17	0.00

tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	0.66	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	2.51	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	15.37	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	655.00	135.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	81.17	60.53
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	109.50	0.00
tblSolidWaste	SolidWasteGenerationRate	349.92	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00

tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.29	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	1,454,544.00	0.00
tblWater	IndoorWaterUseRate	23,716,065.33	0.00
tblWater	OutdoorWaterUseRate	3,812,740.32	0.00
tblWater	OutdoorWaterUseRate	3,740,256.00	0.00
tblWater	OutdoorWaterUseRate	14,951,432.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.8538	79.1470	51.8196	0.0635	18.2032	3.8034	21.2925	9.9670	3.4991	12.8092						
2016	26.4900	74.9032	50.0086	0.0660	6.7207	3.5854	10.3060	3.4096	3.2985	6.7081						
2017	25.8842	34.9356	43.1380	0.0659	2.3359	2.0470	4.3829	0.6276	1.9313	2.5589						
2018	25.1535	30.9815	40.4425	0.0658	2.3358	1.7306	4.0664	0.6276	1.6343	2.2619						
Total	**84.3815**	**219.9674**	**185.4087**	**0.2612**	**29.5955**	**11.1664**	**40.0478**	**14.6318**	**10.3632**	**24.3381**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2015	6.8538	79.1470	51.8196	0.0635	18.2032	3.8034	21.2925	9.9670	3.4991	12.8092						
2016	26.4900	74.9032	50.0086	0.0660	6.7207	3.5854	10.3060	3.4096	3.2985	6.7081						
2017	25.8842	34.9356	43.1380	0.0659	2.3359	2.0470	4.3829	0.6276	1.9313	2.5589						
2018	25.1535	30.9815	40.4425	0.0658	2.3358	1.7306	4.0664	0.6276	1.6343	2.2619						
Total	**84.3815**	**219.9674**	**185.4087**	**0.2612**	**29.5955**	**11.1664**	**40.0478**	**14.6318**	**10.3632**	**24.3381**						

	ROG	NOx	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**

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	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**	**0.0000**	**0.1661**	**0.1661**	**0.0000**	**0.1661**	**0.1661**						

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	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**	**0.0000**	**0.1661**	**0.1661**	**0.0000**	**0.1661**	**0.1661**						

	ROG	NOx	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	4/6/2015	5/6/2015	5	23	
2	Grading	Grading	5/7/2015	5/6/2016	5	262	
3	Paving	Paving	5/9/2016	6/3/2016	5	20	
4	Building Construction	Building Construction	6/6/2016	6/6/2018	5	523	
5	Architectural Coating	Architectural Coating	6/20/2016	6/20/2018	5	523	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 135

Acres of Paving: 0

Residential Indoor: 1,326,780; Residential Outdoor: 442,260; Non-Residential Indoor: 284,331; Non-Residential Outdoor: 94,777 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412						
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0708	0.0903	0.8816	1.5400e-003	0.1369	1.0600e-003	0.1380	0.0363	9.7000e-004	0.0373						
Total	**0.0708**	**0.0903**	**0.8816**	**1.5400e-003**	**0.1369**	**1.0600e-003**	**0.1380**	**0.0363**	**9.7000e-004**	**0.0373**						

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412						
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0708	0.0903	0.8816	1.5400e-003	0.1369	1.0600e-003	0.1380	0.0363	9.7000e-004	0.0373						
Total	**0.0708**	**0.0903**	**0.8816**	**1.5400e-003**	**0.1369**	**1.0600e-003**	**0.1380**	**0.0363**	**9.7000e-004**	**0.0373**						

3.3 Grading - 2015

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980						
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**6.5685**	**3.8022**	**10.3707**	**3.3692**	**3.4980**	**6.8672**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0787	0.1004	0.9796	1.7100e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0700e-003	0.0414						
Total	**0.0787**	**0.1004**	**0.9796**	**1.7100e-003**	**0.1521**	**1.1700e-003**	**0.1533**	**0.0404**	**1.0700e-003**	**0.0414**						

3.3 Grading - 2015

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980						
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**6.5685**	**3.8022**	**10.3707**	**3.3692**	**3.4980**	**6.8672**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0787	0.1004	0.9796	1.7100e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0700e-003	0.0414						
Total	**0.0787**	**0.1004**	**0.9796**	**1.7100e-003**	**0.1521**	**1.1700e-003**	**0.1533**	**0.0404**	**1.0700e-003**	**0.0414**						

3.3 Grading - 2016

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975						
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.5685**	**3.5842**	**10.1528**	**3.3692**	**3.2975**	**6.6667**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0699	0.0895	0.8712	1.7100e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414						
Total	**0.0699**	**0.0895**	**0.8712**	**1.7100e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**						

3.3 Grading - 2016

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					6.5685	0.0000	6.5685	3.3692	0.0000	3.3692						
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975						
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.5685**	**3.5842**	**10.1528**	**3.3692**	**3.2975**	**6.6667**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0699	0.0895	0.8712	1.7100e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414						
Total	**0.0699**	**0.0895**	**0.8712**	**1.7100e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**						

3.4 Paving - 2016

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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310						
Total	**0.0524**	**0.0671**	**0.6534**	**1.2800e-003**	**0.1141**	**8.4000e-004**	**0.1149**	**0.0303**	**7.7000e-004**	**0.0310**						

3.4 Paving - 2016

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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310						
Total	**0.0524**	**0.0671**	**0.6534**	**1.2800e-003**	**0.1141**	**8.4000e-004**	**0.1149**	**0.0303**	**7.7000e-004**	**0.0310**						

3.5 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**						

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						
Vendor	1.1133	6.0278	14.4004	0.0146	0.4112	0.0935	0.5047	0.1171	0.0859	0.2030						
Worker	0.7377	0.9438	9.1913	0.0180	1.6051	0.0118	1.6169	0.4258	0.0108	0.4366						
Total	**1.8510**	**6.9716**	**23.5917**	**0.0326**	**2.0163**	**0.1053**	**2.1216**	**0.5428**	**0.0967**	**0.6396**						

3.5 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**						

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						
Vendor	1.1133	6.0278	14.4004	0.0146	0.4112	0.0935	0.5047	0.1171	0.0859	0.2030						
Worker	0.7377	0.9438	9.1913	0.0180	1.6051	0.0118	1.6169	0.4258	0.0108	0.4366						
Total	**1.8510**	**6.9716**	**23.5917**	**0.0326**	**2.0163**	**0.1053**	**2.1216**	**0.5428**	**0.0967**	**0.6396**						

3.5 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

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						
Vendor	0.9511	5.3344	13.3512	0.0146	0.4113	0.0788	0.4901	0.1171	0.0724	0.1895						
Worker	0.6514	0.8428	8.1644	0.0180	1.6051	0.0114	1.6165	0.4258	0.0105	0.4363						
Total	**1.6024**	**6.1772**	**21.5156**	**0.0326**	**2.0164**	**0.0902**	**2.1066**	**0.5429**	**0.0829**	**0.6258**						

3.5 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

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						
Vendor	0.9511	5.3344	13.3512	0.0146	0.4113	0.0788	0.4901	0.1171	0.0724	0.1895						
Worker	0.6514	0.8428	8.1644	0.0180	1.6051	0.0114	1.6165	0.4258	0.0105	0.4363						
Total	**1.6024**	**6.1772**	**21.5156**	**0.0326**	**2.0164**	**0.0902**	**2.1066**	**0.5429**	**0.0829**	**0.6258**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.7748	4.8054	12.2969	0.0145	0.4112	0.0724	0.4836	0.1171	0.0666	0.1836						
Worker	0.5787	0.7586	7.3047	0.0180	1.6051	0.0112	1.6162	0.4258	0.0103	0.4361						
Total	**1.3535**	**5.5639**	**19.6016**	**0.0325**	**2.0163**	**0.0836**	**2.0998**	**0.5428**	**0.0769**	**0.6197**						

3.5 Building Construction - 2018

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	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.7748	4.8054	12.2969	0.0145	0.4112	0.0724	0.4836	0.1171	0.0666	0.1836						
Worker	0.5787	0.7586	7.3047	0.0180	1.6051	0.0112	1.6162	0.4258	0.0103	0.4361						
Total	**1.3535**	**5.5639**	**19.6016**	**0.0325**	**2.0163**	**0.0836**	**2.0998**	**0.5428**	**0.0769**	**0.6197**						

3.6 Architectural Coating - 2016

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966						
Total	**21.0860**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1468	0.1879	1.8296	3.5900e-003	0.3195	2.3500e-003	0.3218	0.0848	2.1600e-003	0.0869						
Total	**0.1468**	**0.1879**	**1.8296**	**3.5900e-003**	**0.3195**	**2.3500e-003**	**0.3218**	**0.0848**	**2.1600e-003**	**0.0869**						

3.6 Architectural Coating - 2016

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966						
Total	**21.0860**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1468	0.1879	1.8296	3.5900e-003	0.3195	2.3500e-003	0.3218	0.0848	2.1600e-003	0.0869						
Total	**0.1468**	**0.1879**	**1.8296**	**3.5900e-003**	**0.3195**	**2.3500e-003**	**0.3218**	**0.0848**	**2.1600e-003**	**0.0869**						

3.6 Architectural Coating - 2017

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**21.0498**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1297	0.1678	1.6252	3.5800e-003	0.3195	2.2700e-003	0.3218	0.0848	2.0900e-003	0.0868						
Total	**0.1297**	**0.1678**	**1.6252**	**3.5800e-003**	**0.3195**	**2.2700e-003**	**0.3218**	**0.0848**	**2.0900e-003**	**0.0868**						

3.6 Architectural Coating - 2017

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**21.0498**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1297	0.1678	1.6252	3.5800e-003	0.3195	2.2700e-003	0.3218	0.0848	2.0900e-003	0.0868						
Total	**0.1297**	**0.1678**	**1.6252**	**3.5800e-003**	**0.3195**	**2.2700e-003**	**0.3218**	**0.0848**	**2.0900e-003**	**0.0868**						

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**21.0161**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1152	0.1510	1.4540	3.5800e-003	0.3195	2.2200e-003	0.3217	0.0848	2.0600e-003	0.0868						
Total	**0.1152**	**0.1510**	**1.4540**	**3.5800e-003**	**0.3195**	**2.2200e-003**	**0.3217**	**0.0848**	**2.0600e-003**	**0.0868**						

3.6 Architectural Coating - 2018

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	20.7175					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**21.0161**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1152	0.1510	1.4540	3.5800e-003	0.3195	2.2200e-003	0.3217	0.0848	2.0600e-003	0.0868						
Total	**0.1152**	**0.1510**	**1.4540**	**3.5800e-003**	**0.3195**	**2.2200e-003**	**0.3217**	**0.0848**	**2.0600e-003**	**0.0868**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Elementary School	0.00	0.00	0.00	65.00	30.00	5.00	63	25	12
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

5.0 Energy Detail

4.4 Fleet Mix

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Unmitigated	18.9954	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	18.0777					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						
Landscaping	0.9176	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**		**0.1661**	**0.1661**		**0.1661**	**0.1661**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	18.0777					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						
Landscaping	0.9176	0.3480	30.1575	1.5900e-003		0.1661	0.1661		0.1661	0.1661						
Total	**18.9954**	**0.3480**	**30.1575**	**1.5900e-003**		**0.1661**	**0.1661**		**0.1661**	**0.1661**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction AQ - Phase 2

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	246.00	Dwelling Unit	59.56	442,800.00	657
City Park	0.30	Acre	0.30	13,068.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 2

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/24/2022	2/3/2020
tblConstructionPhase	PhaseStartDate	1/25/2020	2/5/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	95.00

tblLandUse	LotAcreage	79.87	59.56
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblSolidWaste	SolidWasteGenerationRate	236.52	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	16,027,890.30	0.00
tblWater	OutdoorWaterUseRate	357,444.40	0.00
tblWater	OutdoorWaterUseRate	10,104,539.54	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1706	69.6564	47.6691	0.0637	18.2032	3.3183	20.9584	9.9670	3.0528	12.5018						
2018	14.5569	59.5919	43.0861	0.0637	6.7467	2.7891	9.5357	3.4124	2.5660	5.9784						
2019	14.1561	24.7352	25.9022	0.0465	1.0241	1.4461	2.4702	0.2749	1.3668	1.6417						
2020	13.8367	22.4631	24.9933	0.0465	1.0241	1.2533	2.2774	0.2749	1.1846	1.4594						
Total	**48.7204**	**176.4465**	**141.6506**	**0.2203**	**26.9981**	**8.8067**	**35.2417**	**13.9291**	**8.1701**	**21.5812**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2017	6.1706	69.6564	47.6691	0.0637	18.2032	3.3183	20.9584	9.9670	3.0528	12.5018						
2018	14.5569	59.5919	43.0861	0.0637	6.7467	2.7891	9.5357	3.4124	2.5660	5.9784						
2019	14.1561	24.7352	25.9022	0.0465	1.0241	1.4461	2.4702	0.2749	1.3668	1.6417						
2020	13.8367	22.4631	24.9933	0.0465	1.0241	1.2533	2.2774	0.2749	1.1846	1.4594						
Total	**48.7204**	**176.4465**	**141.6506**	**0.2203**	**26.9981**	**8.8067**	**35.2417**	**13.9291**	**8.1701**	**21.5812**						

	ROG	NOx	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**

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	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.1121**	**0.1121**						

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	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.1121**	**0.1121**						

	ROG	NOx	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	4/3/2017	5/3/2017	5	23	
2	Grading	Grading	5/4/2017	1/4/2018	5	176	
3	Paving	Paving	1/5/2018	1/25/2018	5	15	
4	Building Construction	Building Construction	1/26/2018	1/24/2020	5	521	
5	Architectural Coating	Architectural Coating	2/5/2018	2/3/2020	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 95

Acres of Paving: 0

Residential Indoor: 896,670; Residential Outdoor: 298,890; Non-Residential Indoor: 19,602; Non-Residential Outdoor: 6,534 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	94.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372						
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**						

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372						
Total	**0.0643**	**0.0580**	**0.7776**	**1.7500e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**						

3.3 Grading - 2017

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.5945**	**3.3172**	**9.9117**	**3.3720**	**3.0518**	**6.4239**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414						
Total	**0.0715**	**0.0645**	**0.8640**	**1.9500e-003**	**0.1521**	**1.0800e-003**	**0.1532**	**0.0404**	**1.0000e-003**	**0.0414**						

3.3 Grading - 2017

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.5945**	**3.3172**	**9.9117**	**3.3720**	**3.0518**	**6.4239**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0715	0.0645	0.8640	1.9500e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414						
Total	**0.0715**	**0.0645**	**0.8640**	**1.9500e-003**	**0.1521**	**1.0800e-003**	**0.1532**	**0.0404**	**1.0000e-003**	**0.0414**						

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650						
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.5945**	**2.7880**	**9.3825**	**3.3720**	**2.5650**	**5.9370**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0641	0.0581	0.7793	1.9400e-003	0.1521	1.0600e-003	0.1532	0.0404	9.8000e-004	0.0413						
Total	**0.0641**	**0.0581**	**0.7793**	**1.9400e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.8000e-004**	**0.0413**						

3.3 Grading - 2018

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650						
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.5945**	**2.7880**	**9.3825**	**3.3720**	**2.5650**	**5.9370**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0641	0.0581	0.7793	1.9400e-003	0.1521	1.0600e-003	0.1532	0.0404	9.8000e-004	0.0413						
Total	**0.0641**	**0.0581**	**0.7793**	**1.9400e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.8000e-004**	**0.0413**						

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.4 Paving - 2018

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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0481	0.0436	0.5845	1.4600e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0481**	**0.0436**	**0.5845**	**1.4600e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.2425	1.7953	3.0834	5.8200e-003	0.1645	0.0286	0.1930	0.0468	0.0262	0.0731						
Worker	0.3013	0.2729	3.6628	9.1400e-003	0.7151	4.9800e-003	0.7200	0.1897	4.6000e-003	0.1943						
Total	**0.5438**	**2.0682**	**6.7462**	**0.0150**	**0.8795**	**0.0335**	**0.9131**	**0.2365**	**0.0308**	**0.2673**						

3.5 Building Construction - 2018

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	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.2425	1.7953	3.0834	5.8200e-003	0.1645	0.0286	0.1930	0.0468	0.0262	0.0731						
Worker	0.3013	0.2729	3.6628	9.1400e-003	0.7151	4.9800e-003	0.7200	0.1897	4.6000e-003	0.1943						
Total	**0.5438**	**2.0682**	**6.7462**	**0.0150**	**0.8795**	**0.0335**	**0.9131**	**0.2365**	**0.0308**	**0.2673**						

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083						
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**						

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						
Vendor	0.2201	1.6345	2.8719	5.8100e-003	0.1645	0.0264	0.1909	0.0468	0.0243	0.0711						
Worker	0.2771	0.2497	3.3845	9.0900e-003	0.7151	4.9100e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4972**	**1.8843**	**6.2564**	**0.0149**	**0.8796**	**0.0313**	**0.9109**	**0.2365**	**0.0288**	**0.2654**						

3.5 Building Construction - 2019

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	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083						
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**						

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						
Vendor	0.2201	1.6345	2.8719	5.8100e-003	0.1645	0.0264	0.1909	0.0468	0.0243	0.0711						
Worker	0.2771	0.2497	3.3845	9.0900e-003	0.7151	4.9100e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4972**	**1.8843**	**6.2564**	**0.0149**	**0.8796**	**0.0313**	**0.9109**	**0.2365**	**0.0288**	**0.2654**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.1873	1.4171	2.5618	5.8000e-003	0.1646	0.0236	0.1881	0.0469	0.0217	0.0685						
Worker	0.2588	0.2314	3.1541	9.0900e-003	0.7151	4.9200e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4461**	**1.6485**	**5.7159**	**0.0149**	**0.8796**	**0.0285**	**0.9081**	**0.2365**	**0.0262**	**0.2628**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.1873	1.4171	2.5618	5.8000e-003	0.1646	0.0236	0.1881	0.0469	0.0217	0.0685						
Worker	0.2588	0.2314	3.1541	9.0900e-003	0.7151	4.9200e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4461**	**1.6485**	**5.7159**	**0.0149**	**0.8796**	**0.0285**	**0.9081**	**0.2365**	**0.0262**	**0.2628**						

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**11.2835**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0609	0.0552	0.7404	1.8500e-003	0.1445	1.0100e-003	0.1455	0.0383	9.3000e-004	0.0393						
Total	**0.0609**	**0.0552**	**0.7404**	**1.8500e-003**	**0.1445**	**1.0100e-003**	**0.1455**	**0.0383**	**9.3000e-004**	**0.0393**						

3.6 Architectural Coating - 2018

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**11.2835**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0609	0.0552	0.7404	1.8500e-003	0.1445	1.0100e-003	0.1455	0.0383	9.3000e-004	0.0393						
Total	**0.0609**	**0.0552**	**0.7404**	**1.8500e-003**	**0.1445**	**1.0100e-003**	**0.1455**	**0.0383**	**9.3000e-004**	**0.0393**						

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288						
Total	**11.2513**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0560	0.0505	0.6841	1.8400e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0560**	**0.0505**	**0.6841**	**1.8400e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2019

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288						
Total	**11.2513**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0560	0.0505	0.6841	1.8400e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0560**	**0.0505**	**0.6841**	**1.8400e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2020

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**11.2271**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0523	0.0468	0.6375	1.8400e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0523**	**0.0468**	**0.6375**	**1.8400e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2020

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**11.2271**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0523	0.0468	0.6375	1.8400e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0523**	**0.0468**	**0.6375**	**1.8400e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Unmitigated	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5555					0.0000	0.0000		0.0000	0.0000						
Consumer Products	9.7556					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						
Landscaping	0.6163	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**		**0.1121**	**0.1121**		**0.1121**	**0.1121**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5555					0.0000	0.0000		0.0000	0.0000						
Consumer Products	9.7556					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						
Landscaping	0.6163	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**		**0.1121**	**0.1121**		**0.1121**	**0.1121**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction AQ - Phase 2

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	246.00	Dwelling Unit	59.56	442,800.00	657
City Park	0.30	Acre	0.30	13,068.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 2

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/24/2022	2/3/2020
tblConstructionPhase	PhaseStartDate	1/25/2020	2/5/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	95.00

tblLandUse	LotAcreage	79.87	59.56
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblSolidWaste	SolidWasteGenerationRate	236.52	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	16,027,890.30	0.00
tblWater	OutdoorWaterUseRate	357,444.40	0.00
tblWater	OutdoorWaterUseRate	10,104,539.54	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.1609	69.6719	47.5789	0.0634	18.2032	3.3183	20.9584	9.9670	3.0528	12.5018						
2018	14.5720	59.6057	42.9992	0.0634	6.7467	2.7891	9.5357	3.4124	2.5660	5.9784						
2019	14.1649	24.9207	27.2412	0.0452	1.0241	1.4465	2.4706	0.2749	1.3672	1.6420						
2020	13.8348	22.6269	26.3681	0.0451	1.0241	1.2536	2.2777	0.2749	1.1849	1.4597						
Total	**48.7326**	**176.8251**	**144.1874**	**0.2171**	**26.9981**	**8.8074**	**35.2424**	**13.9291**	**8.1708**	**21.5819**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2017	6.1609	69.6719	47.5789	0.0634	18.2032	3.3183	20.9584	9.9670	3.0528	12.5018						
2018	14.5720	59.6057	42.9992	0.0634	6.7467	2.7891	9.5357	3.4124	2.5660	5.9784						
2019	14.1649	24.9207	27.2412	0.0452	1.0241	1.4465	2.4706	0.2749	1.3672	1.6420						
2020	13.8348	22.6269	26.3681	0.0451	1.0241	1.2536	2.2777	0.2749	1.1849	1.4597						
Total	**48.7326**	**176.8251**	**144.1874**	**0.2171**	**26.9981**	**8.8074**	**35.2424**	**13.9291**	**8.1708**	**21.5819**						

	ROG	NOx	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**

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	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.1121**	**0.1121**						

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	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.1121**	**0.1121**						

	ROG	NOx	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	4/3/2017	5/3/2017	5	23	
2	Grading	Grading	5/4/2017	1/4/2018	5	176	
3	Paving	Paving	1/5/2018	1/25/2018	5	15	
4	Building Construction	Building Construction	1/26/2018	1/24/2020	5	521	
5	Architectural Coating	Architectural Coating	2/5/2018	2/3/2020	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 95

Acres of Paving: 0

Residential Indoor: 896,670; Residential Outdoor: 298,890; Non-Residential Indoor: 19,602; Non-Residential Outdoor: 6,534 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	94.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372						
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**						

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372						
Total	**0.0556**	**0.0719**	**0.6965**	**1.5400e-003**	**0.1369**	**9.7000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**						

3.3 Grading - 2017

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.5945**	**3.3172**	**9.9117**	**3.3720**	**3.0518**	**6.4239**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414						
Total	**0.0617**	**0.0799**	**0.7739**	**1.7100e-003**	**0.1521**	**1.0800e-003**	**0.1532**	**0.0404**	**1.0000e-003**	**0.0414**						

3.3 Grading - 2017

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**6.5945**	**3.3172**	**9.9117**	**3.3720**	**3.0518**	**6.4239**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0617	0.0799	0.7739	1.7100e-003	0.1521	1.0800e-003	0.1532	0.0404	1.0000e-003	0.0414						
Total	**0.0617**	**0.0799**	**0.7739**	**1.7100e-003**	**0.1521**	**1.0800e-003**	**0.1532**	**0.0404**	**1.0000e-003**	**0.0414**						

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650						
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.5945**	**2.7880**	**9.3825**	**3.3720**	**2.5650**	**5.9370**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0549	0.0719	0.6924	1.7100e-003	0.1521	1.0600e-003	0.1532	0.0404	9.8000e-004	0.0413						
Total	**0.0549**	**0.0719**	**0.6924**	**1.7100e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.8000e-004**	**0.0413**						

3.3 Grading - 2018

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					6.5945	0.0000	6.5945	3.3720	0.0000	3.3720						
Off-Road	5.2895	59.5338	42.3068	0.0617		2.7880	2.7880		2.5650	2.5650						
Total	**5.2895**	**59.5338**	**42.3068**	**0.0617**	**6.5945**	**2.7880**	**9.3825**	**3.3720**	**2.5650**	**5.9370**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0549	0.0719	0.6924	1.7100e-003	0.1521	1.0600e-003	0.1532	0.0404	9.8000e-004	0.0413						
Total	**0.0549**	**0.0719**	**0.6924**	**1.7100e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.8000e-004**	**0.0413**						

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.4 Paving - 2018

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	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0411	0.0539	0.5193	1.2800e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0411**	**0.0539**	**0.5193**	**1.2800e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.3099	1.9221	4.9188	5.8000e-003	0.1645	0.0290	0.1934	0.0468	0.0266	0.0735						
Worker	0.2578	0.3380	3.2542	8.0200e-003	0.7151	4.9800e-003	0.7200	0.1897	4.6000e-003	0.1943						
Total	**0.5677**	**2.2601**	**8.1730**	**0.0138**	**0.8795**	**0.0339**	**0.9135**	**0.2365**	**0.0312**	**0.2677**						

3.5 Building Construction - 2018

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	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**						

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						
Vendor	0.3099	1.9221	4.9188	5.8000e-003	0.1645	0.0290	0.1934	0.0468	0.0266	0.0735						
Worker	0.2578	0.3380	3.2542	8.0200e-003	0.7151	4.9800e-003	0.7200	0.1897	4.6000e-003	0.1943						
Total	**0.5677**	**2.2601**	**8.1730**	**0.0138**	**0.8795**	**0.0339**	**0.9135**	**0.2365**	**0.0312**	**0.2677**						

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083						
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**						

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						
Vendor	0.2783	1.7488	4.6898	5.7900e-003	0.1645	0.0268	0.1913	0.0468	0.0246	0.0715						
Worker	0.2359	0.3090	2.9862	7.9700e-003	0.7151	4.9100e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.5142**	**2.0578**	**7.6760**	**0.0138**	**0.8796**	**0.0317**	**0.9113**	**0.2365**	**0.0292**	**0.2657**						

3.5 Building Construction - 2019

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	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083						
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**						

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						
Vendor	0.2783	1.7488	4.6898	5.7900e-003	0.1645	0.0268	0.1913	0.0468	0.0246	0.0715						
Worker	0.2359	0.3090	2.9862	7.9700e-003	0.7151	4.9100e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.5142**	**2.0578**	**7.6760**	**0.0138**	**0.8796**	**0.0317**	**0.9113**	**0.2365**	**0.0292**	**0.2657**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.2319	1.5152	4.4003	5.7800e-003	0.1646	0.0239	0.1885	0.0469	0.0220	0.0688						
Worker	0.2200	0.2861	2.7684	7.9700e-003	0.7151	4.9200e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4520**	**1.8013**	**7.1687**	**0.0138**	**0.8796**	**0.0288**	**0.9084**	**0.2365**	**0.0265**	**0.2631**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.2319	1.5152	4.4003	5.7800e-003	0.1646	0.0239	0.1885	0.0469	0.0220	0.0688						
Worker	0.2200	0.2861	2.7684	7.9700e-003	0.7151	4.9200e-003	0.7200	0.1897	4.5600e-003	0.1942						
Total	**0.4520**	**1.8013**	**7.1687**	**0.0138**	**0.8796**	**0.0288**	**0.9084**	**0.2365**	**0.0265**	**0.2631**						

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**11.2835**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0521	0.0683	0.6578	1.6200e-003	0.1445	1.0100e-003	0.1455	0.0383	9.3000e-004	0.0393						
Total	**0.0521**	**0.0683**	**0.6578**	**1.6200e-003**	**0.1445**	**1.0100e-003**	**0.1455**	**0.0383**	**9.3000e-004**	**0.0393**						

3.6 Architectural Coating - 2018

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506						
Total	**11.2835**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0521	0.0683	0.6578	1.6200e-003	0.1445	1.0100e-003	0.1455	0.0383	9.3000e-004	0.0393						
Total	**0.0521**	**0.0683**	**0.6578**	**1.6200e-003**	**0.1445**	**1.0100e-003**	**0.1455**	**0.0383**	**9.3000e-004**	**0.0393**						

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288						
Total	**11.2513**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0477	0.0625	0.6036	1.6100e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0477**	**0.0625**	**0.6036**	**1.6100e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2019

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288						
Total	**11.2513**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0477	0.0625	0.6036	1.6100e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0477**	**0.0625**	**0.6036**	**1.6100e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2020

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**11.2271**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0445	0.0578	0.5596	1.6100e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0445**	**0.0578**	**0.5596**	**1.6100e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

3.6 Architectural Coating - 2020

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	10.9849					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**11.2271**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0445	0.0578	0.5596	1.6100e-003	0.1445	9.9000e-004	0.1455	0.0383	9.2000e-004	0.0393						
Total	**0.0445**	**0.0578**	**0.5596**	**1.6100e-003**	**0.1445**	**9.9000e-004**	**0.1455**	**0.0383**	**9.2000e-004**	**0.0393**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Unmitigated	11.9274	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5555					0.0000	0.0000		0.0000	0.0000						
Consumer Products	9.7556					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						
Landscaping	0.6163	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**		**0.1121**	**0.1121**		**0.1121**	**0.1121**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5555					0.0000	0.0000		0.0000	0.0000						
Consumer Products	9.7556					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						
Landscaping	0.6163	0.2348	20.3394	1.0700e-003		0.1121	0.1121		0.1121	0.1121						
Total	**11.9274**	**0.2348**	**20.3394**	**1.0700e-003**		**0.1121**	**0.1121**		**0.1121**	**0.1121**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction AQ - Phase 3

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.30	Acre	5.30	230,868.00	0
Single Family Housing	265.00	Dwelling Unit	64.16	477,000.00	708

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 3

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/22/2024	2/4/2022
tblConstructionPhase	PhaseStartDate	1/22/2022	2/7/2020
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	105.00

tblLandUse	LotAcreage	86.04	64.16
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.46	0.00
tblSolidWaste	SolidWasteGenerationRate	254.88	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	17,265,816.79	0.00
tblWater	OutdoorWaterUseRate	6,314,851.15	0.00
tblWater	OutdoorWaterUseRate	10,884,971.45	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.9501	54.2509	41.0089	0.0636	18.2032	2.5060	20.3546	9.9670	2.3055	11.9463						
2020	21.0474	49.4332	39.0968	0.0657	6.8069	2.2630	9.0699	3.4189	2.0820	5.5009						
2021	20.7352	22.1935	31.2857	0.0657	2.1376	1.1111	3.2487	0.5746	1.0492	1.6238						
2022	20.4856	19.9472	30.5190	0.0657	2.1377	0.9487	3.0865	0.5746	0.8963	1.4710						
Total	**67.2183**	**145.8248**	**141.9104**	**0.2607**	**29.2854**	**6.8288**	**35.7597**	**14.5351**	**6.3330**	**20.5419**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2019	4.9501	54.2509	41.0089	0.0636	18.2032	2.5060	20.3546	9.9670	2.3055	11.9463						
2020	21.0474	49.4332	39.0968	0.0657	6.8069	2.2630	9.0699	3.4189	2.0820	5.5009						
2021	20.7352	22.1935	31.2857	0.0657	2.1376	1.1111	3.2487	0.5746	1.0492	1.6238						
2022	20.4856	19.9472	30.5190	0.0657	2.1377	0.9487	3.0865	0.5746	0.8963	1.4710						
Total	**67.2183**	**145.8248**	**141.9104**	**0.2607**	**29.2854**	**6.8288**	**35.7597**	**14.5351**	**6.3330**	**20.5419**						

	ROG	NOx	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**

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	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**	**0.0000**	**0.1208**	**0.1208**	**0.0000**	**0.1208**	**0.1208**						

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	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**	**0.0000**	**0.1208**	**0.1208**	**0.0000**	**0.1208**	**0.1208**						

	ROG	NOx	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	4/1/2019	5/1/2019	5	23	
2	Grading	Grading	5/2/2019	1/2/2020	5	176	
3	Paving	Paving	1/3/2020	1/23/2020	5	15	
4	Building Construction	Building Construction	1/24/2020	1/21/2022	5	521	
5	Architectural Coating	Architectural Coating	2/7/2020	2/4/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 965,925; Residential Outdoor: 321,975; Non-Residential Indoor: 346,302; Non-Residential Outdoor: 115,434 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	192.00	66.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784						
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0531	0.0478	0.6481	1.7400e-003	0.1369	9.4000e-004	0.1379	0.0363	8.7000e-004	0.0372						
Total	**0.0531**	**0.0478**	**0.6481**	**1.7400e-003**	**0.1369**	**9.4000e-004**	**0.1379**	**0.0363**	**8.7000e-004**	**0.0372**						

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784						
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0531	0.0478	0.6481	1.7400e-003	0.1369	9.4000e-004	0.1379	0.0363	8.7000e-004	0.0372						
Total	**0.0531**	**0.0478**	**0.6481**	**1.7400e-003**	**0.1369**	**9.4000e-004**	**0.1379**	**0.0363**	**8.7000e-004**	**0.0372**						

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045						
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.6548**	**2.5049**	**9.1597**	**3.3785**	**2.3045**	**5.6831**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0590	0.0531	0.7201	1.9300e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0590**	**0.0531**	**0.7201**	**1.9300e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2019

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045						
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.6548**	**2.5049**	**9.1597**	**3.3785**	**2.3045**	**5.6831**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0590	0.0531	0.7201	1.9300e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0590**	**0.0531**	**0.7201**	**1.9300e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2020

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810						
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**6.6548**	**2.2619**	**8.9167**	**3.3785**	**2.0810**	**5.4595**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0551	0.0492	0.6711	1.9300e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0551**	**0.0492**	**0.6711**	**1.9300e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2020

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810						
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**6.6548**	**2.2619**	**8.9167**	**3.3785**	**2.0810**	**5.4595**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0551	0.0492	0.6711	1.9300e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0551**	**0.0492**	**0.6711**	**1.9300e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.4 Paving - 2020

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	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0413	0.0369	0.5033	1.4500e-003	0.1141	7.8000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0413**	**0.0369**	**0.5033**	**1.4500e-003**	**0.1141**	**7.8000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.4 Paving - 2020

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	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0413	0.0369	0.5033	1.4500e-003	0.1141	7.8000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0413**	**0.0369**	**0.5033**	**1.4500e-003**	**0.1141**	**7.8000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.4414	3.3403	6.0386	0.0137	0.3879	0.0556	0.4434	0.1104	0.0511	0.1615						
Worker	0.5287	0.4727	6.4423	0.0186	1.4605	0.0100	1.4706	0.3874	9.3100e-003	0.3967						
Total	**0.9700**	**3.8130**	**12.4809**	**0.0323**	**1.8484**	**0.0656**	**1.9140**	**0.4979**	**0.0604**	**0.5583**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.4414	3.3403	6.0386	0.0137	0.3879	0.0556	0.4434	0.1104	0.0511	0.1615						
Worker	0.5287	0.4727	6.4423	0.0186	1.4605	0.0100	1.4706	0.3874	9.3100e-003	0.3967						
Total	**0.9700**	**3.8130**	**12.4809**	**0.0323**	**1.8484**	**0.0656**	**1.9140**	**0.4979**	**0.0604**	**0.5583**						

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979						
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**						

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						
Vendor	0.4066	2.7973	5.6773	0.0137	0.3880	0.0500	0.4380	0.1105	0.0460	0.1565						
Worker	0.4987	0.4418	6.0549	0.0186	1.4605	0.0101	1.4706	0.3874	9.3600e-003	0.3968						
Total	**0.9053**	**3.2390**	**11.7322**	**0.0322**	**1.8485**	**0.0601**	**1.9087**	**0.4979**	**0.0554**	**0.5533**						

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979						
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**						

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						
Vendor	0.4066	2.7973	5.6773	0.0137	0.3880	0.0500	0.4380	0.1105	0.0460	0.1565						
Worker	0.4987	0.4418	6.0549	0.0186	1.4605	0.0101	1.4706	0.3874	9.3600e-003	0.3968						
Total	**0.9053**	**3.2390**	**11.7322**	**0.0322**	**1.8485**	**0.0601**	**1.9087**	**0.4979**	**0.0554**	**0.5533**						

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581						
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**						

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						
Vendor	0.3972	2.5049	5.5330	0.0137	0.3881	0.0491	0.4373	0.1105	0.0452	0.1558						
Worker	0.4720	0.4152	5.7139	0.0186	1.4605	0.0102	1.4707	0.3874	9.4200e-003	0.3968						
Total	**0.8692**	**2.9201**	**11.2469**	**0.0322**	**1.8487**	**0.0593**	**1.9080**	**0.4980**	**0.0546**	**0.5526**						

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581						
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**						

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						
Vendor	0.3972	2.5049	5.5330	0.0137	0.3881	0.0491	0.4373	0.1105	0.0452	0.1558						
Worker	0.4720	0.4152	5.7139	0.0186	1.4605	0.0102	1.4707	0.3874	9.4200e-003	0.3968						
Total	**0.8692**	**2.9201**	**11.2469**	**0.0322**	**1.8487**	**0.0593**	**1.9080**	**0.4980**	**0.0546**	**0.5526**						

3.6 Architectural Coating - 2020

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	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**17.8614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1046	0.0936	1.2751	3.6800e-003	0.2891	1.9900e-003	0.2911	0.0767	1.8400e-003	0.0785						
Total	**0.1046**	**0.0936**	**1.2751**	**3.6800e-003**	**0.2891**	**1.9900e-003**	**0.2911**	**0.0767**	**1.8400e-003**	**0.0785**						

3.6 Architectural Coating - 2020

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	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**17.8614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1046	0.0936	1.2751	3.6800e-003	0.2891	1.9900e-003	0.2911	0.0767	1.8400e-003	0.0785						
Total	**0.1046**	**0.0936**	**1.2751**	**3.6800e-003**	**0.2891**	**1.9900e-003**	**0.2911**	**0.0767**	**1.8400e-003**	**0.0785**						

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941						
Total	**17.8382**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0987	0.0874	1.1984	3.6800e-003	0.2891	2.0000e-003	0.2911	0.0767	1.8500e-003	0.0785						
Total	**0.0987**	**0.0874**	**1.1984**	**3.6800e-003**	**0.2891**	**2.0000e-003**	**0.2911**	**0.0767**	**1.8500e-003**	**0.0785**						

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941						
Total	**17.8382**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0987	0.0874	1.1984	3.6800e-003	0.2891	2.0000e-003	0.2911	0.0767	1.8500e-003	0.0785						
Total	**0.0987**	**0.0874**	**1.1984**	**3.6800e-003**	**0.2891**	**2.0000e-003**	**0.2911**	**0.0767**	**1.8500e-003**	**0.0785**						

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**17.8238**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0934	0.0822	1.1309	3.6800e-003	0.2891	2.0100e-003	0.2911	0.0767	1.8600e-003	0.0785						
Total	**0.0934**	**0.0822**	**1.1309**	**3.6800e-003**	**0.2891**	**2.0100e-003**	**0.2911**	**0.0767**	**1.8600e-003**	**0.0785**						

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**17.8238**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0934	0.0822	1.1309	3.6800e-003	0.2891	2.0100e-003	0.2911	0.0767	1.8600e-003	0.0785						
Total	**0.0934**	**0.0822**	**1.1309**	**3.6800e-003**	**0.2891**	**2.0100e-003**	**0.2911**	**0.0767**	**1.8600e-003**	**0.0785**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Unmitigated	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						

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	2.2951					0.0000	0.0000		0.0000	0.0000						
Consumer Products	15.1484					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						
Landscaping	0.6639	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**		**0.1208**	**0.1208**		**0.1208**	**0.1208**						

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	2.2951					0.0000	0.0000		0.0000	0.0000						
Consumer Products	15.1484					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						
Landscaping	0.6639	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**		**0.1208**	**0.1208**		**0.1208**	**0.1208**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction AQ - Phase 3

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.30	Acre	5.30	230,868.00	0
Single Family Housing	265.00	Dwelling Unit	64.16	477,000.00	708

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 3

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/22/2024	2/4/2022
tblConstructionPhase	PhaseStartDate	1/22/2022	2/7/2020
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	105.00

tblLandUse	LotAcreage	86.04	64.16
tblProjectCharacteristics	OperationalYear	2014	2021
tblSolidWaste	SolidWasteGenerationRate	0.46	0.00
tblSolidWaste	SolidWasteGenerationRate	254.88	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	17,265,816.79	0.00
tblWater	OutdoorWaterUseRate	6,314,851.15	0.00
tblWater	OutdoorWaterUseRate	10,884,971.45	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.9414	54.2635	40.9242	0.0634	18.2032	2.5060	20.3546	9.9670	2.3055	11.9463						
2020	21.0578	49.4448	39.0147	0.0634	6.8069	2.2630	9.0699	3.4189	2.0820	5.5009						
2021	20.7352	22.5119	34.6357	0.0629	2.1376	1.1118	3.2494	0.5746	1.0498	1.6244						
2022	20.4825	20.2373	33.7124	0.0629	2.1377	0.9494	3.0871	0.5746	0.8969	1.4716						
Total	**67.2169**	**146.4576**	**148.2870**	**0.2526**	**29.2854**	**6.8302**	**35.7610**	**14.5351**	**6.3342**	**20.5432**						

2.1 Overall Construction (Maximum Daily Emission)

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					
2019	4.9414	54.2635	40.9242	0.0634	18.2032	2.5060	20.3546	9.9670	2.3055	11.9463						
2020	21.0578	49.4448	39.0147	0.0634	6.8069	2.2630	9.0699	3.4189	2.0820	5.5009						
2021	20.7352	22.5119	34.6357	0.0629	2.1376	1.1118	3.2494	0.5746	1.0498	1.6244						
2022	20.4825	20.2373	33.7124	0.0629	2.1377	0.9494	3.0871	0.5746	0.8969	1.4716						
Total	**67.2169**	**146.4576**	**148.2870**	**0.2526**	**29.2854**	**6.8302**	**35.7610**	**14.5351**	**6.3342**	**20.5432**						

	ROG	NOx	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**

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	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**	**0.0000**	**0.1208**	**0.1208**	**0.0000**	**0.1208**	**0.1208**						

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	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**	**0.0000**	**0.1208**	**0.1208**	**0.0000**	**0.1208**	**0.1208**						

	ROG	NOx	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	4/1/2019	5/1/2019	5	23	
2	Grading	Grading	5/2/2019	1/2/2020	5	176	
3	Paving	Paving	1/3/2020	1/23/2020	5	15	
4	Building Construction	Building Construction	1/24/2020	1/21/2022	5	521	
5	Architectural Coating	Architectural Coating	2/7/2020	2/4/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 965,925; Residential Outdoor: 321,975; Non-Residential Indoor: 346,302; Non-Residential Outdoor: 115,434 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	192.00	66.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784						
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0452	0.0592	0.5718	1.5300e-003	0.1369	9.4000e-004	0.1379	0.0363	8.7000e-004	0.0372						
Total	**0.0452**	**0.0592**	**0.5718**	**1.5300e-003**	**0.1369**	**9.4000e-004**	**0.1379**	**0.0363**	**8.7000e-004**	**0.0372**						

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.0188	42.5046	34.8088	0.0391		2.1505	2.1505		1.9784	1.9784						
Total	**4.0188**	**42.5046**	**34.8088**	**0.0391**	**18.0663**	**2.1505**	**20.2167**	**9.9307**	**1.9784**	**11.9091**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0452	0.0592	0.5718	1.5300e-003	0.1369	9.4000e-004	0.1379	0.0363	8.7000e-004	0.0372						
Total	**0.0452**	**0.0592**	**0.5718**	**1.5300e-003**	**0.1369**	**9.4000e-004**	**0.1379**	**0.0363**	**8.7000e-004**	**0.0372**						

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045						
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.6548**	**2.5049**	**9.1597**	**3.3785**	**2.3045**	**5.6831**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0502	0.0658	0.6354	1.7000e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0502**	**0.0658**	**0.6354**	**1.7000e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2019

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.8912	54.1978	40.2888	0.0617		2.5049	2.5049		2.3045	2.3045						
Total	**4.8912**	**54.1978**	**40.2888**	**0.0617**	**6.6548**	**2.5049**	**9.1597**	**3.3785**	**2.3045**	**5.6831**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0502	0.0658	0.6354	1.7000e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0502**	**0.0658**	**0.6354**	**1.7000e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2020

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810						
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**6.6548**	**2.2619**	**8.9167**	**3.3785**	**2.0810**	**5.4595**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0468	0.0609	0.5890	1.7000e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0468**	**0.0609**	**0.5890**	**1.7000e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.3 Grading - 2020

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					6.6548	0.0000	6.6548	3.3785	0.0000	3.3785						
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810						
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**6.6548**	**2.2619**	**8.9167**	**3.3785**	**2.0810**	**5.4595**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0468	0.0609	0.5890	1.7000e-003	0.1521	1.0500e-003	0.1532	0.0404	9.7000e-004	0.0413						
Total	**0.0468**	**0.0609**	**0.5890**	**1.7000e-003**	**0.1521**	**1.0500e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**						

3.4 Paving - 2020

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	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0351	0.0457	0.4418	1.2700e-003	0.1141	7.8000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0351**	**0.0457**	**0.4418**	**1.2700e-003**	**0.1141**	**7.8000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.4 Paving - 2020

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	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0351	0.0457	0.4418	1.2700e-003	0.1141	7.8000e-004	0.1149	0.0303	7.3000e-004	0.0310						
Total	**0.0351**	**0.0457**	**0.4418**	**1.2700e-003**	**0.1141**	**7.8000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.5467	3.5715	10.3721	0.0136	0.3879	0.0563	0.4442	0.1104	0.0518	0.1623						
Worker	0.4495	0.5844	5.6545	0.0163	1.4605	0.0100	1.4706	0.3874	9.3100e-003	0.3967						
Total	**0.9962**	**4.1558**	**16.0266**	**0.0299**	**1.8484**	**0.0664**	**1.9148**	**0.4979**	**0.0611**	**0.5590**						

3.5 Building Construction - 2020

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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465						
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**						

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						
Vendor	0.5467	3.5715	10.3721	0.0136	0.3879	0.0563	0.4442	0.1104	0.0518	0.1623						
Worker	0.4495	0.5844	5.6545	0.0163	1.4605	0.0100	1.4706	0.3874	9.3100e-003	0.3967						
Total	**0.9962**	**4.1558**	**16.0266**	**0.0299**	**1.8484**	**0.0664**	**1.9148**	**0.4979**	**0.0611**	**0.5590**						

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979						
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**						

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						
Vendor	0.4962	2.9912	9.9430	0.0136	0.3880	0.0507	0.4387	0.1105	0.0467	0.1572						
Worker	0.4238	0.5457	5.2904	0.0163	1.4605	0.0101	1.4706	0.3874	9.3600e-003	0.3968						
Total	**0.9200**	**3.5369**	**15.2334**	**0.0299**	**1.8485**	**0.0608**	**1.9093**	**0.4979**	**0.0560**	**0.5539**						

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979						
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**						

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						
Vendor	0.4962	2.9912	9.9430	0.0136	0.3880	0.0507	0.4387	0.1105	0.0467	0.1572						
Worker	0.4238	0.5457	5.2904	0.0163	1.4605	0.0101	1.4706	0.3874	9.3600e-003	0.3968						
Total	**0.9200**	**3.5369**	**15.2334**	**0.0299**	**1.8485**	**0.0608**	**1.9093**	**0.4979**	**0.0560**	**0.5539**						

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581						
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**						

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						
Vendor	0.4789	2.6786	9.6181	0.0136	0.3881	0.0498	0.4379	0.1105	0.0458	0.1564						
Worker	0.4012	0.5124	4.9696	0.0163	1.4605	0.0102	1.4707	0.3874	9.4200e-003	0.3968						
Total	**0.8801**	**3.1910**	**14.5877**	**0.0299**	**1.8487**	**0.0600**	**1.9086**	**0.4980**	**0.0552**	**0.5532**						

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581						
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**						

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						
Vendor	0.4789	2.6786	9.6181	0.0136	0.3881	0.0498	0.4379	0.1105	0.0458	0.1564						
Worker	0.4012	0.5124	4.9696	0.0163	1.4605	0.0102	1.4707	0.3874	9.4200e-003	0.3968						
Total	**0.8801**	**3.1910**	**14.5877**	**0.0299**	**1.8487**	**0.0600**	**1.9086**	**0.4980**	**0.0552**	**0.5532**						

3.6 Architectural Coating - 2020

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	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**17.8614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0890	0.1157	1.1191	3.2200e-003	0.2891	1.9900e-003	0.2911	0.0767	1.8400e-003	0.0785						
Total	**0.0890**	**0.1157**	**1.1191**	**3.2200e-003**	**0.2891**	**1.9900e-003**	**0.2911**	**0.0767**	**1.8400e-003**	**0.0785**						

3.6 Architectural Coating - 2020

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	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109						
Total	**17.8614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0890	0.1157	1.1191	3.2200e-003	0.2891	1.9900e-003	0.2911	0.0767	1.8400e-003	0.0785						
Total	**0.0890**	**0.1157**	**1.1191**	**3.2200e-003**	**0.2891**	**1.9900e-003**	**0.2911**	**0.0767**	**1.8400e-003**	**0.0785**						

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941						
Total	**17.8382**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0839	0.1080	1.0471	3.2200e-003	0.2891	2.0000e-003	0.2911	0.0767	1.8500e-003	0.0785						
Total	**0.0839**	**0.1080**	**1.0471**	**3.2200e-003**	**0.2891**	**2.0000e-003**	**0.2911**	**0.0767**	**1.8500e-003**	**0.0785**						

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941						
Total	**17.8382**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0839	0.1080	1.0471	3.2200e-003	0.2891	2.0000e-003	0.2911	0.0767	1.8500e-003	0.0785						
Total	**0.0839**	**0.1080**	**1.0471**	**3.2200e-003**	**0.2891**	**2.0000e-003**	**0.2911**	**0.0767**	**1.8500e-003**	**0.0785**						

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**17.8238**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0794	0.1014	0.9836	3.2200e-003	0.2891	2.0100e-003	0.2911	0.0767	1.8600e-003	0.0785						
Total	**0.0794**	**0.1014**	**0.9836**	**3.2200e-003**	**0.2891**	**2.0100e-003**	**0.2911**	**0.0767**	**1.8600e-003**	**0.0785**						

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.6193					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**17.8238**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0794	0.1014	0.9836	3.2200e-003	0.2891	2.0100e-003	0.2911	0.0767	1.8600e-003	0.0785						
Total	**0.0794**	**0.1014**	**0.9836**	**3.2200e-003**	**0.2891**	**2.0100e-003**	**0.2911**	**0.0767**	**1.8600e-003**	**0.0785**						

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504022	0.068097	0.178374	0.146657	0.044463	0.006402	0.021337	0.017008	0.002323	0.002278	0.006305	0.000550	0.002185

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						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

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					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
City Park	0	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**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	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**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Unmitigated	18.1074	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						

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	2.2951					0.0000	0.0000		0.0000	0.0000						
Consumer Products	15.1484					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						
Landscaping	0.6639	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**		**0.1208**	**0.1208**		**0.1208**	**0.1208**						

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	2.2951					0.0000	0.0000		0.0000	0.0000						
Consumer Products	15.1484					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						
Landscaping	0.6639	0.2529	21.9109	1.1500e-003		0.1208	0.1208		0.1208	0.1208						
Total	**18.1074**	**0.2529**	**21.9109**	**1.1500e-003**		**0.1208**	**0.1208**		**0.1208**	**0.1208**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Operational AQ - Proposed Project

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	8.90	Acre	8.90	387,684.00	0
Single Family Housing	761.00	Dwelling Unit	184.30	1,369,800.00	2032
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	247.08	184.30
tblProjectCharacteristics	OperationalYear	2014	2022
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	HO_TL	6.50	17.29
tblVehicleTrips	HS_TL	5.00	13.30
tblVehicleTrips	HW_TL	10.00	26.60

2.0 Emissions Summary

	ROG	NOx	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**

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	52.3315	0.8340	72.3286	3.8200e-003		0.3995	0.3995		0.3995	0.3995						
Energy	0.8550	7.3191	3.2040	0.0466		0.5907	0.5907		0.5907	0.5907						
Mobile	38.4823	99.6871	586.5800	2.0050	136.7738	1.9505	138.7243	36.5398	1.8001	38.3399						
Total	**91.6688**	**107.8402**	**662.1126**	**2.0554**	**136.7738**	**2.9407**	**139.7145**	**36.5398**	**2.7903**	**39.3301**						

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	48.4654	0.6694	56.0760	2.6000e-003		0.2995	0.2995		0.2995	0.2995						
Energy	0.6798	5.8193	2.5443	0.0371		0.4697	0.4697		0.4697	0.4697						
Mobile	38.4823	99.6871	586.5800	2.0050	136.7738	1.9505	138.7243	36.5398	1.8001	38.3399						
Total	**87.6275**	**106.1757**	**645.2003**	**2.0447**	**136.7738**	**2.7196**	**139.4934**	**36.5398**	**2.5693**	**39.1091**						

	ROG	NOx	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	4.41	1.54	2.55	0.52	0.00	7.52	0.16	0.00	7.92	0.56	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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					
Unmitigated	38.4823	99.6871	586.5800	2.0050	136.7738	1.9505	138.7243	36.5398	1.8001	38.3399						
Mitigated	38.4823	99.6871	586.5800	2.0050	136.7738	1.9505	138.7243	36.5398	1.8001	38.3399						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	14.15	14.15	14.15	69,396	69,396
Elementary School	774.00	0.00	0.00	3,088,444	3,088,444
Single Family Housing	7,282.77	7,670.88	6673.97	49,482,751	49,482,751
Single Family Housing	1,090.98	1,149.12	999.78	7,412,659	7,412,659
Total	9,161.90	8,834.15	7,687.90	60,053,250	60,053,250

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
City Park	26.60	13.30	17.29	33.00	48.00	19.00	66	28	6
Elementary School	26.60	13.30	17.29	65.00	30.00	5.00	63	25	12
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504412	0.068359	0.177824	0.146424	0.044337	0.006430	0.021426	0.017091	0.002334	0.002281	0.006349	0.000546	0.002188

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.6798	5.8193	2.5443	0.0371		0.4697	0.4697		0.4697	0.4697						
NaturalGas Unmitigated	0.8550	7.3191	3.2040	0.0466		0.5907	0.5907		0.5907	0.5907						

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	2203.01	0.0238	0.2160	0.1814	1.3000e-003		0.0164	0.0164		0.0164	0.0164						
Single Family Housing	10041.9	0.1083	0.9254	0.3938	5.9100e-003		0.0748	0.0748		0.0748	0.0748						
Single Family Housing	67034.2	0.7229	6.1777	2.6288	0.0394		0.4995	0.4995		0.4995	0.4995						
Total		**0.8550**	**7.3191**	**3.2040**	**0.0466**		**0.5907**	**0.5907**		**0.5907**	**0.5907**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	1.67493	0.0181	0.1642	0.1379	9.9000e-004		0.0125	0.0125		0.0125	0.0125						
Single Family Housing	53.3685	0.5755	4.9183	2.0929	0.0314		0.3977	0.3977		0.3977	0.3977						
Single Family Housing	7.99476	0.0862	0.7368	0.3135	4.7000e-003		0.0596	0.0596		0.0596	0.0596						
Total		**0.6798**	**5.8193**	**2.5443**	**0.0371**		**0.4697**	**0.4697**		**0.4697**	**0.4697**						

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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					
Unmitigated	52.3315	0.8340	72.3286	3.8200e-003		0.3995	0.3995		0.3995	0.3995						
Mitigated	48.4654	0.6694	56.0760	2.6000e-003		0.2995	0.2995		0.2995	0.2995						

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	7.0681					0.0000	0.0000		0.0000	0.0000						
Consumer Products	43.0749					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						
Landscaping	2.1885	0.8340	72.3286	3.8200e-003		0.3995	0.3995		0.3995	0.3995						
Total	**52.3315**	**0.8340**	**72.3286**	**3.8200e-003**		**0.3995**	**0.3995**		**0.3995**	**0.3995**						

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	7.0681					0.0000	0.0000		0.0000	0.0000						
Consumer Products	39.8544					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						
Landscaping	1.5430	0.6694	56.0760	2.6000e-003		0.2995	0.2995		0.2995	0.2995						
Total	**48.4654**	**0.6694**	**56.0760**	**2.6000e-003**		**0.2995**	**0.2995**		**0.2995**	**0.2995**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Proposed Project (DEFAULT VMT)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	8.90	Acre	8.90	387,684.00	0
Single Family Housing	761.00	Dwelling Unit	184.30	1,369,800.00	2032
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips -

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	247.08	184.30
tblProjectCharacteristics	OperationalYear	2014	2022

2.0 Emissions Summary

	ROG	NOx	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**

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	9.4247	0.1043	9.0411	4.8000e-004		0.0499	0.0499		0.0499	0.0499						
Energy	0.1560	1.3357	0.5847	8.5100e-003		0.1078	0.1078		0.1078	0.1078						
Mobile	3.9649	7.8572	40.8353	0.1199	8.4083	0.1333	8.5416	2.2528	0.1231	2.3758						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**13.5456**	**9.2971**	**50.4611**	**0.1289**	**8.4083**	**0.2910**	**8.6994**	**2.2528**	**0.2808**	**2.5336**						

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	8.7562	0.0837	7.0095	3.2000e-004		0.0374	0.0374		0.0374	0.0374						
Energy	0.1241	1.0620	0.4643	6.7700e-003		0.0857	0.0857		0.0857	0.0857						
Mobile	3.9649	7.8572	40.8353	0.1199	8.4083	0.1333	8.5416	2.2528	0.1231	2.3758						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**12.8452**	**9.0028**	**48.3092**	**0.1270**	**8.4083**	**0.2565**	**8.6648**	**2.2528**	**0.2462**	**2.4990**						

	ROG	NOx	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	**5.17**	**3.17**	**4.26**	**1.47**	**0.00**	**11.88**	**0.40**	**0.00**	**12.32**	**1.37**	**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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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	tons/yr										MT/yr					
Mitigated	3.9649	7.8572	40.8353	0.1199	8.4083	0.1333	8.5416	2.2528	0.1231	2.3758						
Unmitigated	3.9649	7.8572	40.8353	0.1199	8.4083	0.1333	8.5416	2.2528	0.1231	2.3758						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	14.15	14.15	14.15	26,108	26,108
Elementary School	774.00	0.00	0.00	1,162,576	1,162,576
Single Family Housing	7,282.77	7,670.88	6673.97	18,607,480	18,607,480
Single Family Housing	1,090.98	1,149.12	999.78	2,787,454	2,787,454
Total	9,161.90	8,834.15	7,687.90	22,583,618	22,583,618

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
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Elementary School	10.00	5.00	6.50	65.00	30.00	5.00	63	25	12
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504412	0.068359	0.177824	0.146424	0.044337	0.006430	0.021426	0.017091	0.002334	0.002281	0.006349	0.000546	0.002188

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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					
NaturalGas Mitigated	0.1241	1.0620	0.4643	6.7700e-003		0.0857	0.0857		0.0857	0.0857						
NaturalGas Unmitigated	0.1560	1.3357	0.5847	8.5100e-003		0.1078	0.1078		0.1078	0.1078						
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	804097	4.3400e-003	0.0394	0.0331	2.4000e-004		3.0000e-003	3.0000e-003		3.0000e-003	3.0000e-003						
Single Family Housing	2.44675e+007	0.1319	1.1274	0.4798	7.2000e-003		0.0912	0.0912		0.0912	0.0912						
Single Family Housing	3.6653e+006	0.0198	0.1689	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
Total		**0.1560**	**1.3357**	**0.5847**	**8.5200e-003**		**0.1078**	**0.1078**		**0.1078**	**0.1078**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	611350	3.3000e-003	0.0300	0.0252	1.8000e-004		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003						
Single Family Housing	1.94795e+007	0.1050	0.8976	0.3820	5.7300e-003		0.0726	0.0726		0.0726	0.0726						
Single Family Housing	2.91809e+006	0.0157	0.1345	0.0572	8.6000e-004		0.0109	0.0109		0.0109	0.0109						
Total		**0.1241**	**1.0620**	**0.4643**	**6.7700e-003**		**0.0857**	**0.0857**		**0.0857**	**0.0857**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				
Elementary School	412833				
Single Family Housing	5.65979e+006				
Single Family Housing	847852				
Total					

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				
Elementary School	381357				
Single Family Housing	5.52098e +006				
Single Family Housing	827058				
Total					

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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	8.7562	0.0837	7.0095	3.2000e-004		0.0374	0.0374		0.0374	0.0374						
Unmitigated	9.4247	0.1043	9.0411	4.8000e-004		0.0499	0.0499		0.0499	0.0499						

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	1.2899					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.8612					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						
Landscaping	0.2736	0.1043	9.0411	4.8000e-004		0.0499	0.0499		0.0499	0.0499						
Total	**9.4247**	**0.1043**	**9.0411**	**4.8000e-004**		**0.0499**	**0.0499**		**0.0499**	**0.0499**						

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	1.2899					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.2734					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						
Landscaping	0.1929	0.0837	7.0095	3.2000e-004		0.0374	0.0374		0.0374	0.0374						
Total	**8.7562**	**0.0837**	**7.0095**	**3.2000e-004**		**0.0374**	**0.0374**		**0.0374**	**0.0374**						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated				
Mitigated				

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042				
Elementary School	1.45454 / 3.74026				
Single Family Housing	57.0098 / 35.9409				
Total					

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042				
Elementary School	1.45454 / 3.74026				
Single Family Housing	57.0098 / 35.9409				
Total					

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				
Unmitigated				

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77				
Elementary School	109.5				
Single Family Housing	840.96				
Total					

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77				
Elementary School	109.5				
Single Family Housing	840.96				
Total					

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Operational AQ - Proposed Project

Sacramento County, Mitigation Report

Construction Mitigation Summary

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

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

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

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	29.50	19.74	22.47	33.33	25.05	25.05	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	20.48	20.49	20.59	20.54	20.49	20.49	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.16	0.41		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	% Electric Lawnmower	100.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	25.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Russel Ranch - Operational AQ - As Approved

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	10.00	50,162.02	0
City Park	6.50	Acre	6.50	283,140.00	0
Single Family Housing	574.00	Dwelling Unit	191.60	1,033,200.00	1533
Single Family Housing	139.00	Dwelling Unit	15.20	250,200.00	371
Apartments Low Rise	406.00	Dwelling Unit	22.20	406,000.00	1084
Regional Shopping Center	380.06	1000sqft	8.72	380,061.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	10.00
tblLandUse	LotAcreage	45.13	15.20
tblLandUse	LotAcreage	186.36	191.60
tblLandUse	LotAcreage	25.38	22.20
tblProjectCharacteristics	OperationalYear	2014	2022
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	HO_TL	6.50	17.75
tblVehicleTrips	HO_TL	6.50	17.75
tblVehicleTrips	HS_TL	5.00	13.65
tblVehicleTrips	HS_TL	5.00	13.65
tblVehicleTrips	HW_TL	10.00	27.30
tblVehicleTrips	HW_TL	10.00	27.30

2.0 Emissions Summary

	ROG	NOx	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**

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	62.7299	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Energy	0.9273	7.9714	3.7207	0.0506		0.6407	0.6407		0.6407	0.6407						
Mobile	104.1664	235.0916	1,385.6210	4.5996	312.4039	4.5260	316.9299	83.4602	4.1774	87.6377						
Total	**167.8235**	**244.1298**	**1,481.8608**	**4.6550**	**312.4039**	**5.6777**	**318.0815**	**83.4602**	**5.3291**	**88.7893**						

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	58.0596	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						
Energy	0.7370	6.3356	2.9532	0.0402		0.5092	0.5092		0.5092	0.5092						
Mobile	104.1664	235.0916	1,385.6210	4.5996	312.4039	4.5260	316.9299	83.4602	4.1774	87.6377						
Total	**162.9630**	**242.2833**	**1,460.3023**	**4.6431**	**312.4039**	**5.4183**	**317.8221**	**83.4602**	**5.0697**	**88.5299**						

	ROG	NOx	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	2.90	0.76	1.45	0.26	0.00	4.57	0.08	0.00	4.87	0.29	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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					
Unmitigated	104.1664	235.0916	1,385.6210	4.5996	312.4039	4.5260	316.9299	83.4602	4.1774	87.6377						
Mitigated	104.1664	235.0916	1,385.6210	4.5996	312.4039	4.5260	316.9299	83.4602	4.1774	87.6377						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	10.34	10.34	10.34	52,018	52,018
Elementary School	774.00	0.00	0.00	3,169,690	3,169,690
Single Family Housing	5,493.18	5,785.92	5033.98	38,309,049	38,309,049
Single Family Housing	1,330.23	1,401.12	1219.03	9,276,930	9,276,930
Apartments Low Rise	2,675.54	2,906.96	2464.42	18,760,465	18,760,465
Regional Shopping Center	16,319.82	18,991.65	9592.74	59,938,757	59,938,757
Total	26,603.10	29,095.98	18,320.50	129,506,908	129,506,908

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
City Park	27.30	13.65	17.75	33.00	48.00	19.00	66	28	6
Elementary School	27.30	13.65	17.75	65.00	30.00	5.00	63	25	12
Single Family Housing	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Single Family Housing	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Apartments Low Rise	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Regional Shopping Center	27.30	13.65	17.75	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504412	0.068359	0.177824	0.146424	0.044337	0.006430	0.021426	0.017091	0.002334	0.002281	0.006349	0.000546	0.002188

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.7370	6.3356	2.9532	0.0402		0.5092	0.5092		0.5092	0.5092						
NaturalGas Unmitigated	0.9273	7.9714	3.7207	0.0506		0.6407	0.6407		0.6407	0.6407						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	15089.9	0.1627	1.3906	0.5918	8.8800e-003		0.1124	0.1124		0.1124	0.1124						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	2203.01	0.0238	0.2160	0.1814	1.3000e-003		0.0164	0.0164		0.0164	0.0164						
Regional Shopping Center	5883.14	0.0635	0.5768	0.4845	3.4600e-003		0.0438	0.0438		0.0438	0.0438						
Single Family Housing	12244.1	0.1320	1.1284	0.4802	7.2000e-003		0.0912	0.0912		0.0912	0.0912						
Single Family Housing	50562	0.5453	4.6596	1.9828	0.0297		0.3767	0.3767		0.3767	0.3767						
Total		**0.9273**	**7.9714**	**3.7207**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	12.0121	0.1295	1.1070	0.4711	7.0700e-003		0.0895	0.0895		0.0895	0.0895						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	1.67493	0.0181	0.1642	0.1379	9.9000e-004		0.0125	0.0125		0.0125	0.0125						
Regional Shopping Center	4.65445	0.0502	0.4563	0.3833	2.7400e-003		0.0347	0.0347		0.0347	0.0347						
Single Family Housing	40.2543	0.4341	3.7097	1.5786	0.0237		0.2999	0.2999		0.2999	0.2999						
Single Family Housing	9.748	0.1051	0.8984	0.3823	5.7300e-003		0.0726	0.0726		0.0726	0.0726						
Total		**0.7371**	**6.3356**	**2.9532**	**0.0402**		**0.5092**	**0.5092**		**0.5092**	**0.5092**						

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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					
Unmitigated	62.7299	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Mitigated	58.0596	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						

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	8.5100					0.0000	0.0000		0.0000	0.0000						
Consumer Products	51.4191					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						
Landscaping	2.8008	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Total	**62.7299**	**1.0668**	**92.5192**	**4.8800e-003**		**0.5110**	**0.5110**		**0.5110**	**0.5110**						

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	8.5100					0.0000	0.0000		0.0000	0.0000						
Consumer Products	47.5747					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						
Landscaping	1.9749	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						
Total	**58.0596**	**0.8562**	**71.7281**	**3.3200e-003**		**0.3830**	**0.3830**		**0.3830**	**0.3830**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Operational AQ - As Approved (DEFAULT VMT)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	10.00	50,162.02	0
City Park	6.50	Acre	6.50	283,140.00	0
Single Family Housing	574.00	Dwelling Unit	191.60	1,033,200.00	1533
Single Family Housing	139.00	Dwelling Unit	15.20	250,200.00	371
Apartments Low Rise	406.00	Dwelling Unit	22.20	406,000.00	1084
Regional Shopping Center	380.06	1000sqft	8.72	380,061.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	10.00
tblLandUse	LotAcreage	45.13	15.20
tblLandUse	LotAcreage	186.36	191.60
tblLandUse	LotAcreage	25.38	22.20
tblProjectCharacteristics	OperationalYear	2014	2022

2.0 Emissions Summary

	ROG	NOx	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**

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	62.7299	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Energy	0.9273	7.9714	3.7207	0.0506		0.6407	0.6407		0.6407	0.6407						
Mobile	77.0350	103.8590	617.4416	1.7343	114.5467	1.8290	116.3757	30.6017	1.6888	32.2905						
Total	**140.6921**	**112.8971**	**713.6815**	**1.7898**	**114.5467**	**2.9807**	**117.5273**	**30.6017**	**2.8404**	**33.4421**						

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	58.0596	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						
Energy	0.7370	6.3356	2.9532	0.0402		0.5092	0.5092		0.5092	0.5092						
Mobile	77.0350	103.8590	617.4416	1.7343	114.5467	1.8290	116.3757	30.6017	1.6888	32.2905						
Total	**135.8316**	**111.0507**	**692.1229**	**1.7778**	**114.5467**	**2.7213**	**117.2679**	**30.6017**	**2.5810**	**33.1827**						

	ROG	NOx	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	3.45	1.64	3.02	0.67	0.00	8.70	0.22	0.00	9.13	0.78	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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					
Unmitigated	77.0350	103.8590	617.4416	1.7343	114.5467	1.8290	116.3757	30.6017	1.6888	32.2905						
Mitigated	77.0350	103.8590	617.4416	1.7343	114.5467	1.8290	116.3757	30.6017	1.6888	32.2905						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	10.34	10.34	10.34	19,068	19,068
Elementary School	774.00	0.00	0.00	1,162,576	1,162,576
Single Family Housing	5,493.18	5,785.92	5033.98	14,035,077	14,035,077
Single Family Housing	1,330.23	1,401.12	1219.03	3,398,738	3,398,738
Apartments Low Rise	2,675.54	2,906.96	2464.42	6,873,169	6,873,169
Regional Shopping Center	16,319.82	18,991.65	9592.74	21,994,276	21,994,276
Total	26,603.10	29,095.98	18,320.50	47,482,904	47,482,904

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
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Elementary School	10.00	5.00	6.50	65.00	30.00	5.00	63	25	12
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504412	0.068359	0.177824	0.146424	0.044337	0.006430	0.021426	0.017091	0.002334	0.002281	0.006349	0.000546	0.002188

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.7370	6.3356	2.9532	0.0402		0.5092	0.5092		0.5092	0.5092						
NaturalGas Unmitigated	0.9273	7.9714	3.7207	0.0506		0.6407	0.6407		0.6407	0.6407						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	15089.9	0.1627	1.3906	0.5918	8.8800e-003		0.1124	0.1124		0.1124	0.1124						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	2203.01	0.0238	0.2160	0.1814	1.3000e-003		0.0164	0.0164		0.0164	0.0164						
Regional Shopping Center	5883.14	0.0635	0.5768	0.4845	3.4600e-003		0.0438	0.0438		0.0438	0.0438						
Single Family Housing	12244.1	0.1320	1.1284	0.4802	7.2000e-003		0.0912	0.0912		0.0912	0.0912						
Single Family Housing	50562	0.5453	4.6596	1.9828	0.0297		0.3767	0.3767		0.3767	0.3767						
Total		**0.9273**	**7.9714**	**3.7207**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	12.0121	0.1295	1.1070	0.4711	7.0700e-003		0.0895	0.0895		0.0895	0.0895						
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	1.67493	0.0181	0.1642	0.1379	9.9000e-004		0.0125	0.0125		0.0125	0.0125						
Regional Shopping Center	4.65445	0.0502	0.4563	0.3833	2.7400e-003		0.0347	0.0347		0.0347	0.0347						
Single Family Housing	40.2543	0.4341	3.7097	1.5786	0.0237		0.2999	0.2999		0.2999	0.2999						
Single Family Housing	9.748	0.1051	0.8984	0.3823	5.7300e-003		0.0726	0.0726		0.0726	0.0726						
Total		**0.7371**	**6.3356**	**2.9532**	**0.0402**		**0.5092**	**0.5092**		**0.5092**	**0.5092**						

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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					
Unmitigated	62.7299	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Mitigated	58.0596	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						

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	8.5100					0.0000	0.0000		0.0000	0.0000						
Consumer Products	51.4191					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						
Landscaping	2.8008	1.0668	92.5192	4.8800e-003		0.5110	0.5110		0.5110	0.5110						
Total	**62.7299**	**1.0668**	**92.5192**	**4.8800e-003**		**0.5110**	**0.5110**		**0.5110**	**0.5110**						

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	8.5100					0.0000	0.0000		0.0000	0.0000						
Consumer Products	47.5747					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						
Landscaping	1.9749	0.8562	71.7281	3.3200e-003		0.3830	0.3830		0.3830	0.3830						
Total	**58.0596**	**0.8562**	**71.7281**	**3.3200e-003**		**0.3830**	**0.3830**		**0.3830**	**0.3830**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction GHG - Phase 1

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	3.20	Acre	3.20	139,392.00	0
Single Family Housing	250.00	Dwelling Unit	60.53	450,000.00	668
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2020
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	110.00	523.00
tblConstructionPhase	NumDays	1,550.00	523.00
tblConstructionPhase	NumDays	155.00	262.00
tblConstructionPhase	NumDays	110.00	20.00
tblConstructionPhase	NumDays	60.00	23.00
tblConstructionPhase	PhaseEndDate	6/8/2020	6/20/2018
tblConstructionPhase	PhaseStartDate	6/7/2018	6/20/2016
tblEnergyUse	LightingElect	3.55	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	2.17	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	0.66	0.00

tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	2.51	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	15.37	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	655.00	135.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	81.17	60.53
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	109.50	0.00
tblSolidWaste	SolidWasteGenerationRate	349.92	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	1.29	0.00

tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	1,454,544.00	0.00
tblWater	IndoorWaterUseRate	23,716,065.33	0.00
tblWater	OutdoorWaterUseRate	3,812,740.32	0.00
tblWater	OutdoorWaterUseRate	3,740,256.00	0.00
tblWater	OutdoorWaterUseRate	14,951,432.49	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015											0.0000	559.0402	559.0402	0.1637	0.0000	562.4787
2016											0.0000	714.3102	714.3102	0.1411	0.0000	717.2733
2017											0.0000	720.4017	720.4017	0.0919	0.0000	722.3320
2018											0.0000	309.3584	309.3584	0.0390	0.0000	310.1782
Total											**0.0000**	**2,303.1104**	**2,303.1104**	**0.4358**	**0.0000**	**2,312.2621**

2.1 Overall Construction

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					
2015											0.0000	559.0395	559.0395	0.1637	0.0000	562.4781
2016											0.0000	714.3096	714.3096	0.1411	0.0000	717.2727
2017											0.0000	720.4013	720.4013	0.0919	0.0000	722.3316
2018											0.0000	309.3582	309.3582	0.0390	0.0000	310.1780
Total											**0.0000**	**2,303.1086**	**2,303.1086**	**0.4358**	**0.0000**	**2,312.2603**

	ROG	NOx	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**

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											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**6.1468**	**6.1468**	**6.0200e-003**	**0.0000**	**6.2732**

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											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**6.1468**	**6.1468**	**6.0200e-003**	**0.0000**	**6.2732**

	ROG	NOx	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	4/6/2015	5/6/2015	5	23	
2	Grading	Grading	5/7/2015	5/6/2016	5	262	
3	Paving	Paving	5/7/2016	6/3/2016	5	20	
4	Building Construction	Building Construction	6/4/2016	6/6/2018	5	523	
5	Architectural Coating	Architectural Coating	6/20/2016	6/20/2018	5	523	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 135

Acres of Paving: 0

Residential Indoor: 1,326,780; Residential Outdoor: 442,260; Non-Residential Indoor: 284,331; Non-Residential Outdoor: 94,777 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	42.8963	42.8963	0.0128	0.0000	43.1652
Total											**0.0000**	**42.8963**	**42.8963**	**0.0128**	**0.0000**	**43.1652**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4084	1.4084	8.0000e-005	0.0000	1.4101
Total											**0.0000**	**1.4084**	**1.4084**	**8.0000e-005**	**0.0000**	**1.4101**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	42.8962	42.8962	0.0128	0.0000	43.1652
Total											**0.0000**	**42.8962**	**42.8962**	**0.0128**	**0.0000**	**43.1652**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4084	1.4084	8.0000e-005	0.0000	1.4101
Total											**0.0000**	**1.4084**	**1.4084**	**8.0000e-005**	**0.0000**	**1.4101**

3.3 Grading - 2015

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	503.1009	503.1009	0.1502	0.0000	506.2550
Total											**0.0000**	**503.1009**	**503.1009**	**0.1502**	**0.0000**	**506.2550**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	11.6346	11.6346	6.6000e-004	0.0000	11.6484
Total											**0.0000**	**11.6346**	**11.6346**	**6.6000e-004**	**0.0000**	**11.6484**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	503.1003	503.1003	0.1502	0.0000	506.2544
Total											**0.0000**	**503.1003**	**503.1003**	**0.1502**	**0.0000**	**506.2544**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	11.6346	11.6346	6.6000e-004	0.0000	11.6484
Total											**0.0000**	**11.6346**	**11.6346**	**6.6000e-004**	**0.0000**	**11.6484**

3.3 Grading - 2016

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	264.7906	264.7906	0.0799	0.0000	266.4678
Total											**0.0000**	**264.7906**	**264.7906**	**0.0799**	**0.0000**	**266.4678**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	5.9647	5.9647	3.2000e-004	0.0000	5.9713
Total											**0.0000**	**5.9647**	**5.9647**	**3.2000e-004**	**0.0000**	**5.9713**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	264.7902	264.7902	0.0799	0.0000	266.4675
Total											**0.0000**	**264.7902**	**264.7902**	**0.0799**	**0.0000**	**266.4675**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	5.9647	5.9647	3.2000e-004	0.0000	5.9713
Total											**0.0000**	**5.9647**	**5.9647**	**3.2000e-004**	**0.0000**	**5.9713**

3.4 Paving - 2016

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											0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.9832	0.9832	5.0000e-005	0.0000	0.9843
Total											**0.0000**	**0.9832**	**0.9832**	**5.0000e-005**	**0.0000**	**0.9843**

3.4 Paving - 2016

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											0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.9832	0.9832	5.0000e-005	0.0000	0.9843
Total											**0.0000**	**0.9832**	**0.9832**	**5.0000e-005**	**0.0000**	**0.9843**

3.5 Building Construction - 2016

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											0.0000	181.6152	181.6152	0.0450	0.0000	182.5611
Total											**0.0000**	**181.6152**	**181.6152**	**0.0450**	**0.0000**	**182.5611**

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
Vendor											0.0000	99.0738	99.0738	7.9000e-004	0.0000	99.0904
Worker											0.0000	103.7258	103.7258	5.5400e-003	0.0000	103.8423
Total											**0.0000**	**202.7997**	**202.7997**	**6.3300e-003**	**0.0000**	**202.9327**

3.5 Building Construction - 2016

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											0.0000	181.6150	181.6150	0.0450	0.0000	182.5609
Total											**0.0000**	**181.6150**	**181.6150**	**0.0450**	**0.0000**	**182.5609**

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
Vendor											0.0000	99.0738	99.0738	7.9000e-004	0.0000	99.0904
Worker											0.0000	103.7258	103.7258	5.5400e-003	0.0000	103.8423
Total											**0.0000**	**202.7997**	**202.7997**	**6.3300e-003**	**0.0000**	**202.9327**

3.5 Building Construction - 2017

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											0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total											**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

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
Vendor											0.0000	168.8355	168.8355	1.2800e-003	0.0000	168.8624
Worker											0.0000	172.6789	172.6789	8.7700e-003	0.0000	172.8630
Total											**0.0000**	**341.5144**	**341.5144**	**0.0101**	**0.0000**	**341.7254**

3.5 Building Construction - 2017

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											0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total											**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

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
Vendor											0.0000	168.8355	168.8355	1.2800e-003	0.0000	168.8624
Worker											0.0000	172.6789	172.6789	8.7700e-003	0.0000	172.8630
Total											**0.0000**	**341.5144**	**341.5144**	**0.0101**	**0.0000**	**341.7254**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	133.7749	133.7749	0.0327	0.0000	134.4624
Total											**0.0000**	**133.7749**	**133.7749**	**0.0327**	**0.0000**	**134.4624**

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
Vendor											0.0000	72.0231	72.0231	5.4000e-004	0.0000	72.0345
Worker											0.0000	72.2119	72.2119	3.5100e-003	0.0000	72.2855
Total											**0.0000**	**144.2350**	**144.2350**	**4.0500e-003**	**0.0000**	**144.3200**

3.5 Building Construction - 2018

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											0.0000	133.7747	133.7747	0.0327	0.0000	134.4622
Total											**0.0000**	**133.7747**	**133.7747**	**0.0327**	**0.0000**	**134.4622**

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
Vendor											0.0000	72.0231	72.0231	5.4000e-004	0.0000	72.0345
Worker											0.0000	72.2119	72.2119	3.5100e-003	0.0000	72.2855
Total											**0.0000**	**144.2350**	**144.2350**	**4.0500e-003**	**0.0000**	**144.3200**

3.6 Architectural Coating - 2016

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8728	17.8728	2.1100e-003	0.0000	17.9170
Total											**0.0000**	**17.8728**	**17.8728**	**2.1100e-003**	**0.0000**	**17.9170**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	19.2704	19.2704	1.0300e-003	0.0000	19.2920
Total											**0.0000**	**19.2704**	**19.2704**	**1.0300e-003**	**0.0000**	**19.2920**

3.6 Architectural Coating - 2016

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8728	17.8728	2.1100e-003	0.0000	17.9170
Total											**0.0000**	**17.8728**	**17.8728**	**2.1100e-003**	**0.0000**	**17.9170**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	19.2704	19.2704	1.0300e-003	0.0000	19.2920
Total											**0.0000**	**19.2704**	**19.2704**	**1.0300e-003**	**0.0000**	**19.2920**

3.6 Architectural Coating - 2017

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total											**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	34.3721	34.3721	1.7500e-003	0.0000	34.4088
Total											**0.0000**	**34.3721**	**34.3721**	**1.7500e-003**	**0.0000**	**34.4088**

3.6 Architectural Coating - 2017

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total											**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	34.3721	34.3721	1.7500e-003	0.0000	34.4088
Total											**0.0000**	**34.3721**	**34.3721**	**1.7500e-003**	**0.0000**	**34.4088**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	15.7025	15.7025	1.4900e-003	0.0000	15.7339
Total											**0.0000**	**15.7025**	**15.7025**	**1.4900e-003**	**0.0000**	**15.7339**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	15.6460	15.6460	7.6000e-004	0.0000	15.6619
Total											**0.0000**	**15.6460**	**15.6460**	**7.6000e-004**	**0.0000**	**15.6619**

3.6 Architectural Coating - 2018

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	15.7025	15.7025	1.4900e-003	0.0000	15.7339
Total											**0.0000**	**15.7025**	**15.7025**	**1.4900e-003**	**0.0000**	**15.7339**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	15.6460	15.6460	7.6000e-004	0.0000	15.6619
Total											**0.0000**	**15.6460**	**15.6460**	**7.6000e-004**	**0.0000**	**15.6619**

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	tons/yr										MT/yr					
Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Elementary School	0.00	0.00	0.00	65.00	30.00	5.00	63	25	12
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.503605	0.067800	0.178973	0.146934	0.044621	0.006359	0.021238	0.016884	0.002315	0.002275	0.006260	0.000554	0.002182

5.0 Energy Detail

4.4 Fleet Mix

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	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

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					
Elementary School	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

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					
Elementary School	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732
Unmitigated											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732
Total											**0.0000**	**6.1468**	**6.1468**	**6.0200e-003**	**0.0000**	**6.2732**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	6.1468	6.1468	6.0200e-003	0.0000	6.2732
Total											**0.0000**	**6.1468**	**6.1468**	**6.0200e-003**	**0.0000**	**6.2732**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Elementary School	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Elementary School	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction GHG - Phase 2

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.30	Acre	0.30	13,068.00	0
Single Family Housing	246.00	Dwelling Unit	59.56	442,800.00	657

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2020
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 2

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/24/2022	2/3/2020
tblConstructionPhase	PhaseStartDate	1/25/2020	2/5/2018
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	95.00

tblLandUse	LotAcreage	79.87	59.56
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblSolidWaste	SolidWasteGenerationRate	236.52	0.00
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CNW_TL	6.50	0.00
tblVehicleTrips	CW_TL	10.00	0.00
tblVehicleTrips	HO_TL	6.50	0.00
tblVehicleTrips	HS_TL	5.00	0.00
tblVehicleTrips	HW_TL	10.00	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	16,027,890.30	0.00
tblWater	OutdoorWaterUseRate	357,444.40	0.00
tblWater	OutdoorWaterUseRate	10,104,539.54	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	546.4494	546.4494	0.1643	0.0000	549.9003
2018											0.0000	488.2660	488.2660	0.0858	0.0000	490.0668
2019											0.0000	490.0194	490.0194	0.0817	0.0000	491.7346
2020											0.0000	34.2289	34.2289	5.6000e-003	0.0000	34.3466
Total											**0.0000**	**1,558.9637**	**1,558.9637**	**0.3374**	**0.0000**	**1,566.0483**

2.1 Overall Construction

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					
2017											0.0000	546.4487	546.4487	0.1643	0.0000	549.8997
2018											0.0000	488.2656	488.2656	0.0858	0.0000	490.0664
2019											0.0000	490.0190	490.0190	0.0817	0.0000	491.7342
2020											0.0000	34.2289	34.2289	5.6000e-003	0.0000	34.3466
Total											**0.0000**	**1,558.9622**	**1,558.9622**	**0.3374**	**0.0000**	**1,566.0468**

	ROG	NOx	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**

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											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**4.1440**	**4.1440**	**4.0400e-003**	**0.0000**	**4.2289**

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											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**4.1440**	**4.1440**	**4.0400e-003**	**0.0000**	**4.2289**

	ROG	NOx	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	4/3/2017	5/3/2017	5	23	
2	Grading	Grading	5/4/2017	1/4/2018	5	176	
3	Paving	Paving	1/5/2018	1/25/2018	5	15	
4	Building Construction	Building Construction	1/26/2018	1/24/2020	5	521	
5	Architectural Coating	Architectural Coating	2/5/2018	2/3/2020	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 95

Acres of Paving: 0

Residential Indoor: 896,670; Residential Outdoor: 298,890; Non-Residential Indoor: 19,602; Non-Residential Outdoor: 6,534 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	94.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	41.7627	41.7627	0.0128	0.0000	42.0314
Total											**0.0000**	**41.7627**	**41.7627**	**0.0128**	**0.0000**	**42.0314**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.3031	1.3031	7.0000e-005	0.0000	1.3045
Total											**0.0000**	**1.3031**	**1.3031**	**7.0000e-005**	**0.0000**	**1.3045**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	41.7626	41.7626	0.0128	0.0000	42.0314
Total											**0.0000**	**41.7626**	**41.7626**	**0.0128**	**0.0000**	**42.0314**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.3031	1.3031	7.0000e-005	0.0000	1.3045
Total											**0.0000**	**1.3031**	**1.3031**	**7.0000e-005**	**0.0000**	**1.3045**

3.3 Grading - 2017

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	492.5557	492.5557	0.1509	0.0000	495.7250
Total											**0.0000**	**492.5557**	**492.5557**	**0.1509**	**0.0000**	**495.7250**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	10.8278	10.8278	5.5000e-004	0.0000	10.8394
Total											**0.0000**	**10.8278**	**10.8278**	**5.5000e-004**	**0.0000**	**10.8394**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	492.5551	492.5551	0.1509	0.0000	495.7244
Total											**0.0000**	**492.5551**	**492.5551**	**0.1509**	**0.0000**	**495.7244**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	10.8278	10.8278	5.5000e-004	0.0000	10.8394
Total											**0.0000**	**10.8278**	**10.8278**	**5.5000e-004**	**0.0000**	**10.8394**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	11.2723	11.2723	3.5100e-003	0.0000	11.3460
Total											**0.0000**	**11.2723**	**11.2723**	**3.5100e-003**	**0.0000**	**11.3460**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2423	0.2423	1.0000e-005	0.0000	0.2425
Total											**0.0000**	**0.2423**	**0.2423**	**1.0000e-005**	**0.0000**	**0.2425**

3.3 Grading - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	11.2723	11.2723	3.5100e-003	0.0000	11.3460
Total											**0.0000**	**11.2723**	**11.2723**	**3.5100e-003**	**0.0000**	**11.3460**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2423	0.2423	1.0000e-005	0.0000	0.2425
Total											**0.0000**	**0.2423**	**0.2423**	**1.0000e-005**	**0.0000**	**0.2425**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	15.2766	15.2766	4.7600e-003	0.0000	15.3764
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**15.2766**	**15.2766**	**4.7600e-003**	**0.0000**	**15.3764**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6814	0.6814	3.0000e-005	0.0000	0.6821
Total											**0.0000**	**0.6814**	**0.6814**	**3.0000e-005**	**0.0000**	**0.6821**

3.4 Paving - 2018

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											0.0000	15.2765	15.2765	4.7600e-003	0.0000	15.3764
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**15.2765**	**15.2765**	**4.7600e-003**	**0.0000**	**15.3764**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6814	0.6814	3.0000e-005	0.0000	0.6821
Total											**0.0000**	**0.6814**	**0.6814**	**3.0000e-005**	**0.0000**	**0.6821**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	286.4913	286.4913	0.0701	0.0000	287.9636
Total											**0.0000**	**286.4913**	**286.4913**	**0.0701**	**0.0000**	**287.9636**

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
Vendor											0.0000	61.6977	61.6977	4.7000e-004	0.0000	61.7074
Worker											0.0000	68.8955	68.8955	3.3500e-003	0.0000	68.9658
Total											**0.0000**	**130.5932**	**130.5932**	**3.8200e-003**	**0.0000**	**130.6732**

3.5 Building Construction - 2018

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											0.0000	286.4910	286.4910	0.0701	0.0000	287.9633
Total											**0.0000**	**286.4910**	**286.4910**	**0.0701**	**0.0000**	**287.9633**

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
Vendor											0.0000	61.6977	61.6977	4.7000e-004	0.0000	61.7074
Worker											0.0000	68.8955	68.8955	3.3500e-003	0.0000	68.9658
Total											**0.0000**	**130.5932**	**130.5932**	**3.8200e-003**	**0.0000**	**130.6732**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	305.5302	305.5302	0.0743	0.0000	307.0913
Total											**0.0000**	**305.5302**	**305.5302**	**0.0743**	**0.0000**	**307.0913**

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
Vendor											0.0000	65.4635	65.4635	4.9000e-004	0.0000	65.4738
Worker											0.0000	71.2950	71.2950	3.3600e-003	0.0000	71.3655
Total											**0.0000**	**136.7586**	**136.7586**	**3.8500e-003**	**0.0000**	**136.8393**

3.5 Building Construction - 2019

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											0.0000	305.5299	305.5299	0.0743	0.0000	307.0909
Total											**0.0000**	**305.5299**	**305.5299**	**0.0743**	**0.0000**	**307.0909**

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
Vendor											0.0000	65.4635	65.4635	4.9000e-004	0.0000	65.4738
Worker											0.0000	71.2950	71.2950	3.3600e-003	0.0000	71.3655
Total											**0.0000**	**136.7586**	**136.7586**	**3.8500e-003**	**0.0000**	**136.8393**

3.5 Building Construction - 2020

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											0.0000	20.7585	20.7585	5.0600e-003	0.0000	20.8647
Total											**0.0000**	**20.7585**	**20.7585**	**5.0600e-003**	**0.0000**	**20.8647**

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
Vendor											0.0000	4.4116	4.4116	3.0000e-005	0.0000	4.4123
Worker											0.0000	4.7223	4.7223	2.2000e-004	0.0000	4.7268
Total											**0.0000**	**9.1338**	**9.1338**	**2.5000e-004**	**0.0000**	**9.1391**

3.5 Building Construction - 2020

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											0.0000	20.7585	20.7585	5.0600e-003	0.0000	20.8647
Total											**0.0000**	**20.7585**	**20.7585**	**5.0600e-003**	**0.0000**	**20.8647**

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
Vendor											0.0000	4.4116	4.4116	3.0000e-005	0.0000	4.4123
Worker											0.0000	4.7223	4.7223	2.2000e-004	0.0000	4.7268
Total											**0.0000**	**9.1338**	**9.1338**	**2.5000e-004**	**0.0000**	**9.1391**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.1285	30.1285	2.8600e-003	0.0000	30.1886
Total											**0.0000**	**30.1285**	**30.1285**	**2.8600e-003**	**0.0000**	**30.1886**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	13.5804	13.5804	6.6000e-004	0.0000	13.5943
Total											**0.0000**	**13.5804**	**13.5804**	**6.6000e-004**	**0.0000**	**13.5943**

3.6 Architectural Coating - 2018

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.1284	30.1284	2.8600e-003	0.0000	30.1885
Total											**0.0000**	**30.1284**	**30.1284**	**2.8600e-003**	**0.0000**	**30.1885**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	13.5804	13.5804	6.6000e-004	0.0000	13.5943
Total											**0.0000**	**13.5804**	**13.5804**	**6.6000e-004**	**0.0000**	**13.5943**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.3200	33.3200	2.8100e-003	0.0000	33.3791
Total											**0.0000**	**33.3200**	**33.3200**	**2.8100e-003**	**0.0000**	**33.3791**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	14.4107	14.4107	6.8000e-004	0.0000	14.4249
Total											**0.0000**	**14.4107**	**14.4107**	**6.8000e-004**	**0.0000**	**14.4249**

3.6 Architectural Coating - 2019

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.3199	33.3199	2.8100e-003	0.0000	33.3790
Total											**0.0000**	**33.3199**	**33.3199**	**2.8100e-003**	**0.0000**	**33.3790**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	14.4107	14.4107	6.8000e-004	0.0000	14.4249
Total											**0.0000**	**14.4107**	**14.4107**	**6.8000e-004**	**0.0000**	**14.4249**

3.6 Architectural Coating - 2020

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.0639	3.0639	2.4000e-004	0.0000	3.0689
Total											**0.0000**	**3.0639**	**3.0639**	**2.4000e-004**	**0.0000**	**3.0689**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2727	1.2727	6.0000e-005	0.0000	1.2739
Total											**0.0000**	**1.2727**	**1.2727**	**6.0000e-005**	**0.0000**	**1.2739**

3.6 Architectural Coating - 2020

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.0639	3.0639	2.4000e-004	0.0000	3.0689
Total											**0.0000**	**3.0639**	**3.0639**	**2.4000e-004**	**0.0000**	**3.0689**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2727	1.2727	6.0000e-005	0.0000	1.2739
Total											**0.0000**	**1.2727**	**1.2727**	**6.0000e-005**	**0.0000**	**1.2739**

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	tons/yr										MT/yr					
Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	33.00	48.00	19.00	66	28	6
Single Family Housing	0.00	0.00	0.00	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.503605	0.067800	0.178973	0.146934	0.044621	0.006359	0.021238	0.016884	0.002315	0.002275	0.006260	0.000554	0.002182

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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

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					
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

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					
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289
Unmitigated											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289
Total											**0.0000**	**4.1440**	**4.1440**	**4.0400e-003**	**0.0000**	**4.2289**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	4.1440	4.1440	4.0400e-003	0.0000	4.2289
Total											**0.0000**	**4.1440**	**4.1440**	**4.0400e-003**	**0.0000**	**4.2289**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Construction GHG - Phase 3

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.30	Acre	5.30	230,868.00	0
Single Family Housing	265.00	Dwelling Unit	64.16	477,000.00	708

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2020
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - phase 3

Construction Phase - based on info provided by applicant

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - DISREGARD - project's operational emissions evaluated separately

Consumer Products - project's operational emissions modeled separately

Area Coating - projec'ts operational emissions modeled separately

Landscape Equipment - project's operational emissions modeled separately

Energy Use - project's operational emissions modeled separately

Water And Wastewater - project's operational emissions modeled separately

Solid Waste - project's operational emissions modeled separately

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	75.00	521.00
tblConstructionPhase	NumDays	1,110.00	521.00
tblConstructionPhase	NumDays	110.00	176.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	23.00
tblConstructionPhase	PhaseEndDate	1/22/2024	2/4/2022
tblConstructionPhase	PhaseStartDate	1/22/2022	2/7/2020
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	5,098.84	0.00
tblEnergyUse	NT24NG	5,933.76	0.00
tblEnergyUse	T24E	729.62	0.00
tblEnergyUse	T24NG	26,218.01	0.00
tblGrading	AcresOfGrading	440.00	105.00

tblLandUse	LotAcreage	86.04	64.16
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	0.46	0.00
tblSolidWaste	SolidWasteGenerationRate	254.88	0.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.08	0.00
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	8.77	0.00
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.57	0.00
tblWater	IndoorWaterUseRate	17,265,816.79	0.00
tblWater	OutdoorWaterUseRate	6,314,851.15	0.00
tblWater	OutdoorWaterUseRate	10,884,971.45	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	534.0960	534.0960	0.1659	0.0000	537.5806
2020											0.0000	631.1577	631.1577	0.0860	0.0000	632.9633
2021											0.0000	649.7542	649.7542	0.0833	0.0000	651.5036
2022											0.0000	39.5096	39.5096	4.8600e-003	0.0000	39.6118
Total											**0.0000**	**1,854.5175**	**1,854.5175**	**0.3401**	**0.0000**	**1,861.6593**

2.1 Overall Construction

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					
2019											0.0000	534.0954	534.0954	0.1659	0.0000	537.5800
2020											0.0000	631.1573	631.1573	0.0860	0.0000	632.9629
2021											0.0000	649.7538	649.7538	0.0833	0.0000	651.5032
2022											0.0000	39.5096	39.5096	4.8600e-003	0.0000	39.6117
Total											**0.0000**	**1,854.5160**	**1,854.5160**	**0.3401**	**0.0000**	**1,861.6578**

	ROG	NOx	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**

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											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**4.4642**	**4.4642**	**4.3500e-003**	**0.0000**	**4.5556**

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											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556
Energy											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**4.4642**	**4.4642**	**4.3500e-003**	**0.0000**	**4.5556**

	ROG	NOx	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	4/1/2019	5/1/2019	5	23	
2	Grading	Grading	5/2/2019	1/2/2020	5	176	
3	Paving	Paving	1/3/2020	1/23/2020	5	15	
4	Building Construction	Building Construction	1/24/2020	1/21/2022	5	521	
5	Architectural Coating	Architectural Coating	2/7/2020	2/4/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 105

Acres of Paving: 0

Residential Indoor: 965,925; Residential Outdoor: 321,975; Non-Residential Indoor: 346,302; Non-Residential Outdoor: 115,434 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	192.00	66.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	40.4444	40.4444	0.0128	0.0000	40.7131
Total											**0.0000**	**40.4444**	**40.4444**	**0.0128**	**0.0000**	**40.7131**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2031	1.2031	6.0000e-005	0.0000	1.2043
Total											**0.0000**	**1.2031**	**1.2031**	**6.0000e-005**	**0.0000**	**1.2043**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	40.4444	40.4444	0.0128	0.0000	40.7131
Total											**0.0000**	**40.4444**	**40.4444**	**0.0128**	**0.0000**	**40.7131**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2031	1.2031	6.0000e-005	0.0000	1.2043
Total											**0.0000**	**1.2031**	**1.2031**	**6.0000e-005**	**0.0000**	**1.2043**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	482.3358	482.3358	0.1526	0.0000	485.5405
Total											**0.0000**	**482.3358**	**482.3358**	**0.1526**	**0.0000**	**485.5405**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	10.1128	10.1128	4.8000e-004	0.0000	10.1228
Total											**0.0000**	**10.1128**	**10.1128**	**4.8000e-004**	**0.0000**	**10.1228**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	482.3352	482.3352	0.1526	0.0000	485.5399
Total											**0.0000**	**482.3352**	**482.3352**	**0.1526**	**0.0000**	**485.5399**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	10.1128	10.1128	4.8000e-004	0.0000	10.1228
Total											**0.0000**	**10.1128**	**10.1128**	**4.8000e-004**	**0.0000**	**10.1228**

3.3 Grading - 2020

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.4229	5.4229	1.7500e-003	0.0000	5.4597
Total											**0.0000**	**5.4229**	**5.4229**	**1.7500e-003**	**0.0000**	**5.4597**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.1116	0.1116	1.0000e-005	0.0000	0.1118
Total											**0.0000**	**0.1116**	**0.1116**	**1.0000e-005**	**0.0000**	**0.1118**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.4229	5.4229	1.7500e-003	0.0000	5.4597
Total											**0.0000**	**5.4229**	**5.4229**	**1.7500e-003**	**0.0000**	**5.4597**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.1116	0.1116	1.0000e-005	0.0000	0.1118
Total											**0.0000**	**0.1116**	**0.1116**	**1.0000e-005**	**0.0000**	**0.1118**

3.4 Paving - 2020

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											0.0000	14.7015	14.7015	4.7500e-003	0.0000	14.8014
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**14.7015**	**14.7015**	**4.7500e-003**	**0.0000**	**14.8014**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6280	0.6280	3.0000e-005	0.0000	0.6286
Total											**0.0000**	**0.6280**	**0.6280**	**3.0000e-005**	**0.0000**	**0.6286**

3.4 Paving - 2020

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											0.0000	14.7015	14.7015	4.7500e-003	0.0000	14.8014
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**14.7015**	**14.7015**	**4.7500e-003**	**0.0000**	**14.8014**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6280	0.6280	3.0000e-005	0.0000	0.6286
Total											**0.0000**	**0.6280**	**0.6280**	**3.0000e-005**	**0.0000**	**0.6286**

3.5 Building Construction - 2020

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											0.0000	282.5461	282.5461	0.0688	0.0000	283.9917
Total											**0.0000**	**282.5461**	**282.5461**	**0.0688**	**0.0000**	**283.9917**

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
Vendor											0.0000	141.5386	141.5386	1.0400e-003	0.0000	141.5605
Worker											0.0000	131.2852	131.2852	6.0800e-003	0.0000	131.4129
Total											**0.0000**	**272.8238**	**272.8238**	**7.1200e-003**	**0.0000**	**272.9734**

3.5 Building Construction - 2020

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											0.0000	282.5458	282.5458	0.0688	0.0000	283.9914
Total											**0.0000**	**282.5458**	**282.5458**	**0.0688**	**0.0000**	**283.9914**

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
Vendor											0.0000	141.5386	141.5386	1.0400e-003	0.0000	141.5605
Worker											0.0000	131.2852	131.2852	6.0800e-003	0.0000	131.4129
Total											**0.0000**	**272.8238**	**272.8238**	**7.1200e-003**	**0.0000**	**272.9734**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.0339	301.0339	0.0725	0.0000	302.5568
Total											**0.0000**	**301.0339**	**301.0339**	**0.0725**	**0.0000**	**302.5568**

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
Vendor											0.0000	150.6976	150.6976	1.1000e-003	0.0000	150.7208
Worker											0.0000	137.4910	137.4910	6.1700e-003	0.0000	137.6206
Total											**0.0000**	**288.1886**	**288.1886**	**7.2700e-003**	**0.0000**	**288.3413**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.0335	301.0335	0.0725	0.0000	302.5565
Total											**0.0000**	**301.0335**	**301.0335**	**0.0725**	**0.0000**	**302.5565**

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
Vendor											0.0000	150.6976	150.6976	1.1000e-003	0.0000	150.7208
Worker											0.0000	137.4910	137.4910	6.1700e-003	0.0000	137.6206
Total											**0.0000**	**288.1886**	**288.1886**	**7.2700e-003**	**0.0000**	**288.3413**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	17.3074	17.3074	4.1400e-003	0.0000	17.3943
Total											**0.0000**	**17.3074**	**17.3074**	**4.1400e-003**	**0.0000**	**17.3943**

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
Vendor											0.0000	8.6643	8.6643	6.0000e-005	0.0000	8.6656
Worker											0.0000	7.7801	7.7801	3.4000e-004	0.0000	7.7872
Total											**0.0000**	**16.4443**	**16.4443**	**4.0000e-004**	**0.0000**	**16.4528**

3.5 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	17.3074	17.3074	4.1400e-003	0.0000	17.3943
Total											**0.0000**	**17.3074**	**17.3074**	**4.1400e-003**	**0.0000**	**17.3943**

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
Vendor											0.0000	8.6643	8.6643	6.0000e-005	0.0000	8.6656
Worker											0.0000	7.7801	7.7801	3.4000e-004	0.0000	7.7872
Total											**0.0000**	**16.4443**	**16.4443**	**4.0000e-004**	**0.0000**	**16.4528**

3.6 Architectural Coating - 2020

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.0007	30.0007	2.3200e-003	0.0000	30.0495
Total											**0.0000**	**30.0007**	**30.0007**	**2.3200e-003**	**0.0000**	**30.0495**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	24.9230	24.9230	1.1500e-003	0.0000	24.9472
Total											**0.0000**	**24.9230**	**24.9230**	**1.1500e-003**	**0.0000**	**24.9472**

3.6 Architectural Coating - 2020

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.0007	30.0007	2.3200e-003	0.0000	30.0495
Total											**0.0000**	**30.0007**	**30.0007**	**2.3200e-003**	**0.0000**	**30.0495**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	24.9230	24.9230	1.1500e-003	0.0000	24.9472
Total											**0.0000**	**24.9230**	**24.9230**	**1.1500e-003**	**0.0000**	**24.9472**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3680
Total											**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3680**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	27.2118	27.2118	1.2200e-003	0.0000	27.2374
Total											**0.0000**	**27.2118**	**27.2118**	**1.2200e-003**	**0.0000**	**27.2374**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3679
Total											**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3679**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	27.2118	27.2118	1.2200e-003	0.0000	27.2374
Total											**0.0000**	**27.2118**	**27.2118**	**1.2200e-003**	**0.0000**	**27.2374**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.1916	3.1916	2.1000e-004	0.0000	3.1959
Total											**0.0000**	**3.1916**	**3.1916**	**2.1000e-004**	**0.0000**	**3.1959**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.5663	2.5663	1.1000e-004	0.0000	2.5687
Total											**0.0000**	**2.5663**	**2.5663**	**1.1000e-004**	**0.0000**	**2.5687**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.1916	3.1916	2.1000e-004	0.0000	3.1959
Total											**0.0000**	**3.1916**	**3.1916**	**2.1000e-004**	**0.0000**	**3.1959**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.5663	2.5663	1.1000e-004	0.0000	2.5687
Total											**0.0000**	**2.5663**	**2.5663**	**1.1000e-004**	**0.0000**	**2.5687**

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	tons/yr										MT/yr					
Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.503605	0.067800	0.178973	0.146934	0.044621	0.006359	0.021238	0.016884	0.002315	0.002275	0.006260	0.000554	0.002182

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	tons/yr										MT/yr					
Electricity Mitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated											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

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					
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

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					
Single Family Housing	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
City Park	0											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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556
Unmitigated											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556
Total											**0.0000**	**4.4642**	**4.4642**	**4.3500e-003**	**0.0000**	**4.5556**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	4.4642	4.4642	4.3500e-003	0.0000	4.5556
Total											**0.0000**	**4.4642**	**4.4642**	**4.3500e-003**	**0.0000**	**4.5556**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - GHG - Proposed Project - YEAR 2020

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	8.90	Acre	8.90	387,684.00	0
Single Family Housing	761.00	Dwelling Unit	184.30	1,369,800.00	2032
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2020
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	395.51	**CH4 Intensity (lb/MWhr)**	0.019	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity Factors modified based on SMUD's anticipated RPS in year 2020

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	247.08	184.30
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	590.31	395.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	HO_TL	6.50	17.29
tblVehicleTrips	HS_TL	5.00	13.30
tblVehicleTrips	HW_TL	10.00	26.60

2.0 Emissions Summary

	ROG	NOx	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**

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											0.0000	14.7550	14.7550	0.0144	0.0000	15.0577
Energy											0.0000	2,785.7177	2,785.7177	0.0892	0.0409	2,800.2602
Mobile											0.0000	21,597.4200	21,597.4200	0.7828	0.0000	21,613.8587
Waste											193.0911	0.0000	193.0911	11.4114	0.0000	432.7296
Water											20.6848	83.8343	104.5191	0.0752	0.0458	120.3062
Total											**213.7759**	**24,481.7269**	**24,695.5028**	**12.3730**	**0.0867**	**24,982.2124**

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											0.0000	10.6612	10.6612	0.0103	0.0000	10.8767
Energy											0.0000	2,398.7185	2,398.7185	0.0798	0.0344	2,411.0431
Mobile											0.0000	21,597.4200	21,597.4200	0.7828	0.0000	21,613.8587
Waste											193.0911	0.0000	193.0911	11.4114	0.0000	432.7296
Water											16.5478	73.3823	89.9301	0.0606	0.0368	102.5983
Total											**209.6389**	**24,080.1819**	**24,289.8208**	**12.3448**	**0.0711**	**24,571.1063**

	ROG	NOx	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**	**1.94**	**1.64**	**1.64**	**0.23**	**17.98**	**1.65**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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	tons/yr										MT/yr					
Mitigated											0.0000	21,597.4200	21,597.4200	0.7828	0.0000	21,613.8587
Unmitigated											0.0000	21,597.4200	21,597.4200	0.7828	0.0000	21,613.8587

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	14.15	14.15	14.15	69,396	69,396
Elementary School	774.00	0.00	0.00	3,088,444	3,088,444
Single Family Housing	7,282.77	7,670.88	6673.97	49,482,751	49,482,751
Single Family Housing	1,090.98	1,149.12	999.78	7,412,659	7,412,659
Total	9,161.90	8,834.15	7,687.90	60,053,250	60,053,250

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
City Park	26.60	13.30	17.29	33.00	48.00	19.00	66	28	6
Elementary School	26.60	13.30	17.29	65.00	30.00	5.00	63	25	12
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.503605	0.067800	0.178973	0.146934	0.044621	0.006359	0.021238	0.016884	0.002315	0.002275	0.006260	0.000554	0.002182

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	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					
NaturalGas Mitigated											0.0000	1,227.8457	1,227.8457	0.0235	0.0225	1,235.3181
NaturalGas Unmitigated											0.0000	1,544.1830	1,544.1830	0.0296	0.0283	1,553.5806
Electricity Mitigated											0.0000	1,170.8728	1,170.8728	0.0563	0.0118	1,175.7250
Electricity Unmitigated											0.0000	1,241.5347	1,241.5347	0.0596	0.0126	1,246.6796

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	804097											0.0000	42.9097	42.9097	8.2000e-004	7.9000e-004	43.1708
Single Family Housing	2.44675e+007											0.0000	1,305.6788	1,305.6788	0.0250	0.0239	1,313.6250
Single Family Housing	3.6653e+006											0.0000	195.5945	195.5945	3.7500e-003	3.5900e-003	196.7848
Total												**0.0000**	**1,544.1830**	**1,544.1830**	**0.0296**	**0.0283**	**1,553.5806**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	611350											0.0000	32.6239	32.6239	6.3000e-004	6.0000e-004	32.8225
Single Family Housing	1.94795e+007											0.0000	1,039.5014	1,039.5014	0.0199	0.0191	1,045.8276
Single Family Housing	2.91809e+006											0.0000	155.7203	155.7203	2.9800e-003	2.8500e-003	156.6680
Total												**0.0000**	**1,227.8457**	**1,227.8457**	**0.0235**	**0.0225**	**1,235.3181**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	412833	74.0625	3.5600e-003	7.5000e-004	74.3694
Single Family Housing	5.65979e+006	1,015.3673	0.0488	0.0103	1,019.5750
Single Family Housing	847852	152.1050	7.3100e-003	1.5400e-003	152.7353
Total		**1,241.5347**	**0.0597**	**0.0126**	**1,246.6796**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	381357	68.4155	3.2900e-003	6.9000e-004	68.6990
Single Family Housing	5.3446e+006	958.8229	0.0461	9.7000e-003	962.7963
Single Family Housing	800636	143.6344	6.9000e-003	1.4500e-003	144.2297
Total		**1,170.8728**	**0.0563**	**0.0118**	**1,175.7250**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	10.6612	10.6612	0.0103	0.0000	10.8767
Unmitigated											0.0000	14.7550	14.7550	0.0144	0.0000	15.0577

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	14.7550	14.7550	0.0144	0.0000	15.0577
Total											**0.0000**	**14.7550**	**14.7550**	**0.0144**	**0.0000**	**15.0577**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	10.6612	10.6612	0.0103	0.0000	10.8767
Total											**0.0000**	**10.6612**	**10.6612**	**0.0103**	**0.0000**	**10.8767**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	104.5191	0.0752	0.0458	120.3062
Mitigated	89.9301	0.0606	0.0368	102.5983

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042	6.6584	3.2000e-004	7.0000e-005	6.6860
Elementary School	1.45454 / 3.74026	4.1633	1.9500e-003	1.1600e-003	4.5626
Single Family Housing	57.0098 / 35.9409	93.6974	0.0730	0.0446	109.0577
Total		**104.5191**	**0.0752**	**0.0458**	**120.3062**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042	6.6584	3.2000e-004	7.0000e-005	6.6860
Elementary School	1.16364 / 3.74026	3.8004	1.5800e-003	9.3000e-004	4.1220
Single Family Housing	45.6078 / 35.9409	79.4714	0.0587	0.0358	91.7903
Total		**89.9301**	**0.0606**	**0.0368**	**102.5983**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	193.0911	11.4114	0.0000	432.7296
Unmitigated	193.0911	11.4114	0.0000	432.7296

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3503
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Single Family Housing	840.96	170.7073	10.0885	0.0000	382.5660
Total		**193.0911**	**11.4114**	**0.0000**	**432.7296**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3503
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Single Family Housing	840.96	170.7073	10.0885	0.0000	382.5660
Total		**193.0911**	**11.4114**	**0.0000**	**432.7296**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - GHG - Proposed Project - YEAR 2020

Sacramento County, Mitigation Report

Construction Mitigation Summary

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

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

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

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.69	5.69	5.70	5.73	5.69
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.75	27.75	28.73	0.00	27.77
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.49	20.49	20.51	20.52	20.49
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	12.47	13.96	19.42	19.81	14.72
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.16	0.41		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	% Electric Lawnmower	100.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	25.00	
No	Install High Efficiency Lighting	0.00	
No	On-site Renewable	0.00	0.00

Appliance Type	Land Use Subtype	% Improvement
ClothWasher	Single Family Housing	30.00

DishWasher	Single Family Housing	15.00
Fan	Single Family Housing	50.00
Refrigerator	Single Family Housing	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Russel Ranch - GHG - BAU

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	8.90	Acre	8.90	387,684.00	0
Single Family Housing	761.00	Dwelling Unit	184.30	1,369,800.00	2032
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2010
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	448.64	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity Factors modified based on SMUD's RPS in year 2010

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblLandUse	LotAcreage	247.08	184.30
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	590.31	448.64
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2010
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CC_TL	5.00	13.30
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CNW_TL	6.50	17.29
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	CW_TL	10.00	26.60
tblVehicleTrips	HO_TL	6.50	17.29
tblVehicleTrips	HS_TL	5.00	13.30
tblVehicleTrips	HW_TL	10.00	26.60

2.0 Emissions Summary

	ROG	NOx	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**

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											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332
Energy											0.0000	2,952.4966	2,952.4966	0.0987	0.0440	2,968.2100
Mobile											0.0000	28,152.6654	28,152.6654	1.8400	0.0000	28,191.3057
Waste											193.0911	0.0000	193.0911	11.4114	0.0000	432.7296
Water											20.6848	95.0960	115.7808	0.0759	0.0460	131.6470
Total											**213.7759**	**31,215.0130**	**31,428.7889**	**13.4439**	**0.0901**	**31,739.0255**

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											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332
Energy											0.0000	2,952.4966	2,952.4966	0.0987	0.0440	2,968.2100
Mobile											0.0000	28,152.6654	28,152.6654	1.8400	0.0000	28,191.3057
Waste											193.0911	0.0000	193.0911	11.4114	0.0000	432.7296
Water											20.6848	95.0960	115.7808	0.0761	0.0461	131.6658
Total											**213.7759**	**31,215.0130**	**31,428.7889**	**13.4441**	**0.0901**	**31,739.0443**

	ROG	NOx	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**	**-0.06**	**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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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	tons/yr										MT/yr					
Mitigated											0.0000	28,152.6654	28,152.6654	1.8400	0.0000	28,191.3057
Unmitigated											0.0000	28,152.6654	28,152.6654	1.8400	0.0000	28,191.3057

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	14.15	14.15	14.15	69,396	69,396
Elementary School	774.00	0.00	0.00	3,088,444	3,088,444
Single Family Housing	7,282.77	7,670.88	6673.97	49,482,751	49,482,751
Single Family Housing	1,090.98	1,149.12	999.78	7,412,659	7,412,659
Total	9,161.90	8,834.15	7,687.90	60,053,250	60,053,250

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
City Park	26.60	13.30	17.29	33.00	48.00	19.00	66	28	6
Elementary School	26.60	13.30	17.29	65.00	30.00	5.00	63	25	12
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3
Single Family Housing	26.60	13.30	17.29	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.495147	0.066017	0.178707	0.160635	0.048257	0.006876	0.017588	0.012725	0.002362	0.002553	0.006257	0.000601	0.002275

5.0 Energy Detail

4.4 Fleet Mix

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					
NaturalGas Mitigated											0.0000	1,544.1830	1,544.1830	0.0296	0.0283	1,553.5806
NaturalGas Unmitigated											0.0000	1,544.1830	1,544.1830	0.0296	0.0283	1,553.5806
Electricity Mitigated											0.0000	1,408.3136	1,408.3136	0.0691	0.0157	1,414.6294
Electricity Unmitigated											0.0000	1,408.3136	1,408.3136	0.0691	0.0157	1,414.6294

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	804097											0.0000	42.9097	42.9097	8.2000e-004	7.9000e-004	43.1708
Single Family Housing	2.44675e+007											0.0000	1,305.6788	1,305.6788	0.0250	0.0239	1,313.6250
Single Family Housing	3.6653e+006											0.0000	195.5945	195.5945	3.7500e-003	3.5900e-003	196.7848
Total												**0.0000**	**1,544.1830**	**1,544.1830**	**0.0296**	**0.0283**	**1,553.5806**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	804097											0.0000	42.9097	42.9097	8.2000e-004	7.9000e-004	43.1708
Single Family Housing	2.44675e+007											0.0000	1,305.6788	1,305.6788	0.0250	0.0239	1,313.6250
Single Family Housing	3.6653e+006											0.0000	195.5945	195.5945	3.7500e-003	3.5900e-003	196.7848
Total												**0.0000**	**1,544.1830**	**1,544.1830**	**0.0296**	**0.0283**	**1,553.5806**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	412833	84.0115	4.1200e-003	9.4000e-004	84.3882
Single Family Housing	5.65979e+006	1,151.7645	0.0565	0.0128	1,156.9298
Single Family Housing	847852	172.5377	8.4600e-003	1.9200e-003	173.3114
Total		**1,408.3136**	**0.0691**	**0.0157**	**1,414.6294**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	412833	84.0115	4.1200e-003	9.4000e-004	84.3882
Single Family Housing	5.65979e+006	1,151.7645	0.0565	0.0128	1,156.9298
Single Family Housing	847852	172.5377	8.4600e-003	1.9200e-003	173.3114
Total		**1,408.3136**	**0.0691**	**0.0157**	**1,414.6294**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332
Unmitigated											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332
Total											**0.0000**	**14.7550**	**14.7550**	**0.0180**	**0.0000**	**15.1332**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	14.7550	14.7550	0.0180	0.0000	15.1332
Total											**0.0000**	**14.7550**	**14.7550**	**0.0180**	**0.0000**	**15.1332**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	115.7808	0.0759	0.0460	131.6470
Mitigated	115.7808	0.0761	0.0461	131.6658

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042	7.5528	3.7000e-004	8.0000e-005	7.5867
Elementary School	1.45454 / 3.74026	4.6535	1.9700e-003	1.1700e-003	5.0562
Single Family Housing	57.0098 / 35.9409	103.5745	0.0735	0.0448	119.0041
Total		**115.7808**	**0.0759**	**0.0460**	**131.6470**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6042	7.5528	3.7000e-004	8.0000e-005	7.5867
Elementary School	1.45454 / 3.74026	4.6535	1.9800e-003	1.1700e-003	5.0566
Single Family Housing	57.0098 / 35.9409	103.5745	0.0737	0.0448	119.0225
Total		**115.7808**	**0.0761**	**0.0461**	**131.6658**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	193.0911	11.4114	0.0000	432.7296
Unmitigated	193.0911	11.4114	0.0000	432.7296

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3503
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Single Family Housing	840.96	170.7073	10.0885	0.0000	382.5660
Total		**193.0911**	**11.4114**	**0.0000**	**432.7296**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3503
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Single Family Housing	840.96	170.7073	10.0885	0.0000	382.5660
Total		**193.0911**	**11.4114**	**0.0000**	**432.7296**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - GHG - BAU

Sacramento County, Mitigation Report

Construction Mitigation Summary

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

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					

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

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.28	-0.11	-0.01
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.16	0.41		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Russel Ranch - GHG YEAR 2020 - As Approved

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	10.00	50,162.02	0
City Park	6.50	Acre	6.50	283,140.00	0
Single Family Housing	574.00	Dwelling Unit	191.60	1,033,200.00	1533
Single Family Housing	139.00	Dwelling Unit	15.20	250,200.00	371
Apartments Low Rise	406.00	Dwelling Unit	22.20	406,000.00	1084
Regional Shopping Center	380.06	1000sqft	8.72	380,061.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2020
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	395.51	**CH4 Intensity (lb/MWhr)**	0.019	**N2O Intensity (lb/MWhr)**	0.00413

1.3 User Entered Comments & Non-Default Data

Project Characteristics - intensity factors modified based on SMUD RPS reduction requirement of 33% by 2020

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	10.00
tblLandUse	LotAcreage	45.13	15.20
tblLandUse	LotAcreage	186.36	191.60
tblLandUse	LotAcreage	25.38	22.20
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	590.31	395.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.00413
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CC_TL	5.00	13.65
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CNW_TL	6.50	17.75
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	CW_TL	10.00	27.30
tblVehicleTrips	HO_TL	6.50	17.75
tblVehicleTrips	HO_TL	6.50	17.75
tblVehicleTrips	HS_TL	5.00	13.65
tblVehicleTrips	HS_TL	5.00	13.65
tblVehicleTrips	HW_TL	10.00	27.30
tblVehicleTrips	HW_TL	10.00	27.30

2.0 Emissions Summary

	ROG	NOx	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**

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											0.0000	18.8747	18.8747	0.0185	0.0000	19.2620
Energy											0.0000	3,860.5324	3,860.5324	0.1371	0.0535	3,880.0053
Mobile											0.0000	46,781.8927	46,781.8927	1.7133	0.0000	46,817.8722
Waste											280.3955	0.0000	280.3955	16.5709	0.0000	628.3843
Water											36.2696	138.5410	174.8106	0.1315	0.0803	202.4715
Total											**316.6651**	**50,799.8408**	**51,116.5059**	**18.5713**	**0.1339**	**51,547.9953**

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											0.0000	13.6376	13.6376	0.0131	0.0000	13.9136
Energy											0.0000	3,413.8159	3,413.8159	0.1256	0.0462	3,430.7599
Mobile											0.0000	46,781.8927	46,781.8927	1.7133	0.0000	46,817.8722
Waste											280.3955	0.0000	280.3955	16.5709	0.0000	628.3843
Water											36.2696	138.5410	174.8106	0.1318	0.0804	202.4990
Total											**316.6651**	**50,347.8872**	**50,664.5523**	**18.5547**	**0.1265**	**51,093.4291**

	ROG	NOx	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**	**0.89**	**0.88**	**0.09**	**5.46**	**0.88**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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	tons/yr										MT/yr					
Mitigated											0.0000	46,781.8927	46,781.8927	1.7133	0.0000	46,817.8722
Unmitigated											0.0000	46,781.8927	46,781.8927	1.7133	0.0000	46,817.8722

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	10.34	10.34	10.34	52,018	52,018
Elementary School	774.00	0.00	0.00	3,169,690	3,169,690
Single Family Housing	5,493.18	5,785.92	5033.98	38,309,049	38,309,049
Single Family Housing	1,330.23	1,401.12	1219.03	9,276,930	9,276,930
Apartments Low Rise	2,675.54	2,906.96	2464.42	18,760,465	18,760,465
Regional Shopping Center	16,319.82	18,991.65	9592.74	59,938,757	59,938,757
Total	26,603.10	29,095.98	18,320.50	129,506,908	129,506,908

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
City Park	27.30	13.65	17.75	33.00	48.00	19.00	66	28	6
Elementary School	27.30	13.65	17.75	65.00	30.00	5.00	63	25	12
Single Family Housing	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Single Family Housing	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Apartments Low Rise	27.30	13.65	17.75	46.50	12.50	41.00	86	11	3
Regional Shopping Center	27.30	13.65	17.75	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.503605	0.067800	0.178973	0.146934	0.044621	0.006359	0.021238	0.016884	0.002315	0.002275	0.006260	0.000554	0.002182

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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					
NaturalGas Mitigated											0.0000	1,331.1862	1,331.1862	0.0255	0.0244	1,339.2875
NaturalGas Unmitigated											0.0000	1,674.7417	1,674.7417	0.0321	0.0307	1,684.9339
Electricity Mitigated											0.0000	2,082.6297	2,082.6297	0.1001	0.0218	2,091.4724
Electricity Unmitigated											0.0000	2,185.7907	2,185.7907	0.1050	0.0228	2,195.0714

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	5.50782e+006											0.0000	293.9183	293.9183	5.6300e-003	5.3900e-003	295.7070
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	804097											0.0000	42.9097	42.9097	8.2000e-004	7.9000e-004	43.1708
Regional Shopping Center	2.14734e+006											0.0000	114.5905	114.5905	2.2000e-003	2.1000e-003	115.2879
Single Family Housing	1.84551e+007											0.0000	984.8353	984.8353	0.0189	0.0181	990.8288
Single Family Housing	4.4691e+006											0.0000	238.4880	238.4880	4.5700e-003	4.3700e-003	239.9394
Total												**0.0000**	**1,674.7417**	**1,674.7417**	**0.0321**	**0.0307**	**1,684.9339**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	4.38441e+006											0.0000	233.9689	233.9689	4.4800e-003	4.2900e-003	235.3928
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	611350											0.0000	32.6239	32.6239	6.3000e-004	6.0000e-004	32.8225
Regional Shopping Center	1.69887e+006											0.0000	90.6583	90.6583	1.7400e-003	1.6600e-003	91.2101
Single Family Housing	1.46928e+007											0.0000	784.0655	784.0655	0.0150	0.0144	788.8371
Single Family Housing	3.55802e+006											0.0000	189.8695	189.8695	3.6400e-003	3.4800e-003	191.0250
Total												**0.0000**	**1,331.1862**	**1,331.1862**	**0.0255**	**0.0244**	**1,339.2875**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.53885e+006	276.0708	0.0133	2.8800e-003	277.2430
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	412833	74.0625	3.5600e-003	7.7000e-004	74.3769
Regional Shopping Center	4.92939e+006	884.3343	0.0425	9.2300e-003	888.0892
Single Family Housing	1.03378e+006	185.4613	8.9100e-003	1.9400e-003	186.2488
Single Family Housing	4.26901e+006	765.8618	0.0368	8.0000e-003	769.1136
Total		**2,185.7907**	**0.1050**	**0.0228**	**2,195.0714**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.50351e+006	269.7308	0.0130	2.8200e-003	270.8760
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	381357	68.4155	3.2900e-003	7.1000e-004	68.7060
Regional Shopping Center	4.55123e+006	816.4922	0.0392	8.5300e-003	819.9590
Single Family Housing	1.00843e+006	180.9127	8.6900e-003	1.8900e-003	181.6809
Single Family Housing	4.16431e+006	747.0785	0.0359	7.8000e-003	750.2505
Total		**2,082.6297**	**0.1001**	**0.0218**	**2,091.4724**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	13.6376	13.6376	0.0131	0.0000	13.9136
Unmitigated											0.0000	18.8747	18.8747	0.0185	0.0000	19.2620

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	18.8747	18.8747	0.0185	0.0000	19.2620
Total											**0.0000**	**18.8747**	**18.8747**	**0.0185**	**0.0000**	**19.2620**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											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
Landscaping											0.0000	13.6376	13.6376	0.0131	0.0000	13.9136
Total											**0.0000**	**13.6376**	**13.6376**	**0.0131**	**0.0000**	**13.9136**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	174.8106	0.1315	0.0803	202.4715
Mitigated	174.8106	0.1318	0.0804	202.4990

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	26.4525 / 16.6766	43.4756	0.0339	0.0207	50.6062
City Park	0 / 7.74463	4.8629	2.3000e-004	5.0000e-005	4.8835
Elementary School	1.45454 / 3.74026	4.1633	1.9500e-003	1.1600e-003	4.5629
Regional Shopping Center	28.152 / 17.2545	45.9588	0.0360	0.0220	53.5463
Single Family Housing	46.4548 / 29.2867	76.3500	0.0595	0.0364	88.8725
Total		**174.8106**	**0.1315**	**0.0803**	**202.4715**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	26.4525 / 16.6766	43.4756	0.0339	0.0207	50.6134
City Park	0 / 7.74463	4.8629	2.3000e-004	5.0000e-005	4.8835
Elementary School	1.45454 / 3.74026	4.1633	1.9500e-003	1.1600e-003	4.5633
Regional Shopping Center	28.152 / 17.2545	45.9588	0.0361	0.0221	53.5538
Single Family Housing	46.4548 / 29.2867	76.3500	0.0596	0.0364	88.8850
Total		**174.8106**	**0.1318**	**0.0804**	**202.4990**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	280.3955	16.5709	0.0000	628.3843
Unmitigated	280.3955	16.5709	0.0000	628.3843

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	186.76	37.9106	2.2405	0.0000	84.9601
City Park	0.56	0.1137	6.7200e-003	0.0000	0.2548
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Regional Shopping Center	399.06	81.0056	4.7873	0.0000	181.5387
Single Family Housing	685.44	139.1381	8.2228	0.0000	311.8175
Total		**280.3955**	**16.5709**	**0.0000**	**628.3843**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	186.76	37.9106	2.2405	0.0000	84.9601
City Park	0.56	0.1137	6.7200e-003	0.0000	0.2548
Elementary School	109.5	22.2275	1.3136	0.0000	49.8133
Regional Shopping Center	399.06	81.0056	4.7873	0.0000	181.5387
Single Family Housing	685.44	139.1381	8.2228	0.0000	311.8175
Total		**280.3955**	**16.5709**	**0.0000**	**628.3843**

9.0 Operational Offroad

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

10.0 Vegetation

Russel Ranch - Operational AQ - Resource Impact Minimization (Reduced Intensity) Alternative

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	600.00	Student	9.70	50,162.02	0
City Park	8.90	Acre	8.90	387,684.00	0
Single Family Housing	657.00	Dwelling Unit	213.31	1,182,600.00	1754
Single Family Housing	114.00	Dwelling Unit	11.30	205,200.00	304

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2022
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - ES size based on FPASP EIR assumption of average ES capacity of 600 students (see page 3A.14-24 of FPASP EIR)

Construction Phase - DISREGARD - Construction emissions modeled separately

Grading - total acres disturbed based on info provided by applicant

Vehicle Trips - based on information from traffic consultant

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	180.00	0.00
tblLandUse	LotAcreage	1.15	9.70
tblLandUse	LotAcreage	37.01	11.30
tblProjectCharacteristics	OperationalYear	2014	2022

2.0 Emissions Summary

	ROG	NOx	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**

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	47.4242	0.7350	63.7392	3.3600e-003		0.3521	0.3521		0.3521	0.3521						
Energy	0.7562	6.4748	2.8448	0.0413		0.5225	0.5225		0.5225	0.5225						
Mobile	23.8466	38.3277	227.0751	0.6840	45.7387	0.7002	46.4389	12.2193	0.6464	12.8657						
Total	**72.0270**	**45.5375**	**293.6591**	**0.7286**	**45.7387**	**1.5747**	**47.3134**	**12.2193**	**1.5209**	**13.7402**						

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	43.9342	0.5899	49.4162	2.2900e-003		0.2639	0.2639		0.2639	0.2639						
Energy	0.6012	5.1471	2.2583	0.0328		0.4154	0.4154		0.4154	0.4154						
Mobile	23.8466	38.3277	227.0751	0.6840	45.7387	0.7002	46.4389	12.2193	0.6464	12.8657						
Total	**68.3820**	**44.0647**	**278.7496**	**0.7191**	**45.7387**	**1.3794**	**47.1181**	**12.2193**	**1.3256**	**13.5449**						

	ROG	NOx	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	5.06	3.23	5.08	1.31	0.00	12.40	0.41	0.00	12.84	1.42	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	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					
Unmitigated	23.8466	38.3277	227.0751	0.6840	45.7387	0.7002	46.4389	12.2193	0.6464	12.8657						
Mitigated	23.8466	38.3277	227.0751	0.6840	45.7387	0.7002	46.4389	12.2193	0.6464	12.8657						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	14.15	14.15	14.15	26,108	26,108
Elementary School	774.00	0.00	0.00	1,162,576	1,162,576
Single Family Housing	6,287.49	6,622.56	5761.89	16,064,539	16,064,539
Single Family Housing	1,090.98	1,149.12	999.78	2,787,454	2,787,454
Total	8,166.62	7,785.83	6,775.82	20,040,677	20,040,677

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
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Elementary School	10.00	5.00	6.50	65.00	30.00	5.00	63	25	12
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504412	0.068359	0.177824	0.146424	0.044337	0.006430	0.021426	0.017091	0.002334	0.002281	0.006349	0.000546	0.002188

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.6012	5.1471	2.2583	0.0328		0.4154	0.4154		0.4154	0.4154						
NaturalGas Unmitigated	0.7562	6.4748	2.8448	0.0413		0.5225	0.5225		0.5225	0.5225						

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	2203.01	0.0238	0.2160	0.1814	1.3000e-003		0.0164	0.0164		0.0164	0.0164						
Single Family Housing	10041.9	0.1083	0.9254	0.3938	5.9100e-003		0.0748	0.0748		0.0748	0.0748						
Single Family Housing	57873.2	0.6241	5.3334	2.2695	0.0340		0.4312	0.4312		0.4312	0.4312						
Total		**0.7562**	**6.4748**	**2.8448**	**0.0413**		**0.5224**	**0.5224**		**0.5224**	**0.5224**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	1.67493	0.0181	0.1642	0.1379	9.9000e-004		0.0125	0.0125		0.0125	0.0125						
Single Family Housing	46.0751	0.4969	4.2461	1.8069	0.0271		0.3433	0.3433		0.3433	0.3433						
Single Family Housing	7.99476	0.0862	0.7368	0.3135	4.7000e-003		0.0596	0.0596		0.0596	0.0596						
Total		**0.6012**	**5.1471**	**2.2583**	**0.0328**		**0.4154**	**0.4154**		**0.4154**	**0.4154**						

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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					
Unmitigated	47.4242	0.7350	63.7392	3.3600e-003		0.3521	0.3521		0.3521	0.3521						
Mitigated	43.9342	0.5899	49.4162	2.2900e-003		0.2639	0.2639		0.2639	0.2639						

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	6.4263					0.0000	0.0000		0.0000	0.0000						
Consumer Products	39.0688					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						
Landscaping	1.9291	0.7350	63.7392	3.3600e-003		0.3521	0.3521		0.3521	0.3521						
Total	**47.4242**	**0.7350**	**63.7392**	**3.3600e-003**		**0.3521**	**0.3521**		**0.3521**	**0.3521**						

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	6.4263					0.0000	0.0000		0.0000	0.0000						
Consumer Products	36.1478					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						
Landscaping	1.3602	0.5899	49.4162	2.2900e-003		0.2639	0.2639		0.2639	0.2639						
Total	**43.9342**	**0.5899**	**49.4162**	**2.2900e-003**		**0.2639**	**0.2639**		**0.2639**	**0.2639**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

BREEZE AERMOD Model Results

Highest Results of Pollutant: PM10

Avg. Per.	Grp ID	High	Type	Val	Units	Date	UTM		Elev.	Hill Ht.	Flag Ht.	Rec. Type	Grid ID
						YYMMDDHH	East (m)	North (m)	(m)	(m)	(m)		
24-HR	ALL	1ST	Avg. Conc.	10.96240b	ug/m**3	11082624	667083.54	4278495.22	179.70	241.00	1.80	GC	RGRID
	FUGPM10	1ST		1.40618b		08040124	667083.54	4278495.22	179.70	241.00	1.80	GC	RGRID
	EXHPM10	1ST		0.00653b		10052224	667083.54	4278465.22	181.40	241.00	1.80	GC	RGRID

Summary of Total Messages

#	Message Type
0	Fatal Error Message(s)
12	Warning Message(s)
13930	Informational Message(s)
43824	Hours Were Processed
11310	Calm Hours Identified
2620	Missing Hours Identified (5.98 Percent)

Error & Warning Messages

Msg. Type	Pathway	Ref. #	Description
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081407
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081408
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081409
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081410
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081411
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081412
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081413
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081414
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081415
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081416
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081417
WARNING	MX	W441	Vert Pot Temp Grad abv ZI set to min .005, KURDAT= 11081418

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BREEZE AERMOD
Sensitive Receptor Results

Pollutant: PM10, Type: CONC (ug/m3) 1ST HIGH 24-HR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	Date
			East(m)	North(m)		YYMMDDHH
1	101	Nearest Residence	667083.54	4278455.22	10.5581187009122210	11082624

Pollutant: PM10, Type: CONC (ug/m3) 1ST HIGH 24-HR AVG., Group: FUGPM10**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	Date
			East(m)	North(m)		YYMMDDHH
1	101	Nearest Residence	667083.54	4278455.22	1.0523568965023071	10052224

Pollutant: PM10, Type: CONC (ug/m3) 1ST HIGH 24-HR AVG., Group: EXHPM10**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	Date
			East(m)	North(m)		YYMMDDHH
1	101	Nearest Residence	667083.54	4278455.22	0.0065189737500244	10052224

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APPENDIX E

Biological Resources Impact Assessment

Non-Backbone Russell Ranch Project

Specific Plan Amendment for the Folsom South of U.S. Highway 50 Specific Plan Project

Sacramento County, California

Prepared For:

City of Folsom
Community Development Department

December 2014

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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1.0 INTRODUCTION

The Biological Resources chapter of the Draft EIR evaluates the biological resources that occur in the Russell Ranch project area. The Russell Ranch Project is part of the Folsom Specific Plan Area (SPA) and the Russell Ranch project area, including the backbone infrastructure within the project area, corresponds to approximately 432 acres within the SPA. Existing plant communities, wetlands, wildlife habitats, and potential for special-status species and communities are discussed. The information contained in this analysis is primarily based on the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project and biological resources surveys prepared for the project area.

2.0 REGULATORY SETTING

A number of federal, State, and local policies provide the regulatory framework that guides the protection of biological resources. The following discussion summarizes those laws that are most relevant to biological resources in the vicinity of the project site.

2.1 Federal Regulations

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Taking can result in civil or criminal penalties.

FESA and NEPA Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of threatened or endangered wildlife or plant species. The U.S. Army Corps of Engineers (USACE) must consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic Atmospheric Administration (NOAA) when threatened or endangered species may be affected by a proposed project to determine whether issuance of a Section 404 permit would jeopardize the species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Wildlife Code states, "It is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the United States (U.S.) under Section 404 of the Clean Water Act (CWA). "Discharge of fill material" is defined as the addition of fill material into Waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2[f]). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 C.F.R. §328.3[b]).

Furthermore, Jurisdictional Waters of the United States can be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 C.F.R. §328.3[e]).

2.2 State Regulations

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with CDFW when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

CESA prohibits the taking of State-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFG requires preparation of mitigation plans in accordance with published guidelines.

CDFW exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600 to 1607. CDFW has the authority to regulate work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In addition, CDFW enforces the Fish & Wildlife Code of California, which provides protection for "fully protected birds" (§3511), "fully protected mammals" (§4700), "fully protected reptiles and amphibians" (§5050), and "fully protected fish" (§5515). The California Code of Federal Regulations (Title 14) prohibits the take of Protected amphibians (Chapter 5, §41), Protected reptiles (Chapter 5, §42) and Protected furbearers (Chapter 5, §460). CESA, which prohibits 'take' of state-listed Endangered or Threatened species, is also enforced by CDFW.

For projects resulting in significant impacts to biological resources, mitigation measures are required to minimize adverse environmental effects. Mitigation measures often include, for example, replacement of removed trees and mitigation for impacts to wetlands and/or waters. Depending on the quality and extent of the area impacted, the mitigation ratio can vary between 1:1 (mitigation: impact) and 5:1. For non-water-dependent projects located near creeks, CDFW also typically requires the establishment of a buffer zone immediately adjacent to creeks and wetlands. Depending upon the specific project components and the presence of State- or federally-listed species, the buffer zone may be as little as 50 feet or as much as 300 feet.

CDFW Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive consideration during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" developed by CDFW. CDFW tracks species in California whose numbers, reproductive success, or habitat may be threatened.

2.3 Local Regulations

The following are the local government environmental goals and policies relevant to the CEQA review process.

City of Folsom 1993 General Plan

The following goals and policies from the Folsom 1993 General Plan are applicable to biological resources:

Goal 24 *To ensure that projects contain landscaping and trees that complement the City's natural character.*

Policy 24.1 Development projects shall contain landscaping of common or public areas, surface parking areas, and streets bordering the project.

Policy 24.2 Prior to the granting of a building permit, a project must have an approved landscaping plan showing the location, type, and proposed maintenance of landscaping.

Policy 24.3 The developer or property owners shall be responsible for maintaining landscaping required as part of the project approval for residential developments where there are common areas, and for all commercial and industrial developments. The City will require the establishment of a landscaping maintenance district or other legally binding maintenance agreement and sin reserve the power to enforce the maintenance agreement through appropriate means.

Policy 24.4 The City shall adopt a landscaping ordinance with standards for:

1. Preferred types of plants and materials.
2. Agreements to ensure the continued maintenance of landscaped areas.
3. Minimum size of trees upon planting.
4. Amount of landscaping area.

Goal 25 Wherever feasible, to preserve, acquire, rehabilitate, enhance and maintain the identified resources for the use and enjoyment of the present and future generations. The identified resources include, but are not limited to:

1. Tricolored Blackbird
2. Swainson's hawk
3. Tiger Salamander
4. Valley Elderberry Longhorn Beetle

Policy 25.3 Sensitive habitat areas and open space shall have their borders defined by public access ways, and/or shall have views from adjacent buildings oriented toward the areas.

Policy 25.4 The City shall require that a qualified biologist conduce a vegetative/wildlife field survey, and analysis prior to consideration of development, applications for projects within or adjacent to sensitive habitat areas and potential habitats for sensitive wildlife and floral species.

2.4 Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society

The California Native Plant Society (CNPS) maintains the Inventory of Rare and Endangered Plants of California (CNPS 2014), which provides a list of plant species native to California that are

threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six ranks (i.e. California Rare Plant Ranks [CRPR]). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by the CDFW and the CNPS. The ranks are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPR:

- CRPR 1A – presumed extirpated in California and either rare or extinct elsewhere;
- CRPR 1B – rare, threatened, or endangered in California and elsewhere;
- CRPR 2A – presumed extirpated in California, but more common elsewhere;
- CRPR 2B – rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3 – a review list of plants about which more information is needed; and
- CRPR 4 – a watch list of plants of limited distribution.

Additionally, the CNPS has defined Threat Ranks that are added as part of the rank for plant species listed in the Inventory of Rare and Endangered Plants of California (CNPS 2014). Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);
- Threat Rank 0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) ; and
- Threat Rank 0.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank, and differences in Threat Ranks do not constitute additional or different protection (CNPS 2014). Depending on the policy of the lead agency, substantial impacts to plants listed as CRPR 1A, 1B, or 2 (regardless of threat rank) are typically considered significant under CEQA Guidelines Section 15380. For CRPR 3 and 4 species (regardless of threat rank), significance under CEQA is typically evaluated if the lead agency has determined those plants to be of local significance or regional importance. Such plants may be identified in local Habitat Conservation Plans (HCPs) or City or County General Plans.

3.0 EXISTING ENVIRONMENTAL SETTING

The following sections describe the existing environmental setting and biological resources occurring, or potentially occurring, in the proposed project area.

3.1 Regional Setting

The project area is located in the eastern portion of Sacramento County in the City of Folsom, California. The City of Folsom is in the Sierra Nevada foothills at the eastern edge of the alluvial Sacramento Valley. The Sierra Nevada province is characterized by steep-sided hills and narrow, rocky stream channels. The Sacramento Valley is characterized by flat alluvial plains. Climate in the Folsom area is characterized by warm, dry summers with no rain and mild winters with light rain.

3.2 Project Setting

The project area is characterized by rolling foothill topography. Elevations within the project area range from approximately 240 feet to 800 feet above mean sea level. Historic land uses in the area include cattle ranching, farming, and mining activities, primarily gold mining. The project area is predominantly characterized by annual grassland on gently sloping topography. In addition, seasonal wetland, freshwater seeps, swales, and intermittent drainages are also present within the project area.

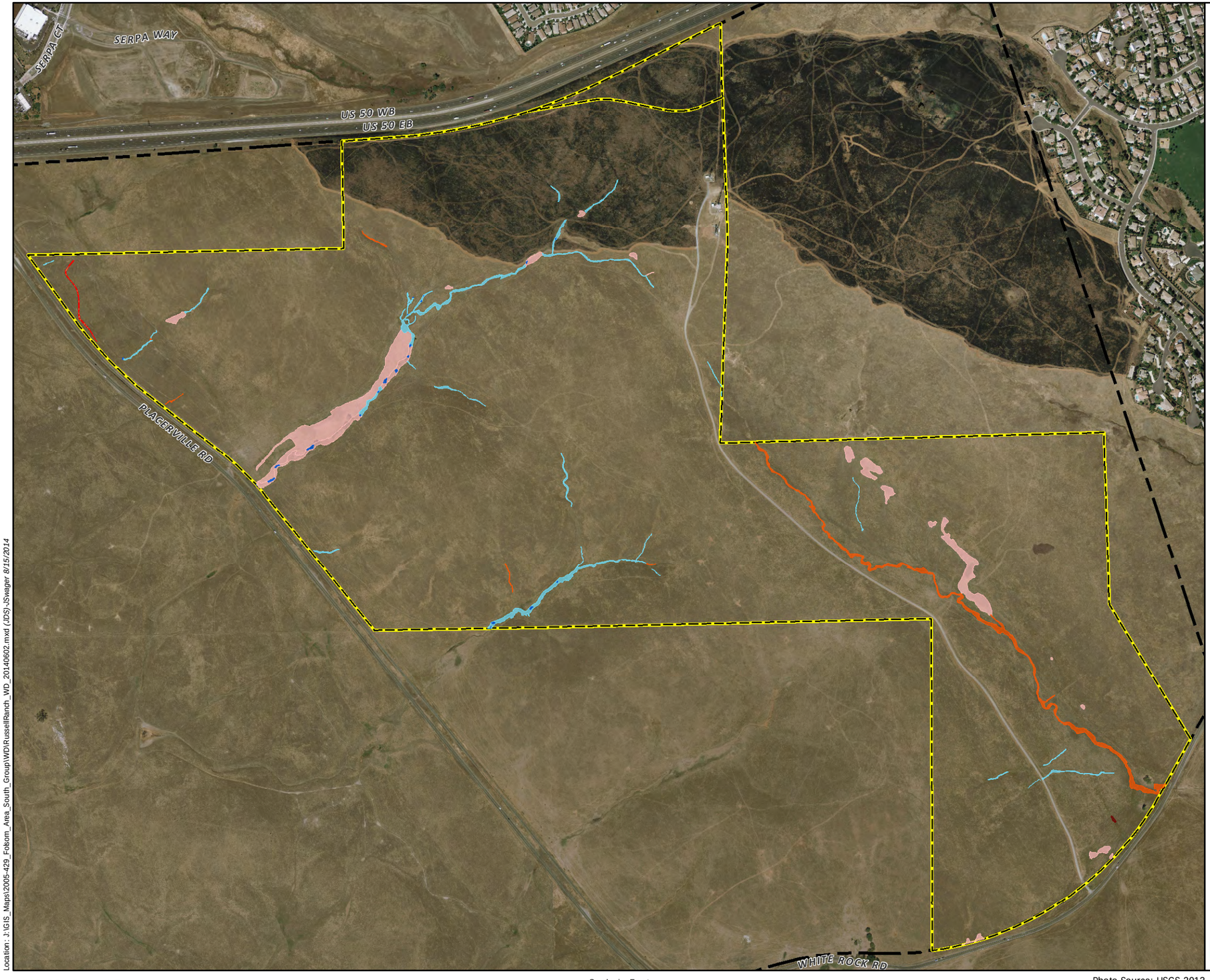
Waters of the U.S.

A wetland delineation for the project area was prepared as part of the former Folsom South project by Foothill Associates (Foothill) in November 2006 and revised in January 2009. The delineation covered the project area and has been verified by the USACE. The delineation identified a total of 9.467 acres of Waters of the U.S., including wetlands, within the project area. Waters of the U.S. delineated consist of 5.791 acres of seeps, 0.085 acre of vernal pools, 0.016 acre of seasonal wetlands, 1.785 acres of seasonal wetland swales, and 1.790 acres of intermittent stream channels (Figure 1. *Wetland Delineation*). It should be noted that the aforementioned acreages include the total wetland acreage within the proposed project site, including the wetlands avoided by the proposed project, the wetlands impacted by the proposed project, and the wetlands impacted by the backbone infrastructure required for the proposed project.

Freshwater Seeps

A seep is a wetland plant community characterized by dense cover of perennial herb species usually dominated by rushes, sedges, and grasses. Freshwater seep communities occur on sites with permanently moist or wet soils resulting from daylighting groundwater. Characteristic plant species found in seeps include Baltic rush (*Juncus balticus*), iris-leaved rush (*Juncus xiphioides*), common spikerush (*Eleocharis macrostachya*), white hedge-nettle (*Stachys albens*), rice cutgrass (*Leersia oryzoides*), and dense-flowered willowherb (*Epilobium densiflorum*). There are approximately 5.791 acres of seeps within the project area (see Figure 1). All acreage of the seep habitat has been determined to fall under USACE jurisdiction.

Figure 1.
Wetland Delineation [1]



Map Features

Specific Plan Boundary [2]

Project Boundary [2]

Wetland Delineation - 9.554 total acres [1]

Waters - 9.467 acres

- Vernal Pool - 0.085 acres
- Seasonal Wetland - 0.016 acres
- Seasonal Wetland Swale - 1.785 acres
- Seep - 5.791 acres
- Intermittent Drainage - 1.790 acres

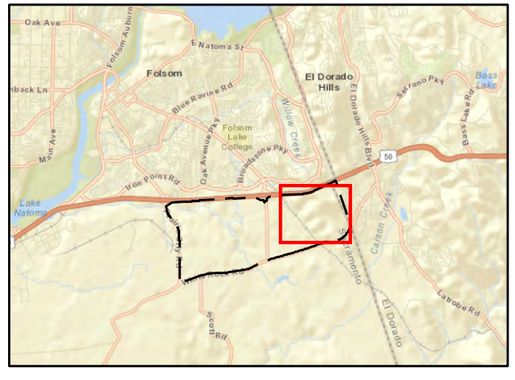
Isolated/Non-Jurisdictional Features - 0.087 acres

- Ditch/Canal (NJ) - 0.087 acres

[2] *Subject to U.S. Army Corps of Engineers verification*
This exhibit depicts information and data produced in strict accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.

[2] *Boundary Source: The project boundary extents depicted on this graphic have been provided by MacKay and Somps. ECORP holds no liability to the accuracy of the boundary.*

Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013



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Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\WD\RussellRanch_WD_20140602.mxd (JDS) JSwager 8/15/2014

2013-024 Russell Ranch

Scale in Feet
0 800

Photo Source: USGS 2013

Map Date: 8/15/2014

Vernal Pools

Vernal pools are natural ephemeral wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface that restricts the percolation of water. Vernal pools are supported by direct precipitation and surface runoff. They pond during the wet season and typically become dry by late spring. Vernal pools are typically characterized by a high percentage of native plant species, many of which may be endemic (restricted) to vernal pools.

Characteristic vernal pool species include annual hairgrass (*Deschampsia danthonioides*), Fremont's goldfields (*Lasthenia fremontii*), common spikerush, coyote thistle (*Eryngium vaseyi*), stipitate popcorn flower (*Plagiobothrys stipitatus*), white-headed navarretia (*Navarretia leucocephala*), and horned downingia (*Downingia bicornuta*). There is approximately 0.085 acre of vernal pools within the project area (see Figure 1). All acreage of the vernal pool habitat has been determined to fall under USACE jurisdiction.

Seasonal Wetlands

Seasonal wetlands are present within the project area in both topographic depressions and swales. Hydrologically, seasonal wetlands are similar to vernal pools because they remain inundated or saturated for extended periods during winter and spring. Seasonal wetland swales do not pond water appreciably, but are inundated by flowing water during rainfall and support a saturated upper soil horizon for an extended period of time during the growing season. Characteristic plant species in seasonal wetlands and seasonal wetland swales include coyote thistle, toad rush (*Juncus bufonius*), hyssop loosestrife (*Lythrum hyssopifolium*), foothill meadowfoam (*Limnanthes striata*), dallis grass (*Paspalum dilatatum*), rabbitsfoot grass (*Polypogon monspeliensis*), common spikerush, and ryegrass (*Festuca perennis*). There is approximately 0.016 acre of depressional seasonal wetlands within the project area. In addition, there are 1.785 acres of seasonal wetland swales within the project area (see Figure 1). All acres of the depressional seasonal wetlands and seasonal wetland swales within the project area have been determined to fall under USACE jurisdiction.

Drainage Channels

Intermittent drainage channels occur throughout the project area. Intermittent drainages are typically unvegetated due to the scouring effects of flowing water. There are 1.790 acres of intermittent drainage channel within the project area. All acreages of intermittent drainage channel have been determined to be fall under USACE jurisdiction.

Ditches are also present within the project area. Ditches are excavated channels. Many of these kinds of features follow topographic contours and may represent relics from historic hydraulic gold mining activities, while others may have been excavated to transport irrigation water. Some ditches may support hydrophytic vegetation such as rabbitsfoot grass, curly dock (*Rumex crispus*), and common yellow monkeyflower (*Mimulus guttatus*). Approximately 0.087 acre of ditch is present throughout the project area (see Figure 1). The 0.087 acre of ditch has been determined to be non-jurisdictional, although these waters are still considered Waters of the State.

The project area also contains 0.087 acre of ditch that USACE determined to be non-navigable, isolated, and intrastate waters with no apparent interstate commerce connection and therefore not at this time considered jurisdictional Waters of the U.S. (non-jurisdictional). Although these aquatic features are not subject to USACE jurisdiction under Section 404 of the CWA, they may be considered Waters of the State under California's Porter-Cologne Act, and therefore subject to regulation by the Central Valley Regional Water Quality Control Board (RWQCB).

Wetlands and other Waters of the U.S. within the project area, as well as Waters of the State, provide important ecological functions within the watershed. Wetland functions are processes or services that take place in a wetland and they fall into the broad categories of habitat, hydrologic, and water quality functions. Habitat functions are those services that benefit wildlife and include providing food, shelter, water, and breeding grounds. Hydrologic functions of the wetlands and other waters within the project area include groundwater recharge and moderation of discharge, water storage, and reduction of flow velocity. Water quality functions include nutrient cycling, removal of nutrients and compounds, and trapping sediment. Many wetland functions are interdependent and if one function becomes impaired, it can adversely affect other wetland functions.

Soils

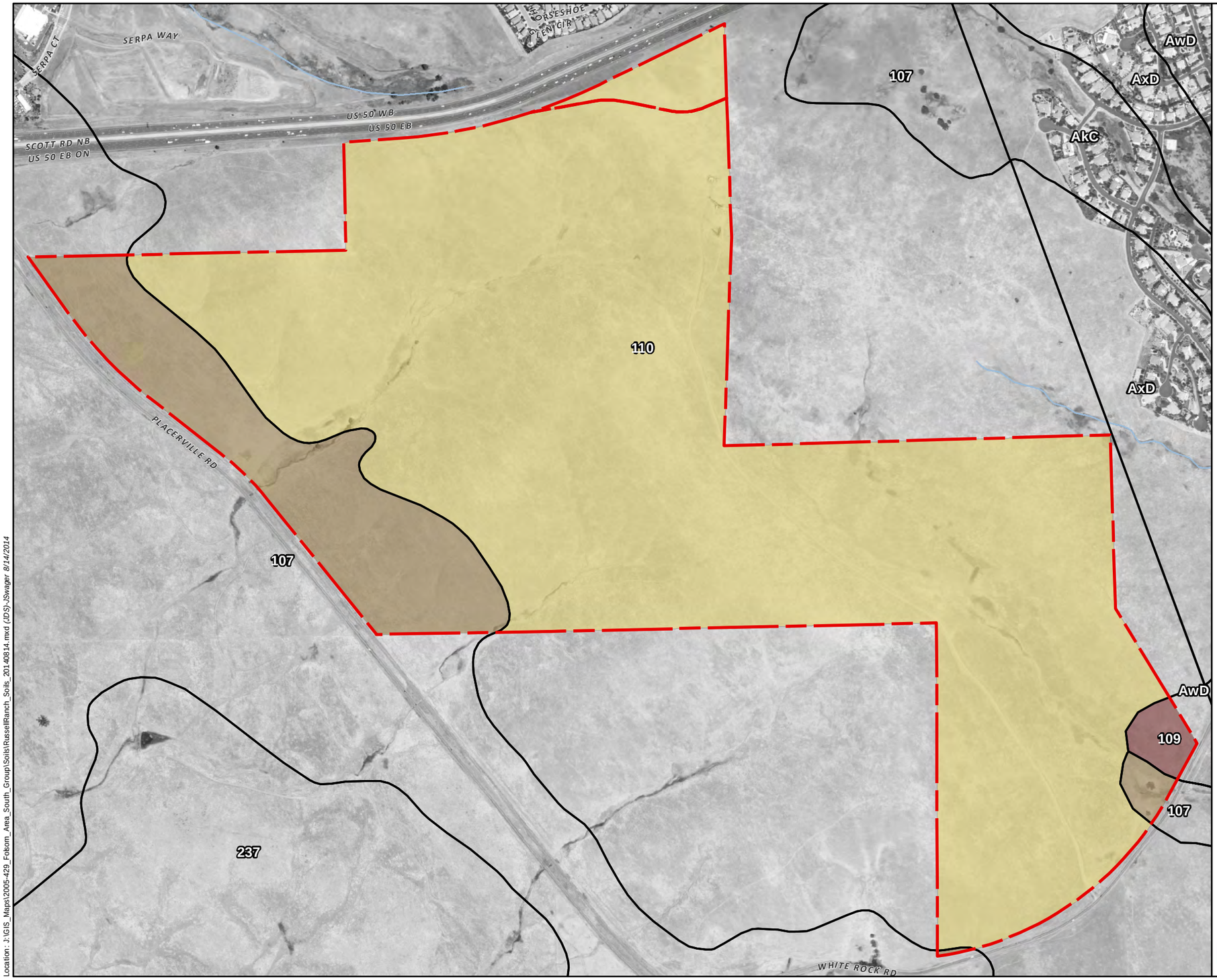
As mapped by the Natural Resources Conservation Service, the majority of the project site is Auburn-Argonaut-Rock Outcrop complex 8-30 percent slope with smaller portions of Auburn-Argonaut complex 3 to 8 percent slope, and Auburn silt loam 2 -20 percent slope (Figure 2*. Natural Resources Conservation Service Soils Types*).

Vegetation Communities

Annual Grassland

Annual grassland covers the majority of the project area and is characterized by a dense cover of non-native annual grasses interspersed with numerous species of nonnative annual forbs and native wildflowers. Characteristic grass species include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), ryegrass, and medusahead (*Taeniatherum caput-medusae*). Common nonnative forbs include cut-leaved geranium (*Geranium dissectum*), Klamath weed (*Hypericum perforatum*), prickly sow thistle (*Sonchus asper*), yellow star-thistle (*Centaurea solstitialis*), and Italian thistle (*Carduus pycnocephalus*). Native wildflowers observed in the annual grassland within the project site include wild hyacinth (*Triteleia hyacinthina*), Ithuriel's spear (*Triteleia laxa*), purple owl's-clover (*Castilleja exserta*), valley tassels (*Castilleja attenuata*), harvest brodiaea (*Brodiaea elegans*), and Fremont's tidy-tips (*Layia fremontii*).

Figure 2.
Natural Resources Conservation Service Soil Types



Map Features

- Project Boundary

Series Number - Series Name

- 107 - Argonaut-Auburn complex, 3 to 8 percent slopes
- 109 - Auburn silt loam, 2 to 30 percent slopes
- 110 - Auburn-Argonaut-Rock outcrop complex, 8 to 30 percent slopes

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Sacramento, CA

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Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Soils\RussellRanch_Soils_20140814.mxd (JDS)-JSwager 8/14/2014

2013-024 Russell Ranch

Scale in Feet
0 700

Photo Source: NAIP 2012

Map Date: 8/14/2014

Valley Needlegrass Grassland

Small inclusions of Valley needlegrass grassland are present within the project area, interspersed within the annual grassland community described above. Valley needlegrass grassland is characterized by a minimum 10% cover of purple needlegrass (*Stipa pulchra*), nodding needlegrass (S. *cernua*), or foothill needlegrass (S. *lepida*), a native perennial bunchgrass. Associated species are primarily native and nonnative species characteristic of the surrounding annual grassland community. Purple needlegrass surveys were conducted for the project area on 9 and 10 June 2014 by Foothill Associates, and a Valley needlegrass grassland survey was conducted on 29 July 2014 by ECORP. Approximately 0.50 acres of Valley needlegrass grassland was mapped within the southern portion of the project area (ECORP 2014, Attachment A).

3.3 Special-Status Species

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

- Species officially listed by the State of California or the Federal government as endangered, threatened, or rare
- Candidates for state or Federal listing as endangered, threatened, or rare
- Taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines
- Species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern
- Species listed as Fully Protected under the California Fish and Game Code
- Species afforded protection under local or regional planning documents
- Taxa considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California." The CNPS includes five ranks [California Rare Plant Ranks (CRPR)] for categorizing plant species of concern, which are summarized as follows:
  - CRPR 1A—Plants presumed to be extinct in California
  - CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere
  - CRPR 2A— Plants presumed to be extinct in California, but more common elsewhere
  - CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere
  - CRPR 3—Plants about which more information is needed (a review list)
  - CRPR 4—Plants of limited distribution (a watch list)

Plant inventories prepared by CNPS provide one source of substantial evidence that is used by lead agencies to determine what plants meet the definition of endangered, rare, or threatened species, as described in CCR Section 15380 of the State CEQA Guidelines. For purposes of this document, the

relevant inventories are CRPR 1A, 1B, 2A and 2B. All plants listed in the CNPS Inventory (CNPS 2014) are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all of the plant taxa inventoried by the CNDDB, regardless of their legal or protection status. Notation as a CRPR 1B or 2 plant species does not automatically qualify the species as endangered, rare, or threatened within the definition of State CEQA Guidelines CCR Section 15380. Rather, CNPS designations are considered along with other available information about the status, threats, and population condition of plant species to determine whether a species warrants evaluation as an endangered, rare, or threatened species under CEQA. Plants on CRPR 1A, 1B, 2A and 2B of the CNPS Inventory may qualify for listing, and CDFW recommends—and local governments may require—that these species be addressed during CEQA review of proposed projects. However, a plant species need not be in the CNPS Inventory to be considered a rare, threatened, or endangered species under CEQA.

The term California Species of Special Concern is applied by CDFW to animals not listed under FESA or CESA, but that are nonetheless declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA, however some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Table 1 provides a list of special-status species known to occur or with potential to occur within the project area. These lists were developed through review of biological studies previously conducted within the project area and in the vicinity, on inventory lists available from the CNDDB (2014) and CNPS Inventory (2014) for the Folsom, Folsom SE, Clarksville, and Buffalo Creek U.S. Geological Survey (USGS) quadrangles, and on the list of potentially occurring special-status species prepared for the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project. Species may have been added or removed from the original 2010 Volume Draft EIR/EIS based on listing status changes and/or new species information. (Figure 3. *CNDDB Occurrences of Special-Status Species*) shows all of the CNDDB occurrences within a five-mile radius of the project area.

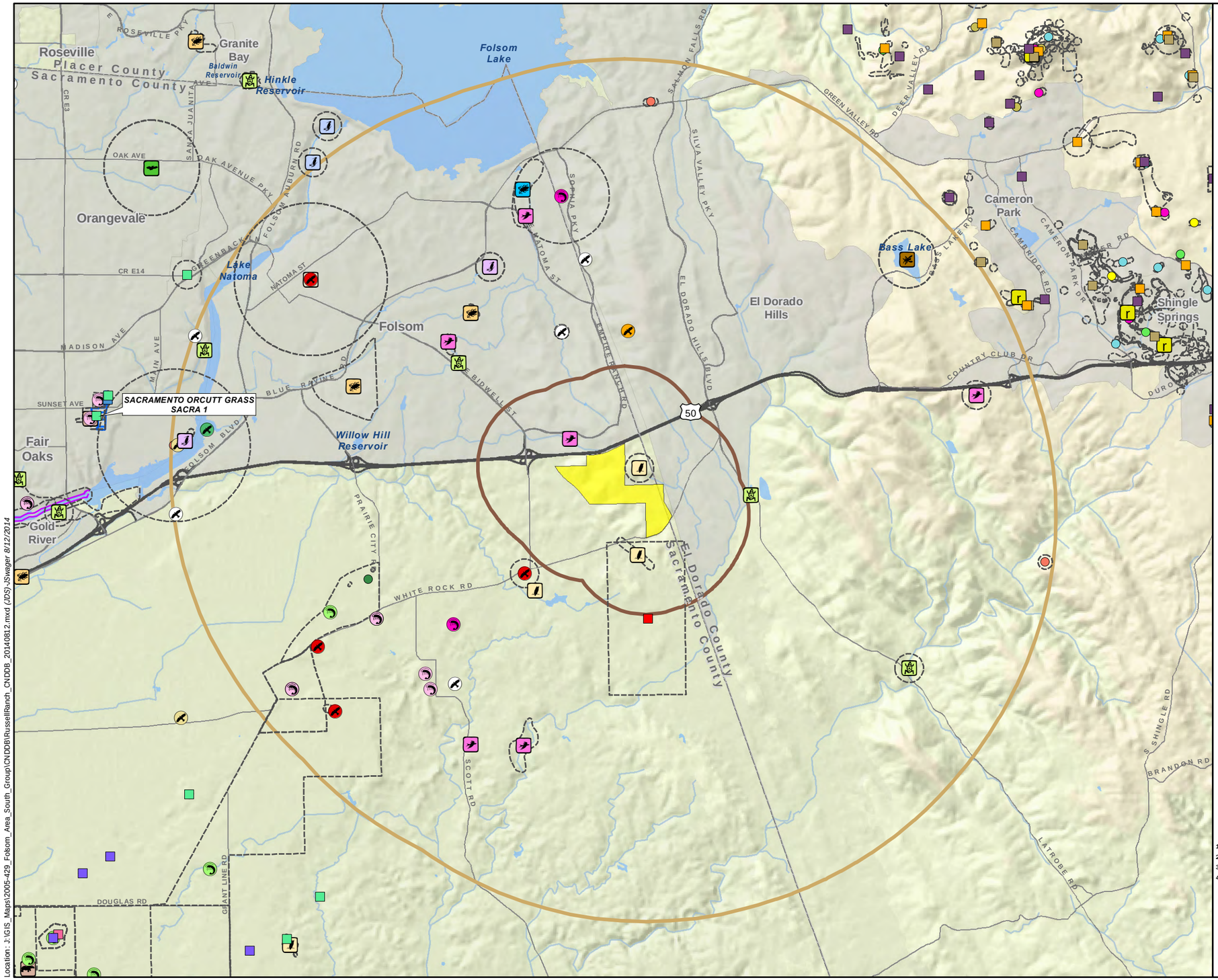
Listed and Special-Status Plants

Based on the habitat and elevation range of the project area, it was determined that 12 special-status plants have at least some potential to be present within the project area (Table 1 and Figure 3). Focused surveys for Ahart's dwarf rush (*Junas leiospermus var. ahartii*), Boggs lake hedge-hyssop (*Gratiola heterosepala*), Brandegee's clarkia (*Clarkia biloba* ssp. *Brandegeae*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *Myersii*), Sacramento Orcutt grass (*Orcuttia viscida*), Sanford's arrowhead (*Sagittaria sanfordii*), slender Orcutt grass (*Orcuttia tenuis*), and Tuolumne button-celery (*Eryngium pinnatisectum*) were conducted for the project area on 5 May, 18 May, 7 June and 20 June , 2006 and on 27 April , 1 May and 25 June 2009 by Foothill Associates as part of the former Folsom South project. None of the special-status plant species listed above were found during any of the focused surveys (Foothill 2006 and 2009, Attachment B and Attachment C).

Listed and Special-Status Wildlife

Several special-status wildlife species have potential to occur within the Project area (Table 1 and Figure 3). These include four special-status invertebrates, three special-status amphibians, two special-status reptiles, thirteen special-status birds, and six special-status mammals. No habitat for special-status fish species occurs within the project area.

Figure 3.
CNDDB Occurrences of Special-Status Species



Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\CNDDB\RussellRanch_CNDDB_20140812.mxd (JDS) JSwager 8/12/2014

Distance From Project

- 1 mile
- 5 miles

Boundaries (RR)

- Project Boundary [1]

CNDDB Occurrences [2]

- CNDDB Polygon Extent

Plants

- Stebbins' Morning-glory
- Pine Hill Ceanothus
- Red Hills Soaproot
- Brandegee's Clarkia
- Dwarf Downingia
- Pine Hill Flannelbush
- El Dorado Bedstraw
- Boggs Lake Hedge-hyssop
- Bisbee Peak Rush-rose
- Legenere
- Pincushion Navarretia
- Slender Orcutt Grass
- Sacramento Orcutt Grass
- Layne's Ragwort
- Sanford's Arrowhead
- El Dorado County Mule Ears

Invertebrates

- Vernal Pool Fairy Shrimp
- California Linderiella
- Vernal Pool Tadpole Shrimp
- Blennosperma Vernal Pool Andrenid Bee
- Valley Elderberry Longhorn Beetle
- Ricksecker's Water Scavenger Beetle

Fish

- Steelhead - Central Valley DPS *

Amphibians/Reptiles

- Coast Horned Lizard
- Western Spadefoot
- Western Pond Turtle

Birds

- Double-crested Cormorant
- Great Egret
- Great Blue Heron
- Cooper's Hawk
- Golden Eagle
- Swainson's Hawk
- White-tailed Kite
- Bald Eagle
- Merlin
- Burrowing Owl
- Tricolored Blackbird

Mammals

- Pallid Bat
- Silver-haired Bat
- American Badger

Critical Habitat

- Sacramento Orcutt Grass [3]
- Central Valley Steelhead [4]

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

**** Species occurrence is represented solely by a polygon. The centroid point is not visible within the map extents.***

[1] Project Boundary: MSCE
[2] CDFW California Natural Diversity Database (CNDDB), August 2014 Update (GIS Shapefile)
[3] USFWS
[4] NOAA/NMFS
CNDDB Occurrences Located on USGS 7.5' Quadrangles: Buffalo Creek, Carmichael, Citrus Heights, Clarksville, Folsom, Folsom SE, Latrobe, Shingle Springs

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2013-024 Russell Ranch

Miles
0 1 2

Map Date: 8/12/2014

Table 1. Potentially Occurring Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Plants							
Big scale balsamroot	*Balsamorhiza macrolepis* var. *macrolepis*	-	-	1B.2	Chaparral, cismontane woodland and valley and foothill grassland. Sometimes on serpentine.	March-June	Low potential to occur - Suitable habitat available in grasslands; however, the probability of occurrence is low because typically found on serpentine soils. Two surveys have been conducted for the entire project area. This species was not documented within the project area during any of the surveys.
Hispid bird's beak	*Cordylanthus mollis* ssp. *hispidus*	-	-	1B.1	Alkaline meadows, seeps, and playas (0' - 500'').	June-September	Absent - No habitat.
Dwarf downingia	*Downingia pusilla*	-	-	2.2	Vernal pools or other seasonal wetlands in annual grasslands (0' - 1,500').	March-May	Potential to occur – Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Tuolumne button-celery	*Eryngium pinnaisectum*	-	-	1B.2	Vernal pools or other seasonal wetlands in cismontane woodland and lower montane coniferous forest (200' - 3,000').	June-August	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Bogg's Lake hedge hyssop	*Gratiola heterosepala*	-	-	1B.2	Lake marine marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils (30' - 8,000').	April-August	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	1B.2	vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools (95' - 750').	March-May	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Red Bluff dwarf rush	*Juncus leiospermus var. leiospermus*	-	-	1B.1	Vernal pools, meadows and seeps, and other seasonally wet habitats (115' - 3,500').	March-May	Absent - Sacramento and El Dorado counties are outside the range for this species.
Legenere	*Legenere limosa*	-	-	1B.1	Relatively deep and wet vernal pools (0' - 3,000').	April-June	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Pincushion navarretia	*Navarretia meyersii* ssp. *meyersii*	-	-	1B.1	Vernal pools (65' - 750').	May	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Sanford's arrowhead	*Sagitarria sanfordii*	-	-	1B.2	Marshes and swamps (assorted shallow freshwater) (0-2,133').	May-October	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Slender Orcutt grass	*Orcuttia tenuis*	FT	CE	1B.1	Vernal pools (100' - 5,800').	May-October	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Sacramento Orcutt grass	*Orcuttia viscida*	FE	CE	1B.1	Vernal pools (98' - 328').	April-September	Potential to occur - Two surveys have been conducted for entire the project area. This species was not documented within the project area during any of the surveys.
Invertebrates							
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FPD	-	-	Elderberry shrubs, typically in riparian habitats (0' - 3,000).		Absent - No elderberry shrubs were found on-site during surveys.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Low potential - Surveys have been conducted for the Russell Ranch property as part of the SPA. This species was not documented during wet or dry season surveys.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Low potential - Surveys have been conducted for the Russell Ranch property as part of the SPA. . This species was not documented during wet or dry season surveys.
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Low potential - Surveys have been conducted for the Russell Ranch property as part of the SPA. This species was not documented during wet or dry season surveys.
Amphibians							
California tiger salamander (Central California DPS)	*Ambystoma californiense*	FT	CT	CSC, CNDDB	Uses vernal pools, wetlands and adjacent grassland or oak woodland; needs underground refuge, usually ground squirrel or gopher burrows. Uses vernal pools, ponds, and seasonal wetlands for breeding. Largely terrestrial as adults.	March-May	Absent - nearest known occurrence is 15 miles to the south of Project. and extensive surveys in the project vicinity, have not detected the species north of Cosumnes River (USFWS 2004).
Western spadefoot	*Spea hammondii*	-	-	CSC	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	March-May	Potential to occur - Suitable habitat available on-site. Nearest documented occurrences are more than 5 miles away in the Roseville, Phoenix Park area in the Fair Oaks area, and Mather Regional Park in the unincorporated Sacramento County area south of US 50 between the cities of Sacramento and Rancho Cordova.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
California red-legged frog	*Rana draytonii*	FT	-	CSC, CNDDB	Currently occurs in lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Larvae require 11 to 20 weeks to transform, sometimes overwintering. Adults must have aestivation habitat to endure summer dry down.	May-November	Absent - presumed extirpated from the valley floor. Nearest reproducing population is 30 miles east near Pollock Pines.
Reptiles							
Western pond turtle	*Actinemys marmorata*	-	-	CSC, CNDDB	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	April-October	Low potential - marginal habitat quality on-site. Known to occur 1 mile downstream of the project area within Alder Creek (GenCorp 2007c).
Giant garter snake	*Thamnophis gigas*	FT	CT	CSC, CNDDB	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence of low numbers of large predatory fish. also require upload refugia not subject to flooding during the snake's inactive season		Absent - No habitat; out of known range.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Birds							
White-tailed kite (nesting)	*Elanus leucurus*	-	-	CFP	woodland, grassland	March-June	Potential to occur - Suitable grassland foraging habitat. Several CNDDB-documented nest sites in project vicinity
Northern harrier (nesting)	*Circus cyaneus*	-	-	CSC	marsh, grassland	April-September	Known to occur within the SPA, winter foraging documented by Foothill Associates (MJM Properties 2006b). Suitable nesting and foraging habitat available.
Golden eagle	*Aquila chrysaetos*	-	-	CFP	forages in large open areas of foothill shrub and grassland habitats and occasionally croplands. Does not nest in the Central Valley	nests (February-August) ; winter CV (October-February)	Low potential - unlikely to nest on-site since no historic nests documented; known to nest approx.. 1 mile nothr of US-50 along Sacramento/El Dorado County Line.
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	CNDDB	Forages in grasslands and agricultural lands; nests in riparian and isolated trees	March-August	Potential to occur - suitable nesting and foraging habitat present on-site.
Southern bald eagle (nesting and wintering)	*Haliaeetus leucocephalus leucocephalus*	FD	CE		Forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion. Often roosts communally in winter		Low Potential-foraging habitat is marginal, and the species does not nest on the Central Valley floor. However, could be a rare and irregular foraging visitor.
California black rail (year round)	*Laterallis jamaicensis conturniculus*	-	CT		Freshwater marshes, wet meadows, and shallow margins of saltwater marshes. Requires consistent water depth of 1 inch and dense vegetation to nest.		Absent - No habitat present.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Modesto song sparrow (year round)	*Melospiza melodia*	-	-	CSC	Nests and forages primarily in emergent marsh, riparian scrub, and earl successional riparian forest habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees.		Potential to occur - Suitable nesting habitat available along Alder Creek, drainages and a few other on-site wetlands. However, there is scientific uncertainty as to whether song sparrows in eastern Sacramento County above 200 feet in elevation are of the "Modesto" form.
Burrowing owl (burrow sites)	*Athene cunicularia*	-	-	BCC, CSC	grassland	March-August	Known to occur - occurs in grasslands on-site; winter foraging documented by Foothill Associates (MJM Properties 2006b). Suitable nesting and foraging habitat available.
Purple martin (nesting)	*Progne subis*	-	-	CSC	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings. Forages in foothill and low montane oak and riparian woodlands; less frequently in coniferous forests and open or developed habitats	September-April	Absent - only known breeding colonies in the region are in the City of Sacramento where they nest in hollow-box bridges (Shuford and Gardali 2008) and in highway overpass in the City of Rocklin
Loggerhead shrike	*Lanius ludovicianus*	-	-	BCC, CSC	grassland, woodland	March-July	Potential to occur - Suitable foraging habitat available on-site. Foraging documented adjacent to project area along Alder Creek by Matus 1981.
Bank swallow (nesting)	*Riparia riparia*	-	CT	-	stream banks	May-July	Absent - no suitable habitat on-site. On-site creek banks are sloping and vegetated.
Grasshopper sparrow	*Ammodramus savannarum*	-	-	CSC	grassland	May-July	Potential-grassland community represents nesting habitat.
Tricolored blackbird (nesting colony)	*Agelaius tricolor*	-	-	BCC, CSC	marsh, grassland	April-June	Potential - suitable habitat not likely within project area, but known nesting colony occurrences in

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
							close proximity to Project.
Mammals							
Pallid bat	*Anthrozous pallidus*	-	-	CSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats. Roosts in rock crevices, oak hollows, bridges, or buildings	April-September	Low potential - Foraging habitat on-site; however, limited roosting habitat available on-site.
Ringtail	*Bassariscus astutus*	-	-	CFP	Large acreages of oak woodland, riparian and other dense brush habitats with rock recesses or hollow snags for cover.		Low potential - marginal habitat quality, open understory, proximity to urban Folsom, and lack of connectivity to other riparian forest or oak woodland habitats.
Townsend's big-eared bat	*Corymorhinus townsendii*	-	-	CSC	Typically roosts in caves; however, colonies of <100 individuals occasionally nest in buildings or bridges. Forages in all habitats except alpine and subalpine, though most commonly in mesic forests an woodlands	April-September	Low potential - Foraging habitat on-site; however, limited roosting habitat available on-site.
Western mastiff bat	*Eumops perotis californicus*	-	-	CSC	Typically roost in high cliffs and rock creviced in small colonies of <100 individuals. Forages in a variety of grassland, shrub and wooded habitats including riparian and urban areas, though most commonly in open, arid lands.		Absent - suitable habitat not present within the project area.

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Western red bat	*Lasiurus blossevilli*	-	-	CSC	Roots primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	April-September	Potential to occur - potential to forage on-site; however, unlikely to roost due to lack of riparian woodland.
American badger	*Taxidea taxus*	-	-	CSC, CNDDB	Inhabits open uncultivated annual grasslands and in drier open shrub, forest and herbaceous habitats with friable soils.	Any season	Low potential - marginally suitable denning habitat available.

Status Codes:

FE - Federal ESA listed, Endangered.
FT - Federal ESA listed, Threatened.
FPE - Formally Proposed for federal ESA listing as Endangered.
FPT - Formally Proposed for federal ESA listing as Threatened.
FPD - Listed under Federal ESA, but formally proposed for delisting.
FD - Formally Delisted (delisted species are monitored for 5 years).
FC - Candidate for federal ESA listing as Threatened or Endangered.
NMFS - NOAA/NMFS species of concern
BCC - U. S. Fish and Wildlife Service Bird of Conservation Concern (USFWS, 2002).
CE - California ESA or Native Plant Protection Act listed, Endangered.
CT - California ESA or Native Plant Protection Act listed, Threatened.
CR - California ESA or Native Plant Protection Act listed, Rare.
CC - Candidate for California ESA listing as Endangered or Threatened.
CFP - Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).
X - Critical Habitat designated for this species.
CSC - California Department of Fish and Game Species of Special Concern (CDFG, updated August 2004).
1A - California Rare Plant Rank/Presumed extirpated in California and either rare or extinct elsewhere.
1B - California Rare Plant Rank/Rare, threatened or endangered in California and elsewhere.
2A - California Rare Plant Rank/Presumed extirpated in California, but more common elsewhere.
2B - California Rare Plant Rank/Rare, threatened or endangered in California, but more common elsewhere.
3 - California Rare Plant Rank/Plants About Which More Information is Needed - A Review List.
4 - California Rare Plant Rank/Plants of Limited Distribution - A Watch List.
0.1 - CNPS Threat Rank/Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat.
0.2 - CNPS Threat Rank/Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat.
0.3 - CNPS Threat Rank/Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat.
CNDDB - Species that is tracked by CDFG's Natural Diversity Database but does not have any of the above special-status designations otherwise

4.0 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to biological resources.

4.1 Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the CWA (including, but not limited to marshes, vernal pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other local, regional, or State habitat conservation plan.

4.2 Method of Analysis

This analysis of impacts on biological resources resulting from implementation of the proposed project is based on review of existing biological resources documented on or near the project area, as listed previously in this section and information obtained from the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project. All biological resources are analyzed at project level detail based on the Russell Ranch Project land use plan.

4.3 Project-Specific Impacts and Mitigation Measures

The following discussion of biological resources impacts is based on implementation of the proposed project in comparison to existing conditions and the standards of significance presented above.

Waters of the U.S., including Wetlands, and Waters of the State

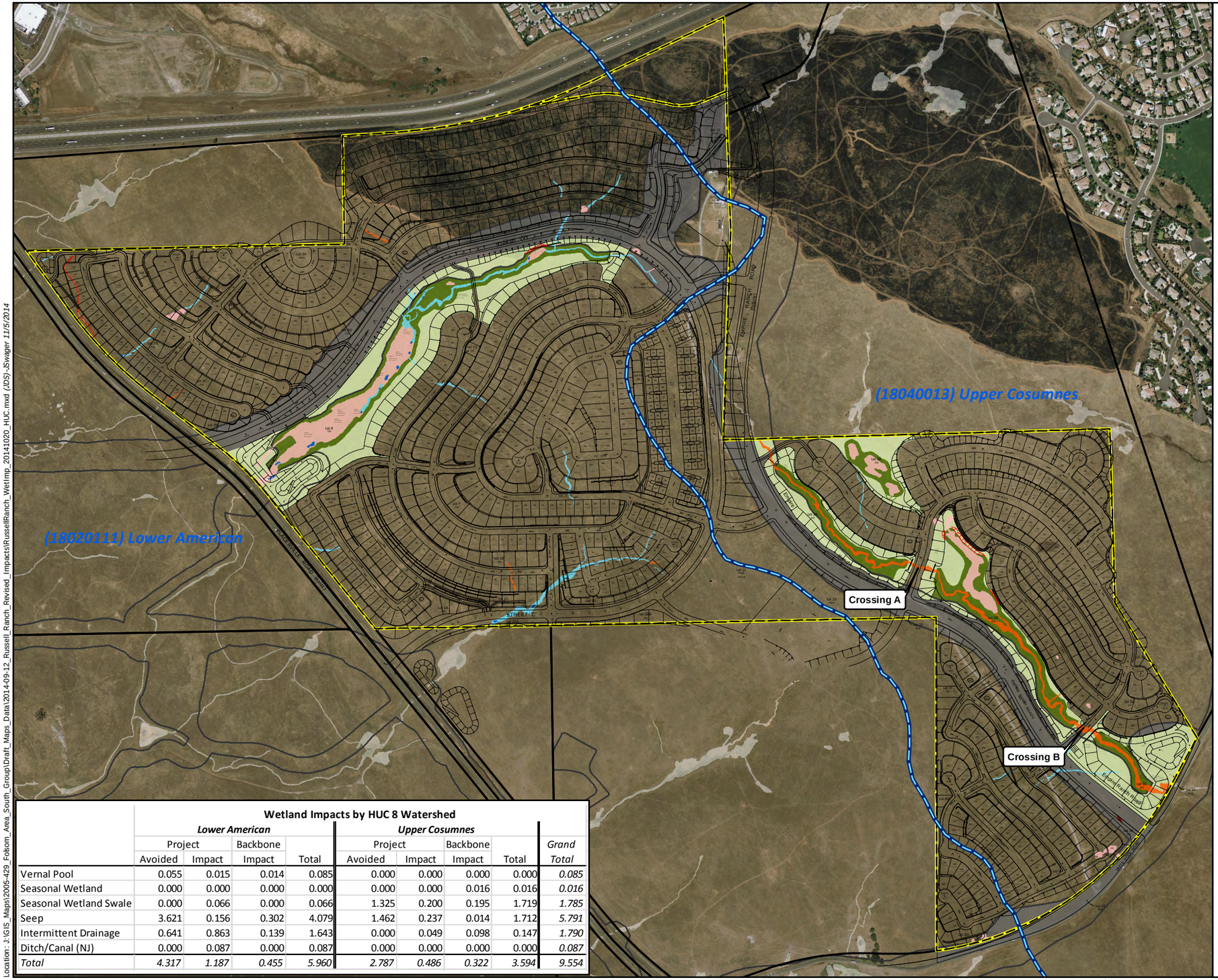
Impact 4.3-1 Federally-protected wetlands. Based on the analysis below with the implementation of mitigation, the impact is less than significant.

Implementation of the project would result in direct impacts from the loss of Waters of the U.S. resulting from the placement of fill material into approximately 1.673 acres (including 0.777 acre of impacts within the backbone infrastructure) of Federally-jurisdictional Waters of the U.S., including wetlands (see Figure 4. *Russell Ranch Wetland Impacts*). Waters of the U.S. that would be filled consist of 0.015 acre of vernal pools (including 0.014 acre of impacts within the backbone infrastructure), 0.016 acre of seasonal wetland (all of which is within the backbone infrastructure), 0.266 acre of seasonal wetland swale (including 0.195 acre of impacts within the backbone infrastructure), 0.393 acre of freshwater seeps (including 0.315 acre of impacts within the backbone infrastructure), and 0.913 acre of intermittent drainage channel (including 0.237 acre of impacts within the backbone infrastructure). In addition 0.087 acre of non-jurisdictional ditch/canal would also be filled by the project. Though the placement of fill material into these waters does not require a permit from USACE under Section 404 of the CWA, they are considered Waters of the State subject to the jurisdiction of the Central Valley RWQCB under the Porter-Cologne Act. The conversion of these Waters of the U.S. to uplands from the placement of fill material would result in a complete loss of the functions of the Waters of the U.S. It should be noted that the aforementioned acreages include the total impacted wetland acreage within the project site, including the wetlands impacted by the proposed project, as well as by implementation of the backbone infrastructure for the SPA within the project site.

In addition to direct impacts, the project would result in indirect effects on wetlands from increased urbanization and population, including reduction in water quality caused by urban runoff, erosion, and siltation, intrusion of humans and domestic animals, and introduction of invasive plant species that could result in habitat degradation. Wetlands and other waters would be indirectly affected by substantial grading and creation of impervious surfaces proposed for adjacent uplands. All portions of the project area would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. These earthmoving activities and resulting gradient changes across the project area could alter hydrologic patterns and adversely affect wetlands and drainage channels retained with the project area, as well as within the SPA, by altering hydration periods, peak flows, runoff volumes, and runoff durations.

The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other Waters of the U.S. (e.g. drainage channels) that would occur with project implementation constitutes a substantial adverse effect on Federally-jurisdictional Waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Removal of 0.087 acre of non USACE jurisdictional wetlands in the project area constitutes an adverse effect on Waters of the State subject to Central Valley RWQCB jurisdiction.

Figure 4. Project Impacts Per Watershed



Map Features

Waters
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Intermittent Drainage

Isolated/Non-Jurisdictional
- Ditch/Canal (NJ)

- USGS HUC 8 Watershed Boundary

Project Components
- Wetland Preserve
- Open Space
- Backbone
- Property Boundary

Areas where 25' buffer may need to be encroached upon toimplement slopes and/or retaining walls necessary to preserve the adjacent feature.

Areas where 25' buffer may be able to be expanded

Wetland Impacts

Jurisdictional	Project Avoided	Project Impact	Backbone Impact	Property Total
Vernal Pool	0.055	0.015	0.014	*0.085*
Seasonal Wetland	0.000	0.000	0.016	*0.016*
Seasonal Wetland Swale	1.325	0.266	0.195	*1.785*
Seep	5.083	0.393	0.315	*5.791*
Intermittent Drainage	0.641	0.913	0.237	*1.790*
Subtotal	*7.104*	*1.586*	*0.777*	*9.467*
Non-Jurisdictional				
Ditch/Canal (NJ)	0.000	0.087	0.000	*0.087*
Subtotal	*0.000*	*0.087*	*0.000*	*0.087*
Grand Total	*7.104*	*1.673* *	*0.777*	*9.554*

- Impact calculations are approximate and are based on the best available information to date.
- The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total acreage reported.

*** Includes 0.197 of temporay impacts associated with two swale crossings adjacent to Empire Ranch Rd.**

Crossing A; 0.084 ac.
Crossing B: 0.113 ac.

These crossings will be oversized culverts with natuaral substrate

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Map Date: 11/5/2014

Wetland Impacts by HUC 8 Watershed

	Lower American				*Upper Cosumnes*				
	Project		Backbone		Project		Backbone		*Grand*
	Avoided	Impact	Impact	Total	Avoided	Impact	Impact	Total	*Total*
Vernal Pool	0.055	0.015	0.014	0.085	0.000	0.000	0.000	0.000	*0.085*
Seasonal Wetland	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.016	*0.016*
Seasonal Wetland Swale	0.000	0.066	0.000	0.066	1.325	0.200	0.195	1.719	*1.785*
Seep	3.621	0.156	0.302	4.079	1.462	0.237	0.014	1.712	*5.791*
Intermittent Drainage	0.641	0.863	0.139	1.643	0.000	0.049	0.098	0.147	*1.790*
Ditch/Canal (NJ)	0.000	0.087	0.000	0.087	0.000	0.000	0.000	0.000	*0.087*
Total	*4.317*	*1.187*	*0.455*	*5.960*	*2.787*	*0.486*	*0.322*	*3.594*	*9.554*

2013-024 Russell Ranch

Scale in Feet
0 700

Photo Source: USGS 2013
[1] Mackay and Somps - Received 10/20/2014
MS_ETA-Russell _Ranch_Development_Wetland_Impact_Limit.dwg
MS_ETA-SPA_1_Backbone_Wetland_Impact_Limit.dwg
MS_ETA-P-CS_GD-RR-100214.dwg

Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Draft_Maps_Data\2014-09-12_Russell_Ranch_Revised_Impacts\RussellRanch_WetImp_20141020_HUC.mxd (JDS)_Swager 11/5/2014

As a result, the implementation of the proposed project would have a ***significant direct and indirect impact*** to any riparian habitat, seasonal wetlands, or vernal pools. Implementation of mitigation measures 4.3-1A, 4.3-1B, and 4.3-1C would reduce the proposed project's potential impacts to the loss and degradation of Waters of the U.S., including wetlands, and Waters of the State to a ***less than significant*** level.

Mitigation Measure(s)

4.3-1A Design Storm Water Drainage Plans and Erosion and Sediment Control Plans to Avoid and Minimize Erosion and Runoff to All Wetlands and Other Waters That Are to Remain in the Project Area and Use Low Impact Development Features

- To minimize indirect effects on water quality and wetland hydrology, the project applicant shall include a storm water drainage plan and an erosion and sediment control plan in the improvement plans and shall submit these plans to the City Public Works Department for review and approval. Before approval of these improvement plans, the project applicant shall obtain a National Pollutant Discharge Elimination System MS4 Municipal Stormwater Permit and Grading Permit, comply with the City's Grading Ordinance and County drainage and storm water quality standards, and commit to implementing all measures in their drainage plans and erosion and sediment control plans to avoid and minimize erosion and runoff into Alder Creek and all wetlands and other waters that would remain within the SPA.
- The project applicant shall implement storm water quality treatment controls consistent with the Storm Water Quality Design Manual for Sacramento and South Placer Regions (Sacramento Stormwater Quality Control Partnership 2007). Appropriate runoff controls such as berms, storm gates, off-stream detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants. Development plans shall incorporate Low Impact Development (LID) features, such as pervious strips, permeable pavements, bioretention ponds, vegetated swales, disconnected rain gutter downspouts, and rain gardens, where appropriate. Use of LID features is recommended by the EPA to minimize impacts on water quality, hydrology, and stream geomorphology. In addition, free-spanning bridge systems shall be used for all roadway crossings over wetlands and other waters that are retained in the on-site open space. These bridge systems would maintain the natural and restored channels of creeks, including the associated wetlands, and would be designed with sufficient span width and depth to provide for wildlife movement along the creek corridors even during high-flow or flood events.
- In addition to comply with City ordinances, the project applicant shall obtain a General Construction Storm Water Permit from the Central Valley RWQCB, prepare a Storm Water Pollution Prevention Plan (SWPPP), and implement Best Management Practices to reduce water quality effects during construction.
- Each project phase shall result in no net change to peak flows into Alder Creek and associated tributaries, or to Buffalo Creek, Carson Creek, and Coyote Creek. The project applicant shall establish a baseline of conditions for drainage on-site. The baseline-flow

conditions shall be established for 2-, 5-, 10-, and 20-year storm events. These baseline conditions shall be used to develop monitoring standards for the storm water system within the project area. The baseline conditions, monitoring standards, and a monitoring program shall be submitted to USACE and the City for their approval. Water quality and detention basins shall be designed and constructed to ensure that the performance standards are met and shall be designed as off-stream detention basins. Discharge sites into Alder Creek and associated tributaries, as well as tributaries to Carson Creek, Coyote Creek, and Buffalo Creek, shall be monitored to ensure that pre-project conditions are being met. Corrective measures shall be implemented as necessary. The mitigation measures will be satisfied when the monitoring standards are met for five consecutive years without undertaking corrective measures to meet the performance standard.

4.3-1B Secure Clean Water Act Section 404 Permit and Section 401 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State

- Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the project applicant shall secure all necessary permits obtained under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act and implement all permit conditions for the Russell Ranch project. All permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured and conditions implemented before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including Waters of the State, that potentially support Federally-listed species, or within 100 feet of any other Waters of the U.S. or wetland habitats, including Waters of the State. The project applicant shall adhere to all conditions outlined in the permits. The project applicant shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other Waters of the U.S. that would be removed, lost, and/or degraded with implementation of the project. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.
- All mitigation requirements to satisfy the requirements of the City and the Central Valley RWQCB, for impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE, shall be determined and implemented by the RWQCB before grading plans are approved.
- A water quality certification pursuant to Section 401 of the CWA will be required before issuance of the record of decision and before issuance of the Section 404 permit. Before construction in any areas containing wetland features, the project applicant shall obtain water quality certification for the project. Any measures required as part of the issuance of water quality certification shall be implemented.

4.3-1C Implement Section 1602 Master Streambed Alteration Agreement

- The project applicant shall amend, if necessary, and implement the original Section 1602 Master Streambed Alteration Agreement received from CDFW for all construction activities that would occur in the bed and bank of CDFW jurisdictional features within the project area. As outlined in the Master Streambed Alteration Agreement, the project applicant shall submit a Sub-notification Form to CDFW 60 days prior to the commencement of construction to notify CDFW of the project.
- Any conditions of issuance of the Master Streambed Alteration Agreement shall be implemented as part of project construction activities that adversely affect the bed and bank within drainage channels that are within the project area that is subject to CDFW jurisdiction. The agreement shall be executed by the project applicant and CDFW before the approval of any grading or improvement plans or any construction activities in any project phase that could potentially affect the bed and bank of on-site drainage channels under CDFW jurisdiction.

Valley Needlegrass Grassland

Impact 4.3-2. Valley Needlegrass Grassland. Based on the analysis below with the implementation of mitigation, the impact is less than significant.

As stated above under Section 3.4, purple needlegrass surveys were conducted for the project area on 9 and 10 June, 2014 by Foothill Associates, and Valley needlegrass grassland surveys were conducted on 29 July 2014 by ECORP (Attachment A). Approximately 0.5 acre of Valley needlegrass grassland was mapped within the project area within the southern portion of the project areas (ECORP 2014). The loss and degradation of Valley needlegrass grassland that would occur with project implementation constitutes an adverse effect on a sensitive natural community regulated by CDFW under Section 1602 of the California Fish and Game Code. Therefore, a ***direct and indirect significant impact*** would result. Implementation mitigation measure 4.3-2 would reduce the proposed project's potential impacts to the loss and degradation of valley needlegrass grassland to a ***less than significant*** level.

Mitigation Measure(s)

4.3-2 Valley Needlegrass Grassland Avoidance and Minimization Measures

The following measures shall be implemented to mitigate for losses of valley needlegrass grassland:

- Prior to ground-breaking activities, high visibility construction fencing should be placed around all Valley needlegrass grassland to be preserved. The construction fencing should not be removed until completion of construction activities.
- All Valley needlegrass grassland areas slated for removal should be replaced at a 1:1 acreage on-site within the open space areas.

- Needlegrass plants in areas slated for removal should be salvaged, to the extent feasible, and replanted within the open space areas. If this is infeasible, then seedlings/saplings from a local nursery should be obtained.
- A mitigation plan outlining methods to be used, success criteria to be met, and adaptive management strategies will be completed prior to project construction. At a minimum, unless agreed upon otherwise with regulatory agencies, the Valley needlegrass grassland creation areas shall be monitored twice annually for the first year and once annually for the four subsequent years for a total of five years; success criteria shall be established to ensure an 80% success rate is met by the fifth year, and adaptive management techniques shall be implemented to ensure that the 80% success rate is met by the fifth year or as otherwise agreed upon in consultation with CDFW. This plan may be combined with the Operations and Management Plan for the open space areas.

Special-Status Plant Species

Impact 4.3-3 Special-status plant species. Based on the results of the two years of protocol level surveys, the impact is less than significant.

Loss of suitable habitat as a result of project development could result in direct removal or mortality of special-status plants, if they are present. Project development could also result in indirect impacts on special-status plants including impacts caused by pollutants transported by urban runoff and other means, changes in vegetation as a result of changes in land use and management practices, altered hydrology from the construction of adjacent residential development and roadways, habitat fragmentation, and the introduction of invasive species or noxious weeds from surrounding development.

As stated above, protocol-level focused surveys for special-status plants have been conducted for the entire project area as part of the former Folsom South project (Foothill 2006 and 2009). The surveys focused on the following special-status plant species: Ahart's dwarf rush Boggs lake hedge-hyssop, Boggs lake hedge-hyssop, Brandegee's clarkia, dwarf downingia, legenere, pincushion navarretia, Sacramento Orcutt grass, Sanford's arrowhead, slender Orcutt grass, and Tuolumne button-celery. No special-status plant species were found during the 2006 surveys and the 2009 surveys conducted by Foothill Associates (Foothill 2006 and 2009). Thus, there are no ***direct or indirect impacts*** on special-status plant as a result of the proposed project's development and the impact to these species are considered ***less than significant***.

Valley Elderberry Longhorn Beetle

Impact 4.3-4 Valley Elderberry Longhorn Beetle. Based on the analysis below, the impact is less than significant.

The valley elderberry longhorn beetle is Federally-listed as threatened. USFWS in its biological opinion (BO) (#81420-2010-F-0620-1) for the entire SPA stated that no elderberry shrubs (*Sambucus* spp.) were identified within the former Folsom South project area (USFWS 2014). Thus,

no elderberry shrubs have been identified within the project area. As a result, ***no direct and indirect impacts*** to valley elderberry longhorn beetle would occur.

Vernal Pool Crustaceans

Impact 4.3-5 Vernal pool crustaceans. Based on the analysis below, the impact is less than significant.

The project area contains vernal pools, seasonal wetlands, and seasonal wetland swales that are considered potential habitat for vernal pool fairy shrimp, Conservancy fairy shrimp and vernal pool tadpole shrimp. Vernal pool tadpole shrimp and conservancy fairy shrimp are Federally-listed as endangered and vernal pool fairy shrimp is Federally listed as threatened.

Protocol-level surveys for vernal pool crustaceans (vernal pool fairy shrimp, Conservancy fairy shrimp, and vernal pool tadpole shrimp) (2007 wet season survey, 2008 dry season survey, and 2009 wet season survey) have been conducted for the project area as part of the former Folsom South project by Foothill Associates (Attachment B) and EcoAnalysts, Inc (Attachment C). Listed invertebrate species were not found during both of the wet season surveys (Foothill 2007 and 2009), and no listed or non-listed shrimp eggs were not recovered from the dry season soil samples (EcoAnalysts 2008). USFWS in its Biological Opinion (BO) (mentioned above) for the entire SPA concurred with the conclusions of the surveys and concluded that the former Folsom South project (which includes the Russell Ranch project area) would not directly impact vernal pool crustaceans (USFWS 2014).

Implementation of the project, including the backbone infrastructure within the project area, would permanently remove approximately 0.55 acre of potential habitat for special-status vernal pool crustaceans, which includes approximately 0.031 acre of vernal pools (0.016 acre of impacts from the backbone infrastructure), 0.016 acre of seasonal wetland (all impacts from the backbone infrastructure) and 0.503 acre of seasonal wetland swale (0.232 acre of impacts from the backbone infrastructure) (Figure 4). However, as stated in the BO, development of the project area, including impacts to vernal pool, seasonal wetland, and seasonal wetland swale habitat, would not directly impact vernal pool crustaceans (USFWS 2014).

Although there is potential for vernal pool crustaceans to occur within adjacent wetland habitats, vernal pool crustaceans have not been documented within properties surrounding the project area following protocol-level surveys for vernal pool crustaceans on all potential habitat. Therefore, no vernal pool crustaceans would be indirectly affected by project activities that occur adjacent to the wetland habitats surrounding the project area. In addition, it is not anticipated that construction associated with development of the proposed project would disrupt or eliminate hydrologic and biological connectivity that is important to support wetlands and associated wildlife species. As a result, the proposed project would have ***no direct or indirect impacts*** on vernal pool crustaceans as determined by the BO, therefore project impacts to vernal pool crustaceans is ***less-than-significant***.

Amphibians

Impact 4.3-6 Western Spadefoot. Based on the analysis below and implementation of mitigation measures, the impact is less than significant.

Western spadefoot surveys have not been conducted for the project area. They are known to occur in Mather Regional Park, more than five miles from the project area. Focused surveys for Western spadefoot were conducted in April 2006 on approximately 40% of the SPA and were not detected (Folsom and USACE 2010]). The aquatic habitats surveyed were determined to be unsuitable for Western spadefoot due to the abundance of predatory bullfrogs. Although habitat conditions may not be suitable for successful reproduction of Western spadefoot, the species may be present in vernal pools or other seasonal wetlands within the SPA and therefore within the project area. Implementation of the project, including the backbone infrastructure within the project area, would permanently remove approximately 0.55 acre of potential habitat for Western spadefoot; however, as stated above, the habitat is likely to not be suitable for successful reproduction. Western spadefoot, if they occur within the project area, could be indirectly affected by an increase in vehicular traffic on the site, which could result in mortality during dispersal or seasonal movements between aquatic and upland habitats. As a result, ***direct and indirect impacts*** to Western spadefoot are considered ***potentially significant***. Implementation of mitigation measures 4.3-6A and 4.3-6B would reduce impacts to Western spadefoot to a ***less than significant*** level.

Mitigation Measure(s)

4.3-6A Conduct Environmental Awareness Training for Construction Employees

- Prior to beginning construction activities, the project applicant(s) will employ a qualified biologist to develop and conduct environmental awareness training for construction employees. The training will describe the importance of onsite biological resources, including special-status wildlife habitats; potential nests of special-status birds; and roosting habitat for special-status bats. The biologist will also explain the importance of other responsibilities related to the protection of wildlife during construction such as inspecting open trenches and looking under vehicles and machinery prior to moving them to ensure there are no lizards, snakes, small mammals, or other wildlife that could become trapped, injured, or killed in construction areas or under equipment.
- The environmental awareness program will be provided to all construction personnel to brief them on the life history of special-status species in or adjacent to the project area, the need to avoid impacts on sensitive biological resources, any terms and conditions required by state and federal agencies, and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each person.

4.3-6B Conduct Preconstruction Western Spadefoot Survey

- The project applicant(s), shall retain a qualified biologist to conduct a preconstruction Western spadefoot survey within 48 hours of the initiation of construction activity within suitable habitat for Western spadefoot. If no Western spadefoot individuals are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.
- If Western spadefoot individuals are found, the qualified biologist shall consult with CDFW to determine appropriate avoidances measures.

Impact 4.3-7 California Tiger Salamander. Based on the analysis below, the impact is less than significant.

California tiger salamander is not expected to occur within the project area. Although there is potentially suitable breeding habitat in some vernal pools and seasonal wetlands and suitable uplands in the grasslands on-site, California tiger salamander have not been detected in Sacramento County north of the Cosumnes River (Folsom and USACE 2010). In a survey transect that extended along the west side of the Sacramento Valley from Shasta County to Solano County, California tiger salamanders were recorded only at the Jepson Prairie in Solano County (Folsom and USACE 2010). Surveys of vernal pool habitats on and near the project area have not incidentally detected California tiger salamander. Given that the closest known population is 15 miles to the south of the project area and the lack of known populations in the project region, it is unlikely for California tiger salamander to occur within the project area.

As a result, ***no direct or indirect impacts*** to California tiger salamander would occur.

Reptiles

Impact 4.3-8 Western Pond Turtle. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

Suitable habitat for Western pond turtle occurs in intermittent tributaries to Alder Creek within the project area; however, these drainages provide marginally suitable habitat as they are dry most of the year. Implementation of the project would fill approximately 1.188 acres of USACE jurisdictional intermittent drainages (0.275 acre of impacts from the backbone infrastructure) within the project area. Although the drainages provide marginally suitable habitat, there is still is potential for western pond turtles to occur. Thus, ***direct and indirect*** impacts to Western pond turtle are considered ***potentially significant***. Implementation of mitigation measures 4.3-6A and 4.3-8 would reduce impacts to western pond turtle to a ***less than significant*** level.

Mitigation Measure(s)

4.3-6A Conduct Environmental Awareness Training for Construction Employees

4.3-B Conduct Preconstruction Western Pond Turtle Survey

- The project applicant(s), shall retain a qualified biologist to conduct preconstruction western pond turtle survey within 48 hours of the initiation of construction activity within

suitable habitat for western pond turtle. If no western pond turtles are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.

- If western pond turtles are found, the qualified biologist shall capture and relocate the turtles to a suitable preserved location in the vicinity of the project.

Birds

Impact 4.3-9 Swainson's Hawk and Other Raptors. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

Swainson's hawk, a species state-listed as threatened, is one of several raptors that are likely to forage within the project area. However, nesting habitat for Swainson's hawk and other raptors is highly marginal within the project. In addition, Northern harrier, a California species of special concern has been documented foraging within the SPA, and has potential to occur in the project area (Folsom and USACE 2010). White-tailed kite, which is fully protected under the California Fish and Game Code, is also expected to nest and forage within the project area. In addition, golden eagle, California species of special concern, may forage within the project area outside of the breeding season. All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Common raptors that could nest within the project area include Cooper's hawk, American kestrel, red-tailed hawk, red-shouldered hawk, Western screech-owl, great horned owl, and barn owl.

Implementation of the project would have an adverse effect on marginal nesting and foraging habitat for raptors. A Swainson's hawk habitat evaluation survey was conducted by Foothill Associates on 9 and 10 June , 2014. Three cottonwood trees (*Populus* ssp.) occur within the project area and provide marginal suitable nesting habitat for Swainson's hawk and other raptors. One raptor nest was observed and a juvenile red-tailed hawk was observed during the site visits on 9 and 10 June, 2014 (Foothill 2014). The 421.28 acres of grassland habitat present within the project area is considered foraging habitat for raptors, including Swainson's hawk, and could be used for nesting by Northern harrier (Figure 5. *Russell Ranch Swainson's Hawk Foraging Habitat Impacts*). Approximately 409.69 acres of grassland habitat (68.39 acre of impact from the backbone infrastructure) would be directly impacted by the project. The grading, paving, and development in the project footprint could indirectly affect nesting and foraging raptors by reducing the population of the small mammal prey base of many raptors over the entire project area through conversion of natural vegetation cover. Large raptors generally require large areas of suitable foraging habitat. Implementation of the project would result in permanent impacts and temporary impacts (grading around roads and infrastructure) to grassland habitat present within the project area.

Figure 5. Russell Ranch Swainson's Hawk Foraging Habitat Impacts

Map Features

Waters
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Intermittent Drainage

Isolated/Non-Jurisdictional Features
- Ditch/Canal (NJ)

- SWHA Foraging

Project Components [1]
- Avoidance Area
- Backbone
- Property Boundary

SWHA Impacts

	Project		Backbone	Grand
	Avoided	Impact	Impact	Total
Foraging Habitat	11.60	341.30	68.39	421.28

NOTES:

- IMPACT CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE.

- THE ACREAGE VALUE FOR EACH FEATURE HAS BEEN ROUNDED TO THE NEAREST 1/1000 DECIMAL. SUMMATION OF THESE VALUES MAY NOT EQUAL THE TOTAL ACREAGE REPORTED.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Draft_Maps_Data\2014-07-23_Russell_Ranch_Wetland_Impacts_Draft\RussellRanch_SWHAImp_20140811.mxd (JDS)-JSwager 8/11/2014

2014-074 Russell Ranch (Raney)

Scale in Feet
0 900

Photo Source: USGS 2013
[1] Mackay and Somps

Map Date: 8/11/2014

In accordance with the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project a Swainson's Hawk Mitigation Plan is in the process of being prepared for the Russell Ranch project (Attachment W). As a consequence of direct loss of nesting and foraging habitat and indirect effects to nest success and foraging habitat quality, implementation of the project could eventually lead to the permanent displacement of some raptors from the project area. Therefore, the project would result in ***potentially significant direct and indirect impacts*** on Swainson's hawk and other raptors. Implementation of mitigation measures 4.3-6A and 4.3-9A would reduce the proposed project's potential impact during construction to Swainson's hawk and other raptors to a ***less than significant*** level. Additionally, implementation of mitigation measure 4.3-9B would reduce the proposed project's potential impact to Swainson's hawk foraging habitat to a **less than significant** level.

Mitigation Measure(s)

4.3-6A Conduct Environmental Awareness Training for Construction Employees

4.3-9A Conduct Preconstruction Swainson's Hawk and Other Raptor Surveys

- To mitigate impacts on Swainson's hawk and other raptors, a qualified biologist shall be retained to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the project area and active burrows within the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. To the extent feasible, guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. If no nests are found, no further mitigation is required.
- If active nests are found, impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with CDFW that reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.
- If active burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with CDFW. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrowing owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active

burrows contain eggs and/or young, no construction shall occur within 50 feet of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

4.3.9B Prepare and Implement Swainson's Hawk Mitigation Plan

- To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant shall identify permanent impacts to foraging habitat and prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.
- Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant, to the satisfaction of the City, will secure suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation (or other agreed upon ratio) of habitat value for Swainson's hawk foraging habitat that is permanently lost as a result of the project, as determined by the City after consultation with CDFW and a qualified biologist.
- The 1:1 habitat value (or other agreed-upon ratio) shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the project area. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. Such mitigation shall be accomplished through purchase of credits at an approved mitigation bank, or the transfer of fee title or perpetual conservation easement. If non-bank mitigation is proposed, the mitigation land shall be located within the known foraging area and within Sacramento County. The City, after consultation with CDFW, will determine the appropriateness of the mitigation land.
- The project applicant shall transfer said Swainson's hawk mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City, after consultation with CDFW. After consultation with CDFW and the Conservation Operator, the City shall approve the content and form of the conservation easement. The City, CDFW, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.
- After consultation with the City, The project applicant, CDFW, and the Conservation Operator, shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City for impacts on lands within the City's jurisdiction to an appropriate third-party nonprofit conservation agency, or they shall be

submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW.

- If the Conservation Operator ceases to exist, the duty to hold, administer, manage, maintain, and enforce the interest shall be transferred to another entity acceptable to the City and CDFW. The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's planning area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first ten years after establishment of the easement.

4.3-10 Burrowing owl. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

The 421.28 acres of grassland habitat present within the project area could also be used for nesting by burrowing owl (Figure 5). Approximately 409.69 acres of grassland habitat (68.39 acre of impact from the backbone infrastructure) would be directly impacted by the project. The grading, paving, and development in the project footprint could indirectly affect nesting through conversion of natural vegetation cover. Implementation of the project would result in permanent impacts and temporary impacts (grading around roads and infrastructure) to grassland habitat present within the project area. Thus, the project would result in ***significant direct and indirect impacts*** to burrowing owl. Implementation of mitigation measures 4.3-6A and 4.3-10 would reduce impacts to burrowing owl to a ***less than significant*** level.

Mitigation Measure (s)

4.3-6A Conduct Environmental Awareness Training for Construction Employees

4.3-10 Conduct Preconstruction Burrowing Owl Survey

- To mitigate impacts on burrowing owl, a qualified biologist shall be retained to conduct preconstruction survey to identify active burrows within the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. The preconstruction survey shall follow the protocols outlined in the Staff Report on Burrowing Owl Mitigation (CDFG 2012).
- If active burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with CDFW. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrow owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within 50 feet of the

burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

4.3-11 Tricolored blackbird. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

Nesting habitat for tricolored blackbird does not occur within the project area; however, suitable nesting habitat occurs south of White Rock Road within 500 feet of the project area. Tricolored blackbirds nest in colonies of hundreds to tens of thousands of individuals. Nesting colonies will often occur in the same location over many years, but colonies may also shift locations if nest failure occurs.

An abundant insect source near the nesting colony is an important habitat component and nesting colonies are often associated with dairies, feedlots, or wastewater treatment ponds. Several tricolored blackbird colonies are known from within five miles of the project area (Folsom and USACE 2010, CDFW 2014). Because suitable nesting habitat occurs within 500 feet of the project area, construction activity within the project area could disturb nesting tricolored blackbirds if an active off-site tricolored blackbird nesting colony were to be present during ground-disturbing activities. Disturbance during construction could result in nest abandonment and loss of eggs or young. Although the project would not directly impact to tricolored blackbird nesting habitat, indirect impacts could occur due to the location of suitable nesting habitat within the 500 feet of the project area. Thus, the project would have ***no direct impact***, but would be considered to have ***potentially significant indirect impacts***. Implementation of mitigation measures 4.3-6A and 4.3-11 would reduce the proposed project's potential indirect impact from construction to tricolored blackbird nesting colonies to a ***less than significant*** level.

Mitigation Measure(s)

4.3-6A Conduct environmental awareness training for construction employees

4.3.11 Conduct Preconstruction Tricolored Blackbird Nesting Survey

- To avoid and minimize impacts to tricolored blackbird off-site colonies, a qualified biologist shall conduct a preconstruction survey for any project activity that would occur during the tricolored blackbird's nesting season (1 March – 31 August). The preconstruction survey shall be conducted before any activity occurring within 500 feet of off-site colonies and potential on-site suitable nesting habitat, including freshwater marsh and areas of riparian scrub vegetation. The survey shall be conducted within 14 days before project activity begins.
- If no tricolored blackbird nesting activity is documented on-site or signs to disturbance to off-site colonies within 500 feet on project activities, no further mitigation is required. If nesting activity is found, the qualified biologist shall consult CDFW to establish a buffer around the nesting colony. No project activity shall commence within the buffer area until a qualified biologist confirms that the colony is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range

from 100 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

4.3-12 Other nesting birds. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

Other nesting birds have potential to occur within the project area. Grassland habitat within the project area provides suitable nesting habitat for grasshopper sparrow. Grassland habitat also provides suitable foraging habitat for loggerhead shrike. Individuals of this species may nest within the project area. While a potential loss of a few individuals is not likely to result in a substantial effect on their populations, if nesting individuals are present during construction, adverse impacts to individuals could occur. Thus, ***direct and indirect impacts*** of project implementation on these species are considered ***potentially significant.*** Implementation of mitigation measures 4.3-6A and 4.3-12 would reduce the proposed project's potential impact from construction to grasshopper sparrow, loggerhead shrike and other common nesting birds to a ***less than significant*** level.

Mitigation Measure(s)

4.3-6A Conduct environmental awareness training for construction employees

4.3-12 Preconstruction Nesting Bird Survey

- Conduct a preconstruction nesting bird survey of all suitable habitat on the Project site within 14 days prior to commencement of construction during the nesting season (1 February through 31 August). Suitable habitat includes annual grassland, valley needlegrass grassland, freshwater seep, vernal pool, seasonal wetland, and intermittent drainage habitat within the Project site.
- If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest tree, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary. Pre-construction nesting surveys are not required for construction activity outside of the nesting season.

Special-Status Bats

4.3-13 Special-Status bats. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

Several special-status bat species have potential to occur within the vicinity of the project area, including pallid bat, Townsend's big-eared bat, Western mastiff bat, and Western red bat. These species may forage over open grassland areas; however roosting habitat is typically a limiting factor to bat distribution. Western mastiff bat is unlikely to roost on-site due to habitat preference to use tall cliffs and rocks, which are absent from the site. Western red bats are found primarily in riparian

and wooded habitats. This species roosts in the foliage of trees that are often on the edge of habitats adjacent to streams (Pierson et.al. 2000) especially in cottonwoods, sycamore, and other broad-leaved deciduous riparian trees (Folsom and USACE 2010), this habitat is also absent from the site. There are no mine shafts within the project area that could provide potential roosting habitat for pallid bat, Townsend's big-eared bat, or other common bat species. Thus, there is no potential roosting habitat on-site for bat species. Loss of potential foraging habitat would result in ***less than significant direct and indirect impacts*** to bat species.

American Badger

4.3-14 American Badger. Based on the analysis below and with the implementation of mitigation, the impact is less than significant.

The American badger is a wide-ranging species that uses grassland and oak woodland habitats. The American badger has been documented adjacent to the project area by Matus (Folsom and USACE 2010), and nearly the entire SPA provides suitable habitat. It is unknown if the species currently occurs within the project area. Although implementation of the project would result in loss of habitat for the American badger, the loss of habitat from the project would not be likely to cause loss of individuals because there would still be adequate suitable foraging and denning habitat in the area to support the local population. Therefore, ***direct and indirect impacts*** to American badger are considered ***potentially significant.*** Implementation of mitigation measures 4.3-6A and 4.3-13 would reduce the proposed project's potential impact from construction American badger to a ***less than significant*** level.

Mitigation Measure(s)

4.3-6A Conduct Environmental Awareness Training for Construction Employees

4.3-14 Conduct Preconstruction American Badger Burrow Survey

- The project applicant(s) shall retain a qualified biologist to conduct preconstruction American badger burrow survey within 48 hours of the initiation of construction activity within the ponds. If no potential American badger burrows are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.
- If potential American badger burrows are found, the qualified biologist shall consult with CDFW to determine appropriate measures.

Wildlife Movement

4.3-14 Potential Interference with Wildlife Movement. Based on the analysis provided below, this impact is considered less than significant.

Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by

wildlife as movement corridors as these features can provide cover and access across a landscape. Alder Creek flows northwesterly from White Rock Road to Prairie City Road with the SPA. It is unknown to the extent to which this creek corridor is used by wildlife in the area for movement. However, none of the Alter Creek corridor is included in the project area and other drainage features within the project area do not support sufficient riparian vegetation cover and therefore do not provide valuable movement corridors. Annual grassland habitat present to the south of the SPA is currently used as rangeland and would remain undeveloped in the foreseeable future based on zoning under the Sacramento County General Plan. Due to the existing residential development in El Dorado County to the east and southeast of the project site, as well as White Rock Road to the south of the project site, the likelihood of wildlife species using the area as a migratory corridor is low. Although migratory wildlife would not be anticipated to utilize the project site, the adjacent open space to the south of the project site and the Alder Creek corridor, in conjunction with the preserved open spaces within the project site, would provide adequate opportunities for wildlife to avoid the proposed development areas. Areas to the north and east of Russell Ranch are already developed and do not provide natural habitat areas for wildlife. Regionally common wildlife species, such as coyote, fox, raccoon, skunk, and possum, are expected to continue to use the Alder Creek corridor after project implementation. There are no established migratory routes through the project area that are vital for the movement of any resident or migratory fish or wildlife species or population. Therefore, ***direct and indirect impacts*** on wildlife movement from the project are considered ***less than significant***.

Habitat Conservation Plan

4.3-15 Conflict with an Adopted Habitat Conservation Plan. Based on the analysis provided below, this impact is less than significant.

The South Sacramento Habitat Conservation Plan (SSHCP) is being prepared by the County of Sacramento. Project consistency with the SSHCP is not required under CEQA because the SSHCP has not been adopted. Furthermore, the proposed planning area for the SSHCP does not include the project area according to the notice of preparation issued on 28 October 2013 for the SSHCP EIR. Implementation of the project, including off-site elements, would not reduce the effectiveness of the proposed SSHCP's conservation strategy or adversely affect attainment of the goals and objectives of the SSHCP because the project are not included in the planning area and the SSHCP is not adopted. Therefore, there is no conflict with any adopted HCPs and ***no direct or indirect impacts*** would occur.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Other proposed and pending projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the most recent planned land uses within the vicinity of the project area, including the Folsom Plan Area SPA.

4.3-16 Cumulative loss of biological resources. Based on the analysis below, the cumulative impact is less than significant.

There are several large scale development projects in the general vicinity of the project including western El Dorado County, eastern Sacramento County and the City of Folsom. In addition, the Russell Ranch project is part of the long-term build out of the SPA. The geographic extent of cumulative impacts on wetlands (e.g., vernal pools, seasonal wetland swales, seeps) and other Waters of the U.S. (e.g., perennial and intermittent drainage channels), oak woodlands, and biological resources associated with these habitats includes the vernal pool and blue oak woodland regions of El Dorado County, Sacramento County, and neighboring counties that support similar biological resource values and functions to those of the project area.

Planned and proposed projects within El Dorado County, Sacramento County and the City of Folsom are anticipated to have substantial cumulative losses of wetlands (vernal pools, seasonal wetlands and swales) and other Waters of the U.S (intermittent and ephemeral drainages). Wetlands and other Waters of the U.S. provide habitat for special-status species. In addition, these projects would result in substantial cumulative losses of annual grassland and oak woodland habitats that support several special-status species. All projects with impacts to biological resources would contribute to the regional loss of aquatic, oak woodland and annual grassland habitats and special-status species. These projects would be required to implement project-specific mitigation measures to mitigate impacts to biological resources, including impacts to wetlands and other Waters of the U.S., oak woodlands and special-status species.

The Russell Ranch project would contribute to the regional loss of aquatic habitats that support special-status species, which could contribute to the incremental decline of these species. In addition, the Russell Ranch project would result in the regional loss of annual grassland, resulting in a loss of foraging habitat for raptors and wildlife species and nesting habitat for burrowing owl.

Full build out of the SPA, including the Russell Ranch, would result in impacts to biological resources; however, impacts would be reduced through designation of open space preserves within the SPA. There are approximately 85 acres of aquatic habitat, including vernal pools and other seasonal wetlands, seeps, ponds, and stream channels within the SPA. The SPA, as a whole, includes approximately 1,000 acres of open space preserve, and the majority of aquatic habitat on-site would be preserved in designated open space preserves. Russell Ranch includes approximately 18.65 acres of preserved area within the project area, which includes approximately 7.051 acres of Waters of the U.S., including wetlands, and approximately 11.60 acres of grassland. The preserved areas within the SPA would include the Alder Creek corridor located in the northwestern portion of the SPA. The designation of open space areas to preserve aquatic and blue oak woodland habitats would support special-status species on-site and in the vicinity of the SPA. Preservation of aquatic habitats on-site would contribute to reducing the SPA's contribution, including the Russell Ranch project, to regional cumulative loss of biological resources. As the proposed project would include more open space areas that what is currently anticipated for the site per the SPA, the proposed project's cumulative contribution towards cumulative impacts to biological resources would be less than what would occur from build out of the sit per the SPA.

The individual property owners (Project Applicants) within the SPA, including the Russell Ranch project, will also be responsible for implementing project-specific mitigation measures to reduce impacts to biological resources. As discussed above in Project-Specific Impacts and Mitigation Measures, all potentially significant impacts to biological resources for the Russell Ranch project can be mitigated to a less than significant level. As part of the required mitigation, all impacts to wetlands and Waters of the U.S. must be compensated for through on-site preservation and purchasing of off-site mitigation bank credits. The Russell Ranch project would compensate for all impacts to wetlands and Waters of the U.S. through purchasing of off-site mitigation bank credits at ratios designated by the USACE. In addition, mitigation measures, 4.3-6A, 4.3-6B, 4.3-8, and 4.3-9A, 4.3-9B, 4.3-10, 4.3-11, 4.3-12, and 4.3-14 would reduce the project's impacts to special-status species to less than significant. Mitigation measures for individual projects within the SPA have not yet been determined; however, it is likely the project applicants would be required to implement similar mitigation measures to reduce impacts to biological resources.

There are several planned projects within the region, including the Specific Plan, which will contribute to regional loss of biological resources. However, the Specific Plan, including the Russell Ranch project, incorporates a combination of habitat preservation and project-specific mitigation to reduce impacts to biological resources. As a result, the project's incremental contribution to the cumulative biological impact related to increasing urbanization would be ***less than significant***. No mitigation is required.

5.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – Valley Needlegrass Grassland Survey (ECORP)

Attachment B – Results of a Focused Plant Survey on the Folsom South Site, Located in Sacramento County, California (Foothill and Associates 2006)

Attachment C – Results of a Focused Plant Survey on the Folsom South Site, Located in Sacramento County, California (Foothill and Associates 2009)

Attachment D – Proposed Folsom Plan Area Specific Plan Project Biological Opinion

Attachment E – Swainson's hawk Mitigation Plan (Draft - Foothill and Associates 2014)

ATTACHMENT A

VALLEY NEEDLEGRASS GRASSLAND SURVEY (ECORP)

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

24 October 2014

Mr. Pierre Martinez
The New Home Company
2220 Douglas Blvd, Suite 240
Roseville, California 95661

RE: Russell Ranch Needlegrass Grassland Survey

Dear Mr. Martinez:

At the request of The New Home Company, Foothill Associates (Foothill) conducted a survey for purple needlegrass plants within the project site (Attachment A), in response to Mitigation Measure 3A.3-4b of the EIR/EIS. However, the Mitigation Measure requires surveys for Valley needlegrass grassland vegetation communities as opposed to individual plants. Therefore, at the request of The New Home Company, ECORP Consulting, Inc. (ECORP) conducted a review of the locations of the needlegrass plants identified by Foothill to determine which of these locations supported a Valley needlegrass grassland community.

Methods

The Foothill needlegrass plant survey was conducted on June 9 and 10, 2014, and the ECORP Valley needlegrass grassland survey was conducted on July 29, 2014 by ECORP senior botanist Daria Snider. For the purposes of this survey, Valley needlegrass grassland is defined as areas supporting a minimum 10% cover of purple needlegrass (*Stipa pulchra*), nodding needlegrass (*S. cernua*), or foothill needlegrass (*S. lepida*). This definition was developed based on the description of purple needlegrass grassland vegetation association in the *Manual of California Vegetation, Second Edition* (Sawyer, et al., 2009). The minimum mapping unit used for this survey was 0.05 acre. This minimum mapping unit was chosen in the field based on the biologists' best professional opinion of the community size that would be large enough to sustain the population of the component species over time. Valley needlegrass grassland areas were mapped in the field using a GPS unit capable of sub-meter accuracy (Trimble GeoXT).

Results

Approximately 0.50 acre of Valley needlegrass grassland was found and mapped within the project site, primarily associated with the drainages (Figure 1 – *Russell Ranch Purple Needlegrass Impacts*). In addition to nodding needlegrass, species within these areas are primarily native and nonnative species characteristic of the surrounding annual grassland community.

Impacts and Recommended Mitigation

Table 1 – Purple Needlegrass Impacts

Type	Existing Acreage	Impacted Acreage	Avoided Acreage
Project Area	0.47	0.12	0.35
Backbone Infrastructure	0.03	0.03	0.00
Total:	**0.49**	**0.15**	**0.35**

The following measures are recommended to mitigate for impacts to Valley needlegrass grassland:

- Prior to ground-breaking activities, high visibility construction fencing should be placed around all Valley needlegrass grassland to be preserved. The construction fencing should not be removed until completion of construction activities.
- All Valley needlegrass grassland areas slated for removal should be replaced at a 1:1 acreage onsite within the preserve areas.
- Needlegrass plants and seed in areas slated for removal should be salvaged, to the extent feasible, and replanted/reseeded within suitable preserve areas. If this is infeasible, then locally sourced seed of Foothill needlegrass, nodding needlegrass, or purple needlegrass should be obtained and used to seed suitable preserve areas.
- The Valley needlegrass grassland creation areas shall be monitored once annually for the three years following replanting/seeding. At the end of the three year establishment period, successful creation areas must support a minimum of 10% cover of Foothill needlegrass, nodding needlegrass, or purple needlegrass.

Please feel free to call me at (916) 782-9100 if you have any questions regarding this issue.

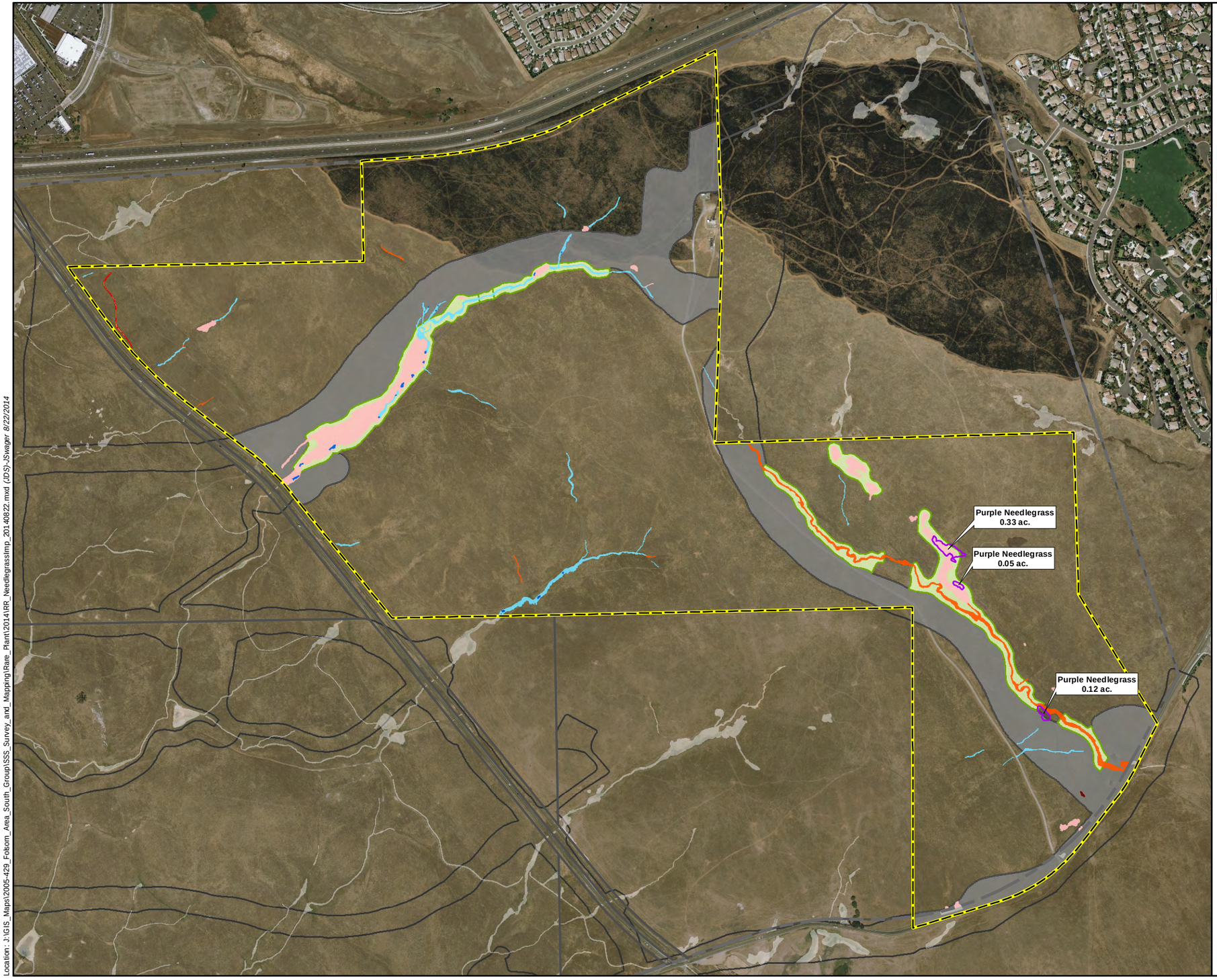
Sincerely,

Daria Snider
Senior Biologist/Botanist

References

Sawyer, J.O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California

Figure 1. Russell Ranch
Purple Needlegrass Impacts



Map Features

Waters
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Intermittent Drainage

Isolated/Non-Jurisdictional Features
- Ditch/Canal (NJ)

Project Components [1]
- Avoidance Area
- Backbone
- Property Boundary

Rare Plants
- Purple Needlegrass

Purple Needlegrass Impacts

Project	Acres
Avoided	0.35
Impact	0.12
Total	*0.47*
Backbone	**Acres**
Impact	0.03
Grand Total	***0.49***

NOTES:

- IMPACT CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE.

- THE ACREAGE VALUE FOR EACH FEATURE HAS BEEN ROUNDED TO THE NEAREST 1/1000 DECIMAL. SUMMATION OF THESE VALUES MAY NOT EQUAL THE TOTAL ACREAGE REPORTED.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\SSS_Survey_and_Mapping\Rare_Plant\2014\RR_Needlegrassimp_20140822.mxd (JDS)-JSwiger 8/22/2014

2013-024 Russell Ranch

Scale in Feet
0 1,000

Photo Source: USGS 2013
[1] Mackay and Somps

Map Date: 8/22/2014

ATTACHMENT A

Russell Ranch Project Purple Needlegrass Surveys (Foothill and Associates July 9, 2014)

July 9, 2014

Pierre Martinez, AICP
The New Home Company
2220 Douglas Blvd., Suite 240
Roseville, CA 95661

RE: Russell Ranch Project Purple Needlegrass Surveys

Dear Mr. Martinez:

The purpose of this report is to document the results of the purple needlegrass (*Nassella pulchra*) surveys and to recommend mitigation measures for the approximately 423-acre Russell Ranch Project (Proposed Project), in the City of Folsom, California. The project site is part of the Folsom South of U.S. Specific Plan Environmental Impact Report / Environmental Impact Statement (EIR/EIS) (AECOM 2011). At the request of TNHC Russell Ranch LLC, Foothill Associates conducted surveys for purple needlegrass within the project site, in accordance with Mitigation Measure 3A.3-4b of the EIR/EIS.

Methodology

Foothill Associates' Senior Biologist Kelly Bayne, M.S., conducted surveys of the project site on June 9 and 10, 2014. Ms. Bayne walked transects throughout the project site and mapped purple needlegrass locations with a Trimble GeoXT Global Positioning System (GPS) hand-held unit. The GPS data were downloaded from the unit and differentially corrected utilizing Trimble Pathfinder Office software and appropriate base station data, and then converted to ESRI® shape file format. Data are typically exported to the Geographic Information System (GIS) software in the State Plane coordinate system (NAD 83) with units as "survey feet." Within the GIS, data are edited and linear features are built into polygons using recorded width information. All purple needlegrass feature shape files are merged to create a single file with calculated acreages.

Results

Approximately 2.12 acres of purple needlegrass occurs within the project site and are generally found paralleling the primary drainage corridors of the project site (**Figure 1**). Of the approximately 2.12 acres, approximately 0.49 acre will be impacted by the Proposed Project (**Figure 2**).

Recommended Avoidance and Mitigation Measures

Since purple needlegrass was found on the project site, consultation with the California Department of Fish and Wildlife (CDFW) and the City of Folsom (City) is required to determine appropriate mitigation measures. The EIR/EIS specifies that the mitigation measures shall include one or more of the following components to achieve no net loss of valley needlegrass grassland acreage: establishment of valley needlegrass grassland within project's open space areas currently characterized by annual grassland, establishment of valley needlegrass grassland off-site, or preservation and enhancement of existing valley needlegrass grassland either on or off the Folsom South of U.S. Specific Plan Area.

The following measures are recommended to avoid or mitigate for impacts to purple needlegrass:

- Prior to ground-breaking activities, high visibility construction fencing should be placed around all purple needlegrass areas to be preserved. The construction fencing should not be removed until completion of construction activities.

- All purple needlegrass areas slated for removal should be replaced at a 1:1 acreage onsite within the area labeled as "Preserve" in **Figure 2**.

- Purple needlegrass plants in areas slated for removal should be salvaged to the extent feasible and replanted within the "Preserve". If this is infeasible, then seedlings/saplings from a local nursery should be obtained.

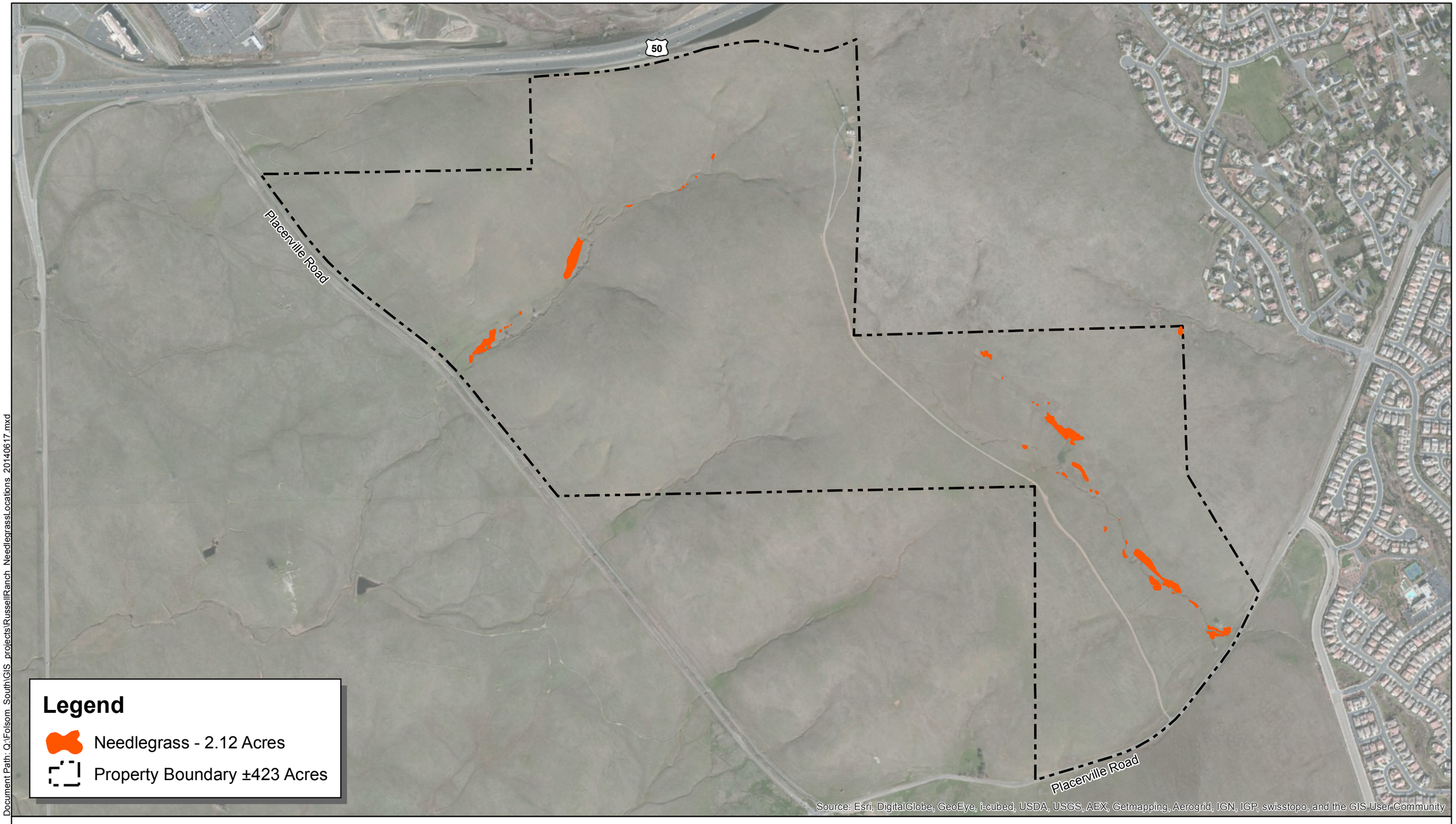
- A mitigation plan outlining methods to be used, success criteria to be met, and adaptive management strategies will be completed prior to project construction. At minimum, the purple needlegrass creation areas shall be monitored twice annually for the first year and once annually for the four subsequent years for a total of five years, success criteria shall be established to ensure an 80 percent success rate is met by the fifth year, and adaptive management techniques shall be implemented to ensure that the 80 percent success rate is met by the fifth year. This plan may be combined with the Operations and Management Plan for the open space preserves.

If you have any questions regarding the results and mitigation measures summarized within this report, please feel free to contact me at (916) 435-1202 or email kbayne@foothill.com.

Sincerely,

Kelly Bayne
Senior Biologist

Enclosures



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RUSSELL RANCH NEEDLEGRASS LOCATIONS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2014

N

0 750 1,500
SCALE IN FEET

DRAWN BY: MUB
DATE: 06/17/2014

FIGURE 1

Document Name: RussellRanch_NeedlegrassLocations_20140617 : 6/17/2014 12:45:45 PM

Placerville Road

50

Placerville Road

Legend

Proposed Development

Property Boundary ±423 Acres

Preserve ± 23 Acres

Project Impact Area ± 330 Acres

Backbone Impacts ± 70 Acres

Needlegrass

Preserved - 1.63 Acres

Impacted - 0.49 Acres

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Document Path: Q:\Folsom_South\GIS_projects\RussellRanch_Impact_Needlegrass_20140617.mxd

RUSSELL RANCH NEEDLEGRASS IMPACTS

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© 2014

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SCALE IN FEET

DRAWN BY: MUB
DATE: 06/17/2014

FIGURE 2

Document Name: RussellRanch_Impact_Needlegrass_20140617 : 6/17/2014 1:13:04 PM

ATTACHMENT B

RESULTS OF A FOCUSED PLANT SURVEY ON THE FOLSOM SOUTH SITE,
LOCATED IN SACRAMENTO COUNTY, CALIFORNIA (FOOTHILL 2006)

June 22, 2006

Mike McDougall
MJM Properties
1037 Suncast Lane, Suite 111
El Dorado Hills, CA 95762

Subject: Results of a Focused Plant Survey on the Folsom South Site, Located in Sacramento County, California

Dear Mr. McDougall:

This report summarizes the results of a focused survey for special-status plants on the Folsom South site located in eastern Sacramento County, California. Special-status plants surveyed for on the site include Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Sacramento Orcutt grass (*Orcuttia viscida*), slender Orcutt grass (*Orcuttia tenuis*), and Tuolumne button-celery (*Eryngium pinnatisectum*).

Site Location and Description

The site is located within eastern Sacramento County and consists primarily of annual grassland and oak woodland habitats with various wetland communities contained within these two primary vegetation communities. The site is located within Township 9 North, Range 8 East, in Sections 9, 10, 15, 16, 17, 20, 21, and 22 of the USGS 7.5-minute series Folsom, Folsom SE, Clarksville, and Buffalo Creek topographic quadrangles (**Figure 1**).

Special-Status Plants

All special-status plant species surveyed for on the Folsom South site occur in seasonal wetland habitat such as vernal pools and depressional seasonal wetlands or on the margins of more perennial features such as marshes.

Ahart's Dwarf Rush

Ahart's dwarf rush, a CNPS List 4 species (plants of limited distribution), is an annual grass-like herb. It is a member of the rush family (Juncaceae). It occurs on the margins of vernal pools in grassland areas. Generally, this species occurs in valley and foothill grasslands in mesic areas. It is known only from six occurrences and is threatened by development (CNPS 2001). The identification period for this species is April through May. There are no CNDDB records for this species occurring within five miles of the site (CNDDB 2006).

Boggs Lake Hedge-Hyssop

Boggs lake hedge-hyssop is a California endangered species (SE) and a CNPS list 1B species (Plants Rare, Threatened, or Endangered in California and Elsewhere). It is a member of the figwort family (Scrophulariaceae). It is an annual herb that is found in shallow, freshwater conditions and usually occurs in vernal pool habitats. The typical identification period is from April through August (CNPS 2001). The flowers of this species are yellow with white on the lower 3 lobes. There is one CNDDB record for this species within five miles of the site (CNDDB 2006).

Dwarf downingia

Dwarf downingia is a CNPS list 2 species (Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere). It is a member of the bellflower family (Campanulaceae). It is an annual herbaceous species that blooms from April through June (CNPS 2001). The flower of this species is 3-lobed with yellow spots near the throat and the lobes of the flower are white or blue. This species requires shallow, fresh-water conditions and usually occurs in vernal pool habitat. There are no records in the CNDDB for this species within five miles of the site (CNDDB 2006).

Legenere

Legenere is a CNPS 1B species. It is a member of the bellflower family. It is an annual herbaceous species. This species can be emergent or terrestrial. Legenere typically occurs in vernal pool habitat types. The typical identification period is May through June (CNPS 2002). The flowers of this species are typically white with triangular leaves. There are no records in the CNDDB for this species within five miles of the site (CNDDB 2006).

Pincushion Navarretia

Pincushion navarretia is a CNPS 1B species. It is a member of the phlox family (Polemoniaceae). It is small annual herb. The typical identification period for this species is in May. It is found along the margins of vernal pools. The known distribution for this species is small with only four known locations of this species in Amador, Merced, and Sacramento counties. The flowers are tubluar and white in color. The bracts on the inflorescence are long and extend well beyond the flower head. There is one record in the CNDDB for this species within five miles of the site (CNDDB 2006).

Sacramento Orcutt Grass

Sacramento Orcutt grass, a federally endangered (FE) and CNPS 1B species, is a small, densely tufted annual member of the grass family (Poaceae). It grows 1 to 4 inches in height. The plant is covered with small glandular hairs and is sticky even when young and more so at maturity. It has few to many slender stems and a spike-like inflorescence which is congested at the apex. This plant species typically blooms later into the growing season and will not produce flowers often until July. The blooming period is considered April through July. There are three records in the CNDDB for this species within five miles of the site (CNDDB 2006). This species is highly threatened by competition with non-native grasses, urban development, and overgrazing.

Slender Orcutt Grass

Slender Orcutt grass, a FE and CNPS 1B species, is an annual herb that blooms from May through October and is known from fewer than 20 occurrences (CNPS 2001). It is a member of the grass family. This grass occurs in the bottom of vernal pools associated with valley grassland, blue oak woodland, and lower montane coniferous forest. Orcutt grasses require large pools that hold standing water for long periods of time; therefore, shallow, early-drying pools can be eliminated as possible sites for the occurrence of plants in this genus (Crampton 1959). Orcutt grasses germinate and grow submerged under water for several weeks to three months (USFWS 2003). There are no records in the CNDDB for this species within five miles of the site (CNDDB 2006).

Tuolumne Button-celery

Tuolumne button-celery, a CNPS 1B species, is an annual herb found in vernal pools of the foothills of the Sierra Nevada Range. It is a member of the carrot family (Apiaceae). This species is known to occur in Sacramento, Amador, Calaveras, and Tuolumne counties in cismontane woodland, lower montane coniferous forests, and other mesic areas. The typical identification period is June through August. There are no CNDDB records for this species within five miles of the site (CNDDB 2006).

Methods

Prior to conducting the survey, a California Natural Diversity Database records search for the target species was reviewed (**Figure 3**), and soil units mapped by NRCS were reviewed (**Figure 2**). In accordance with the CNPS Botanical Survey Guidelines, the survey was conducted by personnel with experience with conducting floristic surveys; knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate state and federal statutes related to plants and plant collecting; and experience with analyzing impacts of project activities on native plants and plant communities.

The entire site was examined to determine whether suitable habitat was present in any given area for the special-status plant species in question. Those areas of the site that did not contain suitable habitat for the species in question were not surveyed. Greater emphasis was given to examining those areas of the site that were mapped as containing seasonal wetland or vernal pool habitat. The survey was divided into two survey windows to include both early and late-blooming species that could occur on the site. Plant surveys were conducted on the site on May 5, May 18, June 7, and June 20, 2006. While conducting the survey, Foothill Associates' biologists composed a comprehensive botanical survey species list of all plant species observed on the site (**Appendix A**).

References

The following available information pertaining to the natural resources of the region was reviewed for the survey and preparation of this report.

- California Department of Fish and Game (CDFG). 2005b. Habitat Conservation Planning Branch. *Species Account for Sacramento Orcutt Grass.* Available at: http://www.fws.gov/sacramento/es/plant_spp_accts/sacramento_orcutt_grass.htm
- CDFG. 2006. *California Natural Diversity Database*. Sacramento, CA.
- Crampton, B. 1959. *The grass genera Orcuttia and Neostapfia: A study in habitat and morphological specialization.* Madrono 15:97-110.
- Hickman, James C. (Ed). *The Jepson Manual: Higher Plants of California.* 1993. University of California Press, Berkeley, CA.
- http://www.dfg.ca.gov
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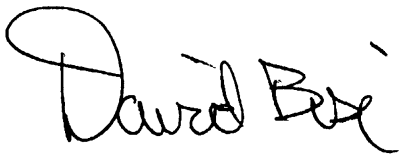
- Munz, Philip, A. 1968. *A California Flora and Supplement.* University of California Press, Berkeley, CA.
- Nakamura, G. and Nelson, J. Eds. 2001. *Selected Rare Plants of Northern California.* University of California Agricultural and Natural Resources, Oakland, CA.
- Sawyer, J. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation.* California Native Plant Society, Sacramento, CA.
- U.S. Fish and Wildlife Service. 2005. Sacramento Fish and Wildlife Office Species Account. Sacramento Orcutt Grass. Last updated May 5, 2005.
- U.S. Geological Survey. 1953. Photorevised 1980. *Clarksville, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.
- U.S. Geological Survey. 1954. Photorevised 1980. *Folsom SE, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.
- U.S. Geological Survey. 1967. Photorevised 1980. *Buffalo Creek, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.
- U.S. Geological Survey. 1967. Photorevised 1980. *Folsom, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.

Results

None of the special-status plants included in this survey were found on the Folsom South site.

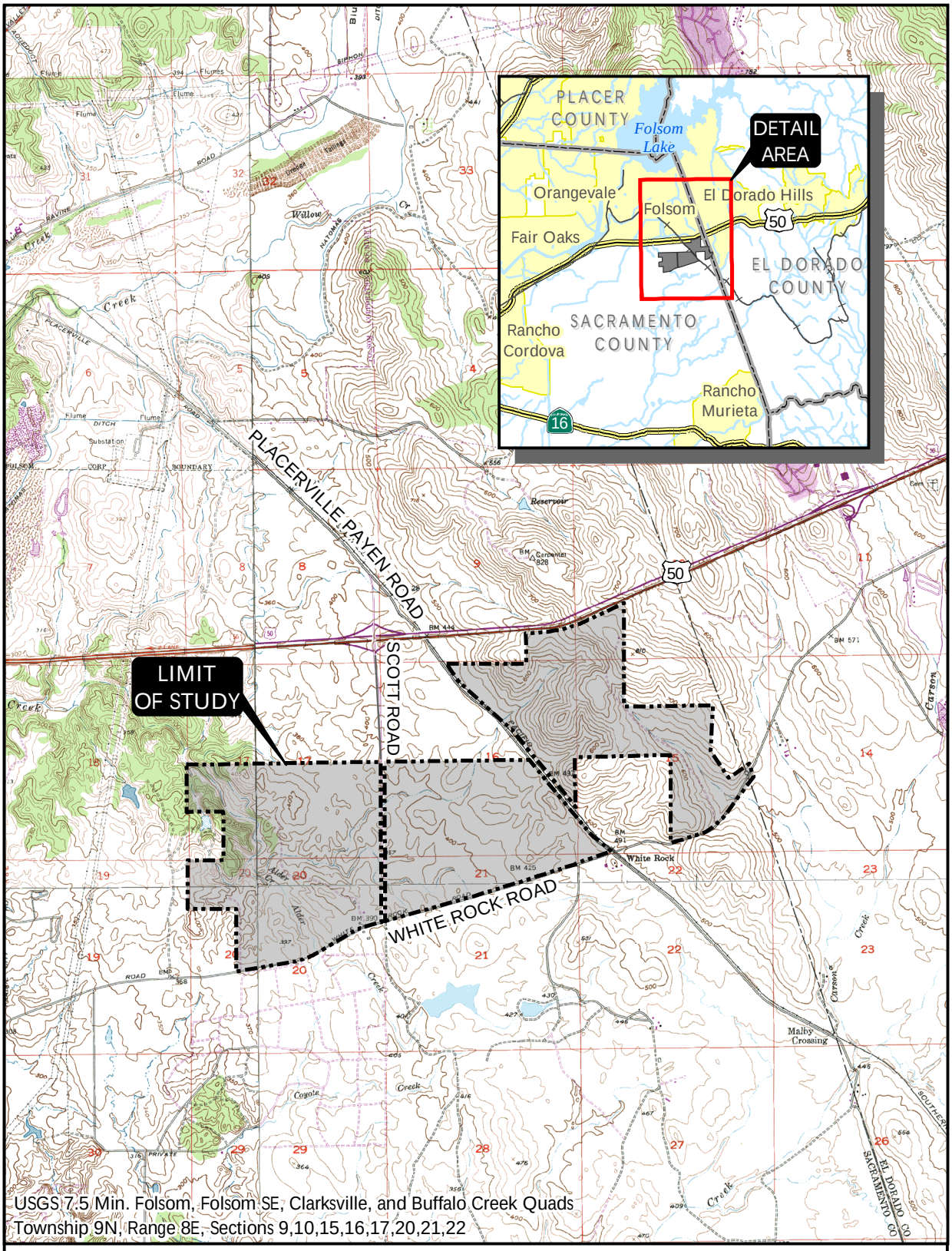
If you have any questions, please feel free to contact me.

Sincerely,



David Bise
Biologist

DRAFT



SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

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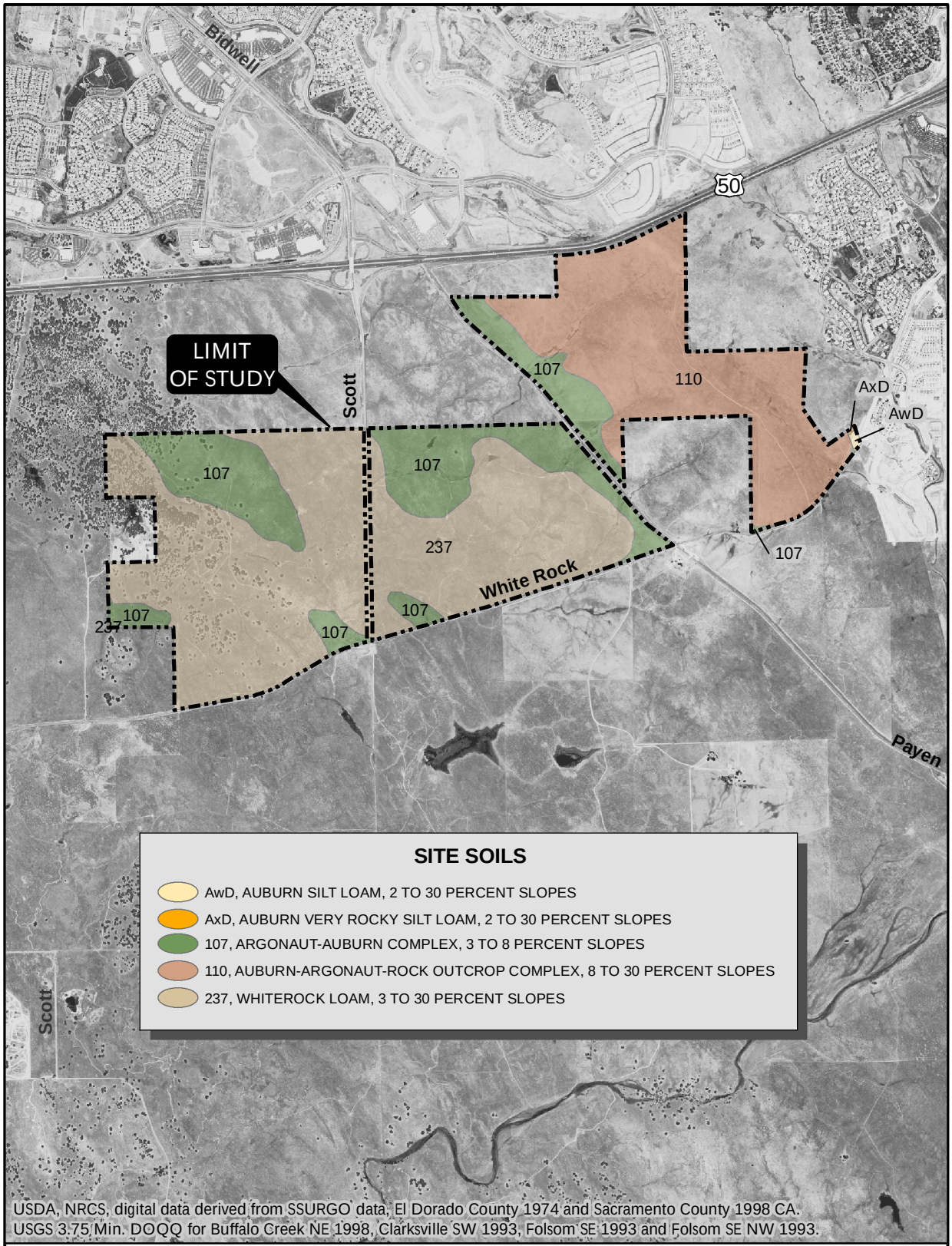
Drawn By: BF, AH
Date: 04/26/06

FIGURE 1

FOLSOM SOUTH

site_and_vicinity_r042606.mxd

© 2006



USDA, NRCS, digital data derived from SSURGO data, El Dorado County 1974 and Sacramento County 1998 CA.
USGS 3.75 Min. DOQQ for Buffalo Creek NE 1998, Clarksville SW 1993, Folsom SE 1993 and Folsom SE NW 1993.

SOILS

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LANDSCAPE ARCHITECTURE

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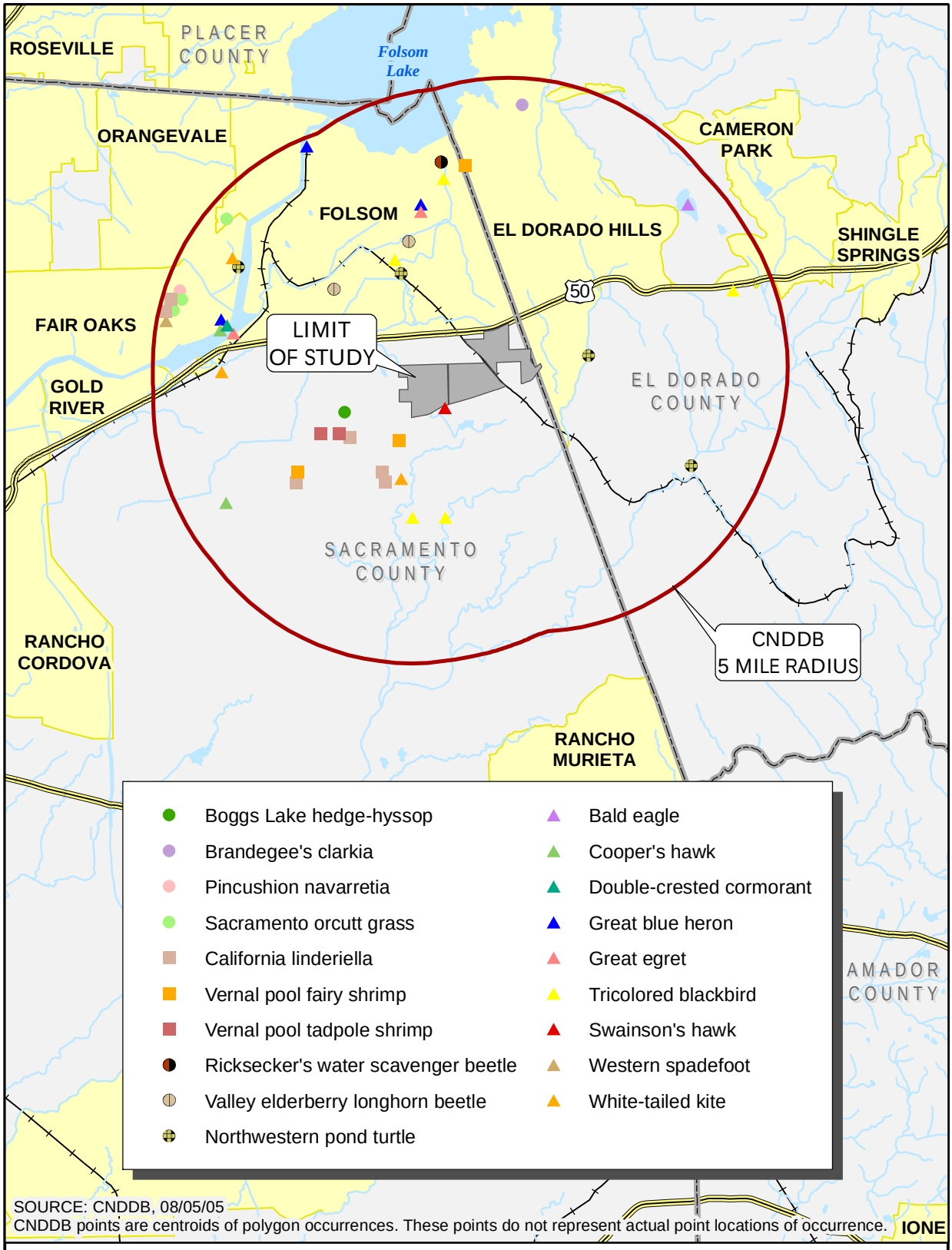
Drawn By: MMJ, AH
Date: 04/26/06

FIGURE 2

FOLSOM SOUTH

soil_r042606.mxd

© 2006



SOURCE: CNDDB, 08/05/05
CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

CNDDB

FOOTHILL ASSOCIATES
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SCALE IN MILES

Drawn By: MMJ, AH
Date: 04/26/06

FIGURE 3

FOLSOM SOUTH

cnddb_r042606.mxd

© 2006

Appendix A — Botanical Survey Species List

Scientific Name	Common Name
Achillea millefolium	Common yarrow
Agoseris heterophylla	Annual false dandelion
Aira caryophyllea	Silver hairgrass
Alopecurus saccatus	Foxtail
Amsinkia menziesii var. *intermedia*	fiddleneck
Anagallis arvensis	Scarlet pimpernel
Avena sp.	Wild oats
Briza minor	Rattlesnake grass
Bromus diandrus	Ripgut brome
Bromus hordeaceous	Soft chess
Callitriche marginata	Water starwort
Carduus pycnocephalus	Italian thistle
Castilleja attenuata	Valley tassels
Centaurea solstitialis	Yellow star-thistle
Chamomilla suaveolens	Pineapple weed
Claytonia parviflora	Streambank springbeauty
Convolvulus arvensis	Bindweed
Cynodon dactylon	Bermudagrass
Deschampsia danthonioides	Annual hairgrass
Dichelostemma capitatum	Blue dicks
Digitaria ischaemum	Smooth crabgrass
Downingia ornatissima	Downingia
Eleocharis macrostachya	Spikerush
Epilobium angustifolium	Fireweed
Erodium botrys	Filaree
Erodium cicutarium	Filaree
Eryngium vaseyi	Coyote thistle
Galium sp.	Bedstraw
Geranium dissectum	Cutleaf geranium
Geranium molle	Dove's foot geranium
Glyceria occidentalis	Western mannagrass
Gratiola ebracteata	Hedge-hyssop
Hemizonia fitchii	Fitch's tarplant
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley
Hordeum murinum	Barley
Hypochaeris radicata	Rough cat's-ear
Juncus balticus	Baltic rush
Juncus bufonius	Common toad rush
Juncus mexicanus	Mexican spikerush

Scientific Name	Common Name
Juncus xiphoides	Iris-leaved rush
Lasthenia fremontii	Goldfields
Lasthenia glaberrimia	Smooth goldfields
Layia sp.	Layia
Lepidium nitidum	Shining peppergrass
Limnanthes sp.	Meadowfoam
Linaria vulgaris	Butter-and-eggs
Lolium perenne	Italian ryegrass
Ludwigia peploides	Water primrose
Lupinus sp.	Lupine
Lythrum hyssopifolia	Loosestrife
Marsilea vestita ssp. *vestita*	Hairy pepperwort
Medicago lupalina	Black medic
Micropus californicus var. *californicus*	Slender cottonweed
Medicago polymorpha	California burclover
Mimulus guttatus	Monkeyflower
Navarretia leucocephala	Navarretia
Poa annua	Annual bluegrass
Petrorhagia dubia	Hairy pink
Plagiobothrys stipitatus	Popcornflower
Plagiobothrys fulvus	Fulvous popcornflower
Plantago lanceolata	English plantain
Pogogyne zizyphoroides	Sacramento mesamint
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	Wooly marbles
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizeni	Interior live oak
Ranunculus bonariensis	Buttercup
Ranunculus muricatus	Spiny-fruit buttercup
Raphanus sativus	Field mustard
Rumex crispus	Curly dock
Rumex pulcher	Fiddle dock
Salix lasiolepsis	Arroyo willow
Stellaria media	Chickweed
Taraxacum officianalis	Common dandelion
Torilis arvenis	Field hedge-parsley
Trifolium hirtum	Rose clover
Trifolium depauperatum	Cowbag clover
Triphysaria eriantha	Johnnytuck
Triteleia hyacinthina	White broadiaea
Triteleia laxa	Ithuriels's spear

Scientific Name	Common Name
Typha sp.	Cattail
Vulpia myruros	Foxtail fescue

sp. = species
ssp. = sub species

DRAFT

ATTACHMENT C

RESULTS OF A FOCUSED PLANT SURVEY ON THE FOLSOM SOUTH SITE, LOCATED IN SACRAMENTO COUNTY, CALIFORNIA (FOOTHILL 2009)

July 2, 2009

Mike McDougall
MJM Properties
1037 Suncast Lane, Suite 111
El Dorado Hills, CA 95762

Subject: Results of a Focused Plant Survey on the Folsom South Site, Located in Sacramento County, California

Dear Mr. McDougall:

This report summarizes the results of a focused survey for special-status plants on the Folsom South site located in eastern Sacramento County, California. Special-status plants surveyed for on the site include Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeae*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Sacramento Orcutt grass (*Orcuttia viscida*), Sanford's arrowhead (*Sagittaria sanfordii*), slender Orcutt grass (*Orcuttia tenuis*), and Tuolumne button-celery (*Eryngium pinnatisectum*).

Site Location and Description

The site is located within eastern Sacramento County and consists primarily of annual grassland and oak woodland habitats with various wetland communities contained within these two primary vegetation communities. The site is located within Township 9 North, Range 8 East, in Sections 9, 10, 15, 16, 17, 20, 21, and 22 of the USGS 7.5-minute series *Folsom, Folsom SE, Clarksville*, and *Buffalo Creek* topographic quadrangles (**Figure 1**).

Special-Status Plants

All special-status plant species surveyed for on the Folsom South site occur in seasonal wetland habitat such as vernal pools and depressional seasonal wetlands or on the margins of more perennial features such as marshes.

Ahart's Dwarf Rush

Ahart's dwarf rush, a CNPS List 4 species (plants of limited distribution), is an annual grass-like herb. It is a member of the rush family (Juncaceae). It occurs on the margins of vernal pools in grassland areas. Generally, this species occurs in valley and foothill grasslands in mesic areas. It is known only from six occurrences and is threatened by development (CNPS 2001). The identification period for this species is April through May. There are no CNDDB records for this species occurring within five miles of the site (CNDDB 2009).

Boggs Lake Hedge-Hyssop

Boggs lake hedge-hyssop is a California endangered species (SE) and a CNPS list 1B species (Plants Rare, Threatened, or Endangered in California and Elsewhere). It is a member of the figwort family (Scrophulariaceae). It is an annual herb that is found in shallow, freshwater conditions and usually occurs in vernal pool habitats. The typical identification period is from April through August (CNPS 2001). The flowers of this species are yellow with white on the lower 3 lobes. There is one CNDDB record for this species within five miles of the site (CNDDB 2009).

Brandegee's clarkia

Brandegee's clarkia is a CNPS 1B species. It is a member of the evening primrose family (Onagraceae). Brandegee's clarkia is typically found in foothill woodlands and low elevation conifer forests. This species typically flowers from May through June. There are three records of this species in the CNDDB occurring within five miles of the site (CNDDB 2009).

Dwarf downingia

Dwarf downingia is a CNPS list 2 species (Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere). It is a member of the bellflower family (Campanulaceae). It is an annual herbaceous species that blooms from April through June (CNPS 2001). The flower of this species is 3-lobed with yellow spots near the throat and the lobes of the flower are white or blue. This species requires shallow, fresh-water conditions and usually occurs in vernal pool habitat. There are no records in the CNDDB for this species within five miles of the site (CNDDB 2009).

Legenere

Legenere is a CNPS 1B species. It is a member of the bellflower family. It is an annual herbaceous species. This species can be emergent or terrestrial. Legenere typically occurs in vernal pool habitat types. The typical identification period is May through June (CNPS 2002). The flowers of this species are typically white with triangular leaves. There are no records in the CNDDB for this species within five miles of the site (CNDDB 2009).

Pincushion Navarretia

Pincushion navarretia is a CNPS 1B species. It is a member of the phlox family (Polemoniaceae). It is small annual herb. The typical identification period for this species is in May. It is found along the margins of vernal pools. The known distribution for this species is small with only four known locations of this species in Amador, Merced, and Sacramento counties. The flowers are tubluar and white in color. The bracts on the inflorescence are long and extend well beyond the flower head. There is one record in the CNDDB for this species within five miles of the site (CNDDB 2009).

Sacramento Orcutt Grass

Sacramento Orcutt grass, a federally endangered (FE) and CNPS 1B species, is a small, densely tufted annual member of the grass family (Poaceae). It grows 1 to 4 inches in height. The plant is covered with small glandular hairs and is sticky even when young

and more so at maturity. It has few to many slender stems and a spike-like inflorescence which is congested at the apex. This plant species typically blooms later into the growing season and will not produce flowers often until July. The blooming period is considered April through July. There are four records in the CNDDB for this species within five miles of the site (CNDDB 2009). This species is highly threatened by competition with non-native grasses, urban development, and overgrazing.

Sanford's Arrowhead

Sanford's arrowhead is a member of the water plantain family (Alismataceae). It is classified as a CNPS 1B species. It is typically found in marshes, swamps, and other perennially wet areas such as irrigation canals. The blooming period is May through October. There is one record in the CNDDB for this species within five miles of the site (CNDDB 2009).

Slender Orcutt Grass

Slender Orcutt grass, a FE and CNPS 1B species, is an annual herb that blooms from May through October and is known from fewer than 20 occurrences (CNPS 2001). It is a member of the grass family. This grass occurs in the bottom of vernal pools associated with valley grassland, blue oak woodland, and lower montane coniferous forest. Orcutt grasses require large pools that hold standing water for long periods of time; therefore, shallow, early-drying pools can be eliminated as possible sites for the occurrence of plants in this genus (Crampton 1959). Orcutt grasses germinate and grow submerged under water for several weeks to three months (USFWS 2003). There are no records in the CNDDB for this species within five miles of the site (CNDDB 2009).

Tuolumne Button-celery

Tuolumne button-celery, a CNPS 1B species, is an annual herb found in vernal pools of the foothills of the Sierra Nevada Range. It is a member of the carrot family (Apiaceae). This species is known to occur in Sacramento, Amador, Calaveras, and Tuolumne counties in cismontane woodland, lower montane coniferous forests, and other mesic areas. The typical identification period is June through August. There are no CNDDB records for this species within five miles of the site (CNDDB 2009).

Methods

Prior to conducting the survey, a California Natural Diversity Database records search for the target species was reviewed (**Figure 3**), and soil units mapped by NRCS were reviewed (**Figure 2**). In accordance with the CNPS Botanical Survey Guidelines, the survey was conducted by personnel with experience with conducting floristic surveys; knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate state and federal statutes related to plants and plant collecting; and experience with analyzing impacts of project activities on native plants and plant communities.

All areas of the site with suitable habitat for the plant species with a potential to occur on the site were surveyed. Those areas of the site that did not contain suitable habitat for the

species in question were not surveyed. Greater emphasis was given to examining those areas of the site that were mapped as containing seasonal wetland or vernal pool habitat. The survey was divided into two survey windows to include both early and late-blooming species that could occur on the site. Plant surveys were conducted on the site on April 27, May 1, and June 25, 2009. While conducting the survey, Foothill Associates' biologists composed a comprehensive botanical survey species list of all plant species observed on the site (**Appendix A**).

References

The following available information pertaining to the natural resources of the region was reviewed for the survey and preparation of this report.

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- U.S. Geological Survey. 1954. Photorevised 1980. *Folsom SE, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.
- U.S. Geological Survey. 1967. Photorevised 1980. *Buffalo Creek, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.
- U.S. Geological Survey. 1967. Photorevised 1980. *Folsom, California 7.5 minute series topographic quadrangle.* United States Department of the Interior.

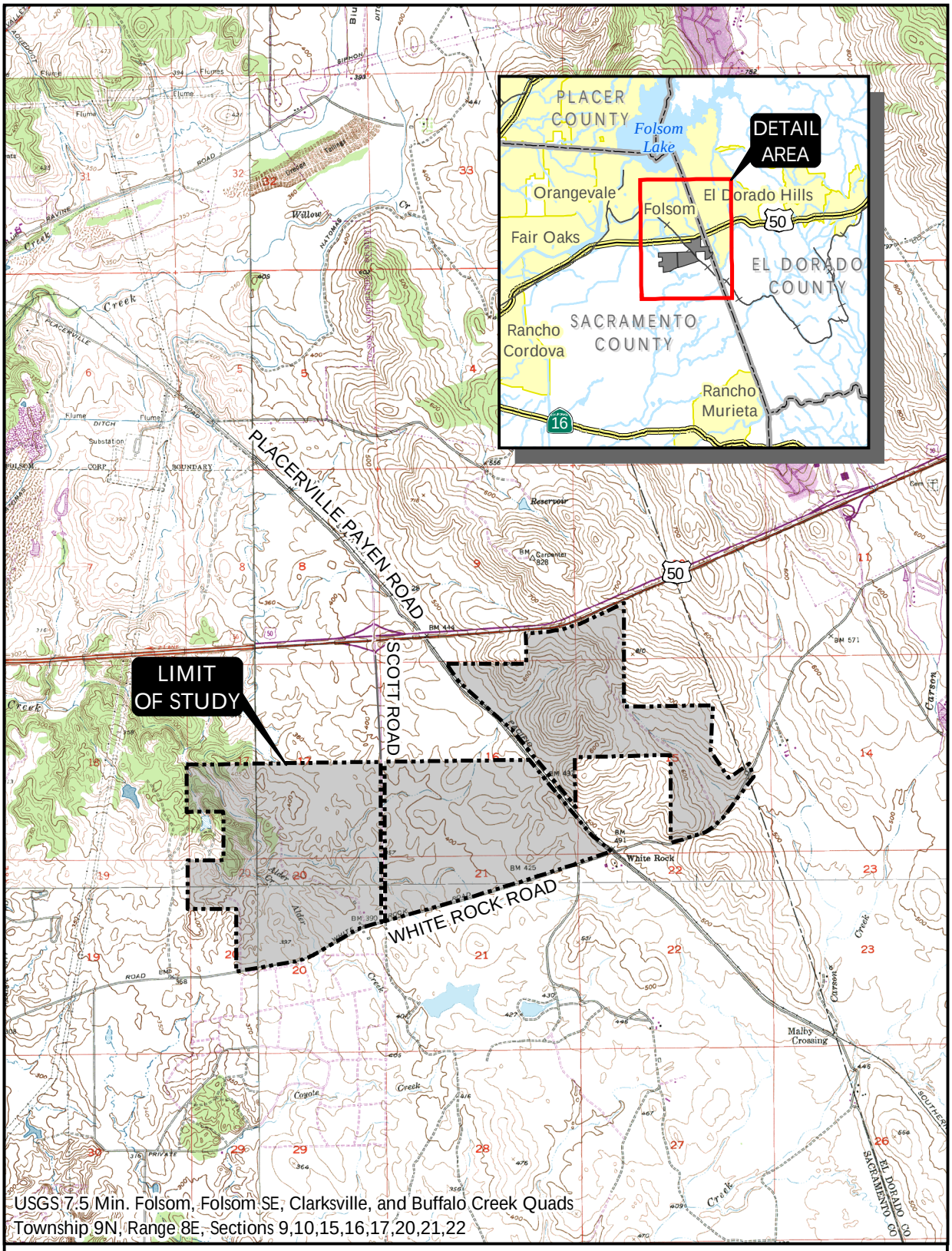
Results

None of the special-status plants included in this survey were found on the Folsom South site.

If you have any questions, please feel free to contact me.

Sincerely,

David Bise
Senior Biologist



SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

N

0 2000 4000
SCALE IN FEET

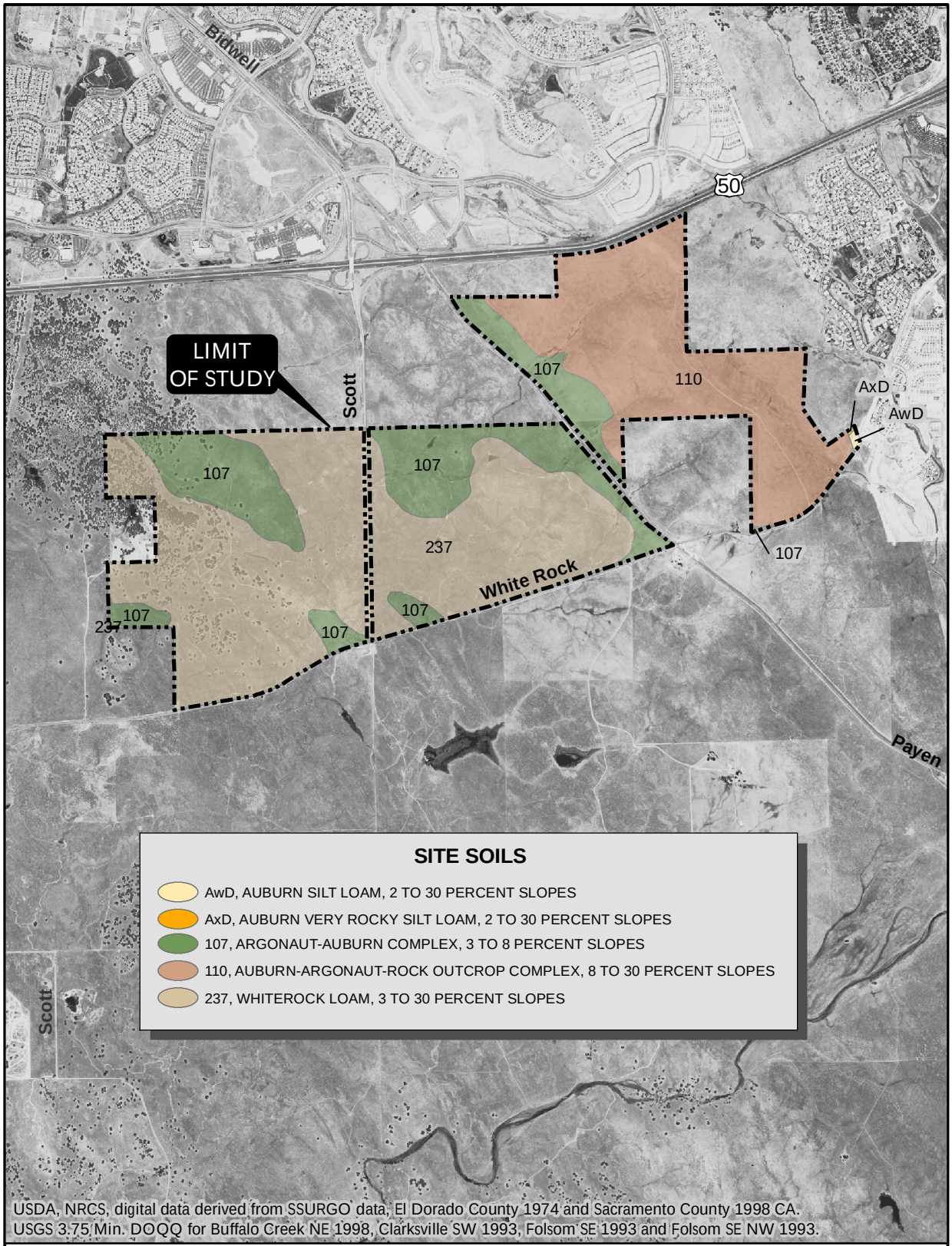
Drawn By: BF, AH
Date: 04/26/06

FIGURE 1

FOLSOM SOUTH

site_and_vicinity_r042606.mxd

© 2006



USDA, NRCS, digital data derived from SSURGO data, El Dorado County 1974 and Sacramento County 1998 CA.
USGS 3.75 Min. DOQQ for Buffalo Creek NE 1998, Clarksville SW 1993, Folsom SE 1993 and Folsom SE NW 1993.

SOILS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

N

0 1500 3000
SCALE IN FEET

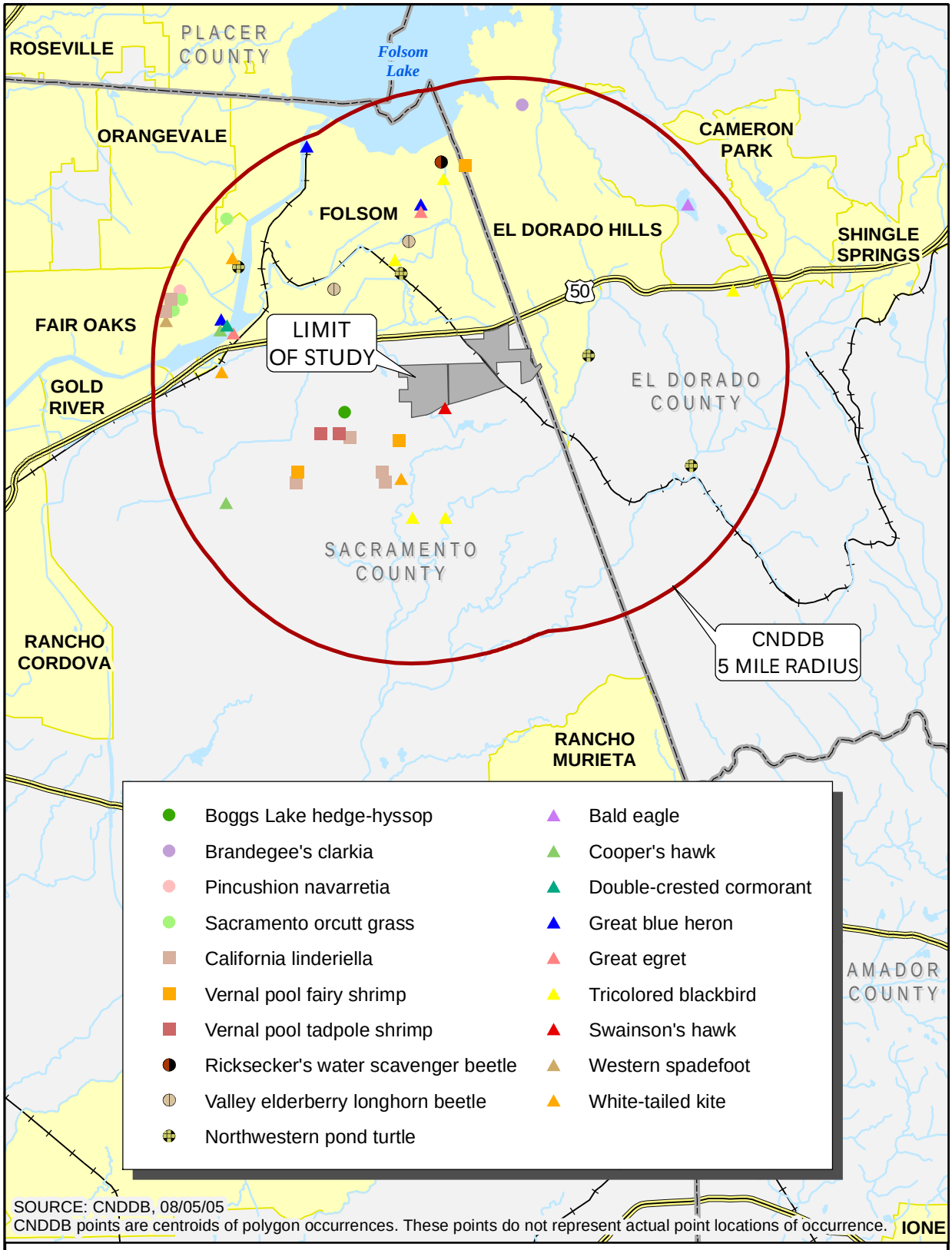
Drawn By: MMJ, AH
Date: 04/26/06

FIGURE 2

FOLSOM SOUTH

soil_r042606.mxd

© 2006



SOURCE: CNDDB, 08/05/05
CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

CNDDB

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

N

0 1.5 3
SCALE IN MILES

Drawn By: MMJ, AH
Date: 04/26/06

FIGURE 3

FOLSOM SOUTH

cnddb_r042606.mxd

© 2006

Appendix A — Botanical Survey Species List

Scientific Name	Common Name
Achillea millefolium	Common yarrow
Agoseris heterophylla	Annual false dandelion
Aira caryophyllea	Silver hairgrass
Alopecurus saccatus	Foxtail
Amsinkia menziesii var. *intermedia*	fiddleneck
Anagallis arvensis	Scarlet pimpernel
Avena sp.	Wild oats
Briza minor	Rattlesnake grass
Bromus diandrus	Ripgut brome
Bromus hordeaceous	Soft chess
Callitriche marginata	Water starwort
Carduus pycnocephalus	Italian thistle
Castilleja attenuata	Valley tassels
Centaurea solstitialis	Yellow star-thistle
Chamomilla suaveolens	Pineapple weed
Claytonia parviflora	Streambank springbeauty
Convolvulus arvensis	Bindweed
Cynodon dactylon	Bermudagrass
Deschampsia danthonioides	Annual hairgrass
Dichelostemma capitatum	Blue dicks
Digitaria ischaemum	Smooth crabgrass
Downingia ornatissima	Downingia
Eleocharis macrostachya	Spikerush
Epilobium angustifolium	Fireweed
Erodium botrys	Filaree
Erodium cicutarium	Filaree
Eryngium vaseyi	Coyote thistle
Galium sp.	Bedstraw
Geranium dissectum	Cutleaf geranium
Geranium molle	Dove's foot geranium
Glyceria occidentalis	Western mannagrass
Gratiola ebracteata	Hedge-hyssop
Hemizonia fitchii	Fitch's tarplant
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley
Hordeum murinum	Barley
Hypochaeris radicata	Rough cat's-ear
Juncus balticus	Baltic rush
Juncus bufonius	Common toad rush
Juncus mexicanus	Mexican spikerush

Scientific Name	Common Name
Juncus xiphoides	Iris-leaved rush
Lasthenia fremontii	Goldfields
Lasthenia glaberrimia	Smooth goldfields
Layia sp.	Layia
Lepidium nitidum	Shining peppergrass
Limnanthes sp.	Meadowfoam
Linaria vulgaris	Butter-and-eggs
Lolium perenne	Italian ryegrass
Ludwigia peploides	Water primrose
Lupinus sp.	Lupine
Lythrum hyssopifolia	Loosestrife
Marsilea vestita ssp. *vestita*	Hairy pepperwort
Medicago lupalina	Black medic
Micropus californicus var. *californicus*	Slender cottonweed
Medicago polymorpha	California burclover
Mimulus guttatus	Monkeyflower
Navarretia leucocephala	Navarretia
Poa annua	Annual bluegrass
Petrorhagia dubia	Hairy pink
Plagiobothrys stipitatus	Popcornflower
Plagiobothrys fulvus	Fulvous popcornflower
Plantago lanceolata	English plantain
Pogogyne zizyphoroides	Sacramento mesamint
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	Wooly marbles
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizeni	Interior live oak
Ranunculus bonariensis	Buttercup
Ranunculus muricatus	Spiny-fruit buttercup
Raphanus sativus	Field mustard
Rumex crispus	Curly dock
Rumex pulcher	Fiddle dock
Salix lasiolepsis	Arroyo willow
Stellaria media	Chickweed
Taraxacum officianalis	Common dandelion
Torilis arvenis	Field hedge-parsley
Trifolium hirtum	Rose clover
Trifolium depauperatum	Cowbag clover
Triphysaria eriantha	Johnnytuck
Triteleia hyacinthina	White broadiaea
Triteleia laxa	Ithuriels's spear

Scientific Name	Common Name
Typha sp.	Cattail
Vulpia myruros	Foxtail fescue

sp. = species
ssp. = sub species

ATTACHMENT D

PROPOSED FOLSOM PLAN AREA SPECIFIC PLAN PROJECT BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W2605
Sacramento, California 95825

In Reply Refer to:
81420-2010-F-0620-1

APR 2 2014

Ms. Lisa M. Gibson
Senior Project Manager
Regulatory Division
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922

Subject: Formal Consultation on the Proposed Folsom Plan Area Specific Plan Project (Corps # SPK-2007-02159), Sacramento County, California

Dear Ms. Gibson:

This letter is in response to the U.S. Army Corps of Engineers' (Corps) December 6, 2010, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Folsom Plan Area Specific Plan (FPA) Project (FPA/proposed project) in Sacramento County, California. Your request, which included the January 12, 2010, *U.S. Fish and Wildlife Service Biological Assessment to Support Section 7 Consultation for Folsom Plan Area Specific Plan* (Biological Assessment), was received by the Service on December 17, 2010. The Biological Assessment presents an evaluation of the proposed project's effects on species federally-listed under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The federal action we are consulting on is the issuance of permits under section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. §1251 et seq.), to nine individual applicants representing each property for the filling of jurisdictional wetlands, including vernal pools, seasonal wetlands and seasonal wetland swales, during the construction of the 3,510-acre FPA. This response is provided under the authority of the Act, and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Pursuant to 50 CFR 402.12(j), you submitted the Biological Assessment for our review and requested our concurrence with the findings presented therein, while also concurrently initiating formal consultation pursuant to 50 CFR 402.14(c). The findings presented in the Biological Assessment conclude that the FPA may affect, and is likely to adversely affect the federally-listed

as threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the federally-listed as endangered vernal pool tadpole shrimp (*Lepidurus packardi*) (collectively, vernal pool crustaceans), and the federally-listed as threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). The findings also conclude that the proposed project may affect, but is not likely to adversely affect the federally-listed as threatened slender Orcutt grass (*Orcuttia tenuis*) and the federally-listed as endangered Sacramento Orcutt grass (*Orcuttia viscida*) (collectively, vernal pool grasses). Critical habitat has been designated for all of the above species; however, there is none located within the action area for the FPA.

In considering your request, we based our evaluation of the Biological Assessment's findings on the following: 1) the December 6, 2010 consultation request; 2) the December 4, 2012 and June 19, 2013 e-mails modifying the consultation request; and the 3) January 12, 2010, *U.S. Fish and Wildlife Service Biological Assessment to Support Section 7 Consultation for Folsom Plan Area Specific Plan*, prepared by ECORP Consulting, Inc., which included information from the following project specific documents (all documents were prepared by ECORP Consulting, Inc. unless otherwise noted):

Backbone Infrastructure

- The *2009-2010, Wet Season 90-Day Report of Findings Regarding Federally Listed Branchiopods For Backbone Infrastructure Area: Folsom Specific Plan Area.*
- The *2010-2011, Wet Season 90-Day Report of Findings Regarding Federally Listed Branchiopods For Backbone Infrastructure Area: Folsom Specific Plan Area.*

Prairie City Road Business Park

- The November 4, 2008, letter to David Hatch of Easton Development Company, LLC (formerly GenCorp Realty), *Prairie City Road Business Park, Sacramento County, California – Valley Elderberry Longhorn Beetle Survey.*
- The March 6, 2009, *Special-Status Plant Survey for Prairie City Road Business Park.*
- The *2008-2009, ECORP Wet Season 90-Day Report of Findings Regarding Federally Listed Branchiopods for Prairie City Road Business Park.*
- The *2009-2010, Wet Season 90-Day Report of Findings Regarding Federally Listed Branchiopods for Prairie City Business Park.*

Carpenter Ranch

- The 2007-2009, *Listed Vernal Pool Branchiopod Wet Season Survey, 90-Day Reports-Carpenter Ranch.*
- The 2009, *Special-Status Plant Survey – Carpenter Ranch.*

Hillsborough (Formerly Folsom 560)

- The November 4, 2008, letter to David Hatch of Easton Development Company, LLC *Hillsborough (Folsom 560), Sacramento County, California - Valley Elderberry Longhorn Beetle Survey.*
- The *2008, Special-Status Plant Survey for Hillsborough.*
- The *2008-2009* and 2009-2010, *Wet Season 90-Day Report of Findings Regarding Federally Listed Branchiopods for Hillsborough.*

Folsom South

- The 2006 and 2009, *Results of a Focused Plant Survey on the Folsom South Site.*
- The 2007, *90-Day Report 2006-2007 Wet-Season Survey for Listed Vernal Pool Branchiopods: Folsom South Property.*
- The 2007, *Results of Analyses of Soil Samples Collected from the Proposed Folsom South FPA* (prepared by Ecoanalysts for Foothill Associates).
- The 2009, *90-Day Report 2008-2009 Wet-Season Survey for the Listed Vernal Pool Branchiopods: Folsom South Property.*

Folsom Heights

- The 2008, *Delineation of Waters of the United States*, Folsom Heights Property, prepared by EDAW.

After reviewing all the available information, we concur with your determination that the proposed FPA project may affect, but is not likely to adversely affect the vernal pool grasses. The proposed project reached the 'may affect' level, and the subsequent requirement for a Biological Assessment, due to the fact that the proposed project occurs in suitable vernal pool habitat within the known range of the vernal pool grasses, and the vernal pool grasses may be present in the action area. The nearest California Natural Diversity database vernal pool grass occurrence is located 3.4 miles southwest, near the intersection of Douglas Road and Grant Line Road. Although the vernal pool grasses are adapted for wind driven seed dispersal, seeds likely do not disperse far under natural conditions as referenced in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service, 2005), (Recovery Plan). Therefore, it is unlikely that the vernal pool grasses may have dispersed naturally into the action area.

There are few pools large enough to support vernal pool grasses in the action area. According to the Recovery Plan, the smallest pool observed to support vernal pool grasses is approximately 0.25 acre while the median size pool is 0.69 acre. The largest vernal pool observed to support the vernal pool grasses is greater than 2.0 acres. The largest vernal pool in the action area is 0.294 acre on the Carpenter Ranch property which was surveyed and no vernal pool grasses were detected.

The consultants for the applicants conducted protocol-level special status plant surveys in accordance with the Service's September 23, 1996, *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*, (Plant Guidelines) throughout 3,263 acres of the 3,510-acre FPA between 2005 and 2009. No vernal pool grasses were detected in any of the surveys. However, the remaining 247 acres within the FPA that have not been surveyed for vernal pool grasses include the Javanifard and Zarghami, Sacramento Country Day School, and Folsom 138 properties. The Javanifard and Zarghami property had no vernal pools and the Sacramento Country Day School has a total of 0.580 acre of vernal pool features distributed over approximately 40 vernal pool features. The Folsom 138 property has two vernal pool wetland features for a total of 0.043 acre.

We accept the survey findings and acknowledge that the vernal pool wetland features within the action area did not contain vernal pool grasses at the time of the surveys. We acknowledge that 247 acres have not been surveyed, but due to the small size of the vernal pool wetland features on the three properties, they are not likely to support the vernal pool grasses. We also recognize that vernal pool grasses, in the form of seeds, may be moved throughout vernal pool ecosystems, from a variety of potential transportation mechanisms (e.g., overland surface water flow; carried on avian and grazing mammal vectors). So it is conceivable that vernal pool grasses may have been transported into, or already occur in, the action area since the time of the last surveys and in the three un-surveyed areas; and therefore, construction of the proposed project may adversely affect any vernal pool grasses present. However, since the grass surveys have been conducted in 93% of the FPA, we believe that these potential effects are extremely unlikely to occur, and are therefore discountable for the purposes of this consultation. This includes the Backbone Infrastructure which was surveyed concurrently with each individual property, i.e. the portions of the Backbone Infrastructure that occur on each individual property were included during surveys being conducted for a specific property.

Finally, we concur with your findings that the proposed project may affect, and is likely to adversely affect the vernal pool crustaceans and the beetle. We also find that your written request, and the accompanying Biological Assessment, fulfills the requirements for initiation of formal consultation. Therefore, this document provides our biological opinion on the effects of the proposed project on the vernal pool crustaceans and the beetle.

BIOLOGICAL OPINION

Consultation History

March 21, 2011	A meeting to discuss the status of the FPA project was held with representatives of the applicants, the Corps, and the Service. Discussed the need for shrimp surveys and exhibit showing survey status. Discussed the need for watershed analysis.
March 23, 2011	The Corps sent an email to the Service confirming that the five highway interchanges for Highway 50 are not part of the proposed action and would be handled with separate permit applications and section 7 consultations.

April 11, 2011	Site visit with a Service representative, ECORP Consulting, Inc. (ECORP), and Foothill Associates, also representing the applicants.
January 26, 2012	The Service attended a meeting at ECORP to review watershed exhibits primarily for the Country Day School, Prairie City Road Business Park, and Hillsborough and current status of shrimp surveys.
March 21, 2012	The Service attended a meeting at ECORP regarding format and structure of the biological opinion, review watershed information, Backbone Infrastructure survey results and assessment of indirect impacts.
December 4, 2012	The Service received an email from the Corps which clarifies and modifies their determination for the species in the FPA as stated in their December 6, 2010, consultation letter. The Corps' determinations are: 1) vernal pool grasses are a may affect, but not likely to adversely affect determination; 2) vernal pool crustaceans and the beetle are a may affect and likely to adversely affect determination; and 3) remove the Conservancy fairy shrimp from the consultation.
May 10, 2013	The Service attended a meeting at ECORP to review draft language for the biological opinion and structure.
May 24, 2013	Representatives of the Service and ECORP, the consultant for the FPA, conducted a site visit on the Folsom Heights property to assess habitat conditions.
June 19, 2013	The Corps sent an email to the Service clarifying that the consultation does not include the off-site water line or the interchanges along Highway 50.
July 30, 2013	The Service sent a letter to the Corps and Mr. Drew Lessard with the U.S. Bureau of Reclamation (BOR) requesting information on the water supply associated with the project. The issue was whether or not some or all of the water supply would be supplied from the Natomas Mutual Water Company.
August 23, 2013	The Service received a letter response from BOR in response to the Service's request for additional information regarding the water supply for the FPA. The letter stated that there will be no water transfer between the Natomas Mutual Water Company and the FPA.
November 26, 2013	The Service received a letter from ECORP justifying that the wetlands on the Folsom Heights property do not constitute vernal pool crustacean habitat.

December 23, 2013 The Corps submitted the 404 permit application, via email to the Service, for the Sacramento Country Day School property.

January 2014 Email correspondence between the Corps and the Service regarding clarifying the wetland acreages depicted in the land use plan for the 420 acre Russell Ranch Specific Plan which is part of the Folsom South property in the FPA. The Folsom South property was subdivided into four parcels in 2013. The Corps confirmed that the wetland acreage figure for the Folsom South remains unchanged.

March 2014 Email correspondence between the Corps, Service and ECORP with questions and responses confirming the site acreage of each applicant, the additional information necessary for the Service to concur with a not likely to adversely affect determination for vernal pool grasses, and confirmation of the vernal pool crustacean acreage affected by the proposed project.

Project Description

The FPA project is a proposed residential development project with associated retail and commercial properties just south of Highway 50 and north of White Rock Road between Prairie City Road and the Sacramento-El Dorado County line. The FPA is comprised primarily of annual grassland and oak woodland, and is mostly undisturbed and contains one small building and associated access road. The FPA project consists of nine individual developments, each with distinct property owners and separate Corps 404 permit applications. One of these projects, the Backbone Infrastructure [Backbone] will be implemented by the City of Folsom (City). The remaining eight projects will be implemented by a variety of private entities. Each of these eight projects relies on the Backbone project for site access and utility connections. All projects are located within a contiguous 3,510-acre area comprising the FPA. The eight development projects and the Backbone project are all part of the FPA; therefore, all nine projects will be addressed in this biological opinion. This biological opinion will analyze the effects of the greater FPA as a whole, and will serve as the Service's biological opinion on all nine projects. However, each project within the FPA has a different applicant, will complete regulatory and planning requirements at different rates, and compensatory mitigation will be the responsibility of each individual property owner.

The purpose of the FPA project is to establish a coordinated and comprehensive approach towards land use development, consisting of residential, commercial, recreational, public land uses, open space, and infrastructure. The Local Agency Formation Commission designated the FPA as part of the City Sphere of Influence (SOI) in 2001, and the City plans to annex the SOI area. The FPA project will include mixed-density residential housing; public, commercial, and industrial office space; and active parkland. In addition, the City will maintain 30% of the FPA as natural open space (not to include active parkland). At complete build-out, the FPA will consist of approximately 1,474.6 acres of residential housing, 520.7 acres of commercial development, 464.7 acres that include a shopping mall, police and fire stations, municipal services center, five elementary schools, a water treatment plant, associated roads, and parkland,

and 1,050 acres of open space. The build-out timeframe for the FPA has not yet been determined; however, the FPA will be phased such that portions of the Backbone Infrastructure components necessary for each portion of the FPA will be constructed concurrently with development on each property. Figure 1 depicts the location of all nine FPA components, each of which are discussed in more detail below. The individual applicants are as follows:

PROJECTS	APPLICANTS
Folsom Heights	Hospitality Consultants 8525 Oak Arbor Court Fair Oaks, California 95628 Contact: Bob Robinson
Folsom South	MJM Properties 1037 Suncast Lane, Suite 111 El Dorado Hills, California 95762 Contact: Mike McDougal
Folsom 138	Folsom White Rock Investors, LLC 111 Woodmere Drive, Suite 190 Folsom, California 95630 Contact: Brian Cutting
Carpenter Ranch	FPA Land Development 4665 MacArthur Court, Suite 200 Newport Beach, California 92660 Contact: Tim Kihm
Folsom 560 (Hillsborough)	Easton Development Corporation, LLC 1180 Iron Point Rd., Suite 350 Folsom, California 95630 Contact: Mike LaFortune
Prairie City Road Business Park	Easton Development Corporation, LLC 1180 Iron Point Rd., Suite 350 Folsom, California 95630 Contact: Mike LaFortune
Backbone Infrastructure	City of Folsom Community Development Department 50 Natoma Street, Folsom, California 95630 Contact: Gail Furness de Pardo
Javanifard and Zarghami	Javanifard and Zarghami 6236 Mahala Drive Carmichael, California 95608
Sacramento Country Day School	Easton Development Corporation, LLC 1180 Iron Point Rd., Suite 350 Folsom, California 95630 Contact: Mike LaFortune

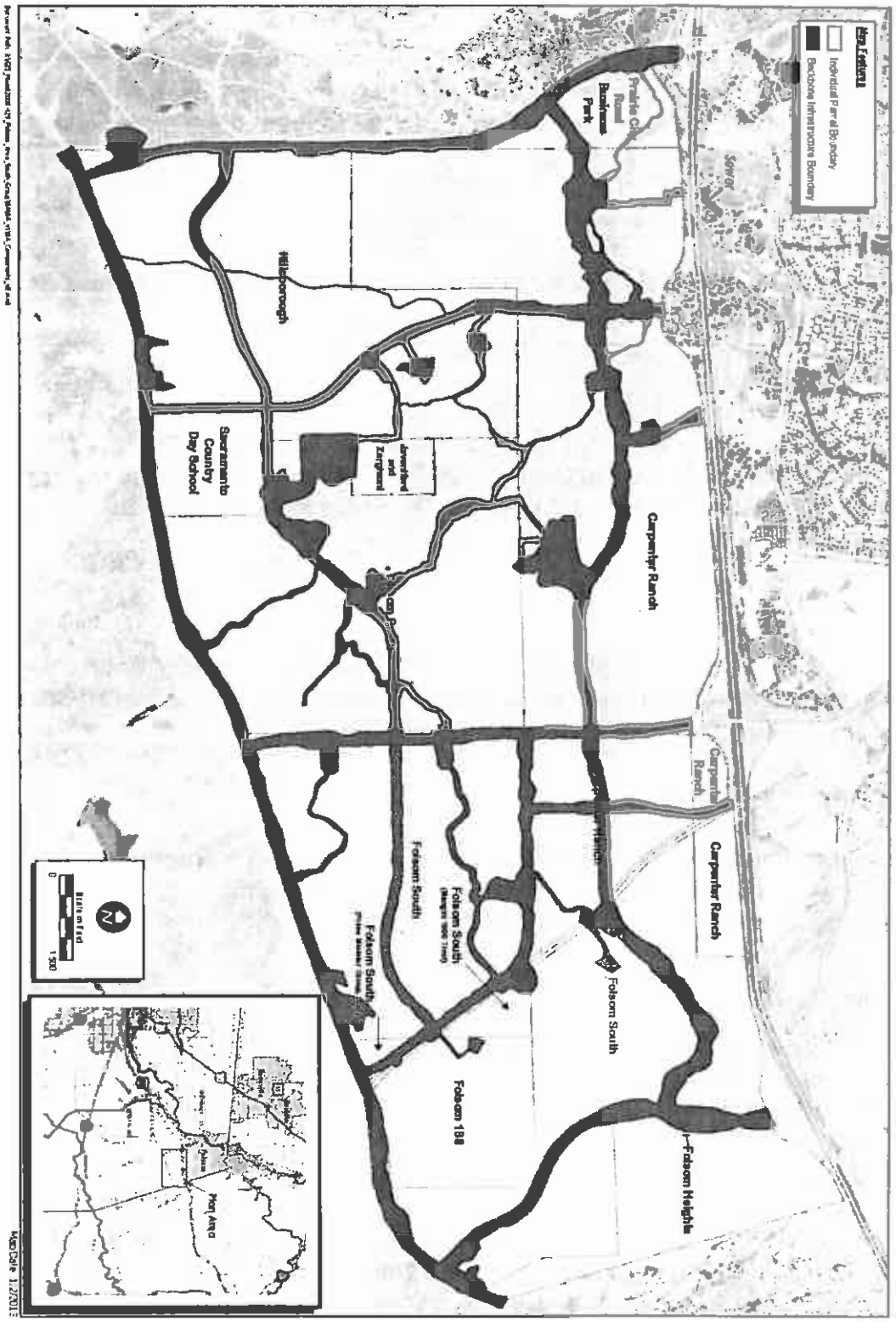


Figure 1. Folsom Plan Area Components

2005-429 Folsom Plan Area Specific Plan Project

Backbone

The purpose of the Backbone project is to allow for phased implementation of the FPA project. The Backbone encompasses a total of 627.40 acres throughout the FPA project which includes 156.6 acres of off-site Backbone work. A majority of the total acreage is included in each of the development acreages, and includes construction of major roads and trails, water and sewer infrastructure, and storm drain systems. Components of the overall Backbone are summarized below.

Roads

The proposed roadway network will include major circulation roads that will serve the entire FPA and region overall, and these roads are depicted in Figure 1.

Pedestrian/Bicycle Trails

The Backbone includes a network of Class I and II bicycle trails that will provide connectivity to trails in Sacramento and El Dorado Counties. A multi-use trail system will provide pedestrian and bicycle linkage throughout the FPA project. Typically, these are 8- to 12-foot wide paved trails.

Sanitary Sewer

The main sanitary sewer system planned for the FPA project is included within the Backbone. This includes sewers in major roadways as well as separate sewer lines and an off-site connection under State Highway 50.

Drainage and Flood Control

The Backbone includes detention and water quality basins that serve areas greater than the individual parcels on which they are located, including one basin that is located just west of the FPA project, on the west side of Prairie City Road.

Water Supply

A water treatment plant (WTP) is included in the Backbone. The WTP is located in the southwest portion of the FPA, north of the Country Day School property and south of the Javanifard and Zarghami property.

Off-Site Backbone Infrastructure

This portion of the Backbone infrastructure is 156.6 acres beyond the 3,510 FPA project area. The purpose of the off-site Backbone is to widen White Road and Prairie City Road, install a detention basin and connection of a sewer line to an existing sewer line that is north of State Highway 50.

Backbone Summary

There are 7.217 acres of vernal pools and seasonal wetlands within the Backbone footprint. All potential habitat for the vernal pool crustaceans was surveyed in accordance with the Service's 1996 *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (Crustacean Guidelines). Portions of the Backbone were surveyed as each individual property was surveyed, and a remaining off-site portion within the right of way was surveyed during the 2009-2010 and 2010-2011 wet seasons. Vernal pool tadpole shrimp were identified within a vernal pool located just south of White Rock Road and within the Backbone Infrastructure right-of-way. This vernal pool is part of a larger wetland complex totaling 0.191 acre.

Vernal pool fairy shrimp were detected during surveys within Prairie City Road Business Park (discussed below). A portion of the Backbone is adjacent to these occupied pools and it is therefore assumed these features (totaling 0.104 acre), within the Backbone, are occupied by this species.

A total of six elderberry shrubs (*Sambucus* spp.), the sole host plant for the beetle, with 26 stems measuring one inch or larger in diameter at ground level were identified within the Backbone. A beetle exit hole was identified on one of these shrubs. All six elderberry shrubs will be removed during project construction, and will be transplanted in accordance with the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Beetle Guidelines) to a Service-approved conservation bank with a service area encompassing the FPA or another location as approved by the Service.

Prairie City Road Business Park

The Prairie City Road Business Park (Business Park) project is approximately 71 acres in size, and is located south of State Highway 50, east of Prairie City Road, and south of the City of Folsom in northeastern Sacramento County. The Business Park consists of 1.3 acres of single family residences, 41.3 acres of industrial/office space, 25.3 acres of open space, and 3.1 acres of right-of-ways.

There are 1.205 acres of vernal pools and seasonal wetlands on-site. Wet season surveys for the vernal pool crustaceans, in accordance with the Crustacean Guidelines, were conducted for the Business Park during 2008-2009 and 2009-2010. Vernal pool fairy shrimp were detected in two vernal pools. Because these pools are hydrologically connected to a greater vernal pool complex within the Business Park, the applicant has assumed that both vernal pool crustaceans are present within all suitable vernal pool crustacean habitat within the Business Park site (1.205 acres). No elderberry shrubs (*Sambucus* spp.) were identified on-site.

Carpenter Ranch

The Carpenter Ranch project is approximately 1,024 acres in size, and is located south of State Highway 50 between Scott Road and Placerville Road. A small portion of the northeast corner of Carpenter Ranch extends east of Placerville Road. The Carpenter Ranch project consists of both single and multi-family housing, commercial and office development, parks, open space, and a school.

There are 7.723 acres of vernal pools and seasonal wetlands on-site. Wet season surveys for the vernal pool crustaceans, in accordance with the Crustacean Guidelines, were conducted for Carpenter Ranch during 2006-2007, 2007-2008 and 2008-2009. No vernal pool crustaceans were detected at the time of the surveys.

There is a single elderberry shrub (*Sambucus* spp.) with one stem greater than one inch in diameter at ground level located within the Carpenter Ranch. This shrub will be directly affected by project construction and will be transplanted in accordance with the Beetle Guidelines to a Service-approved bank with a service area encompassing the FPA or another location as approved by the Service.

Hillsborough (Formerly Folsom 560)

The Hillsborough project is approximately 560 acres in size, and is located northeast of the intersection of White Rock Road and Prairie City Road in northeastern Sacramento County. The Hillsborough site will consist of three residential villages, parks, open space, and an on-site preserve.

There are 5.436 acres of vernal pools and seasonal wetlands on-site. Wet season surveys for the vernal pool crustaceans were conducted, in accordance with the Crustacean Guidelines, for Hillsborough during 2008-2009 and 2009-2010. No vernal pool crustaceans were detected at the time of the surveys.

There is a single elderberry shrub (*Sambucus* spp.) with seven stems one inch or greater in diameter at ground level located within Hillsborough. This shrub will be directly affected by project construction, and will be transplanted in accordance with the Beetle Guidelines to a Service-approved bank with a service area encompassing the FPA or another location as approved by the Service.

Folsom South

The Folsom South project is located south of State Highway 50, north of White Rock Road, extending east of Placerville Road, and west of Scott Road. It consists of an approximately 1,400-acre mixed-use development including low, medium, and high density residential housing, schools, commercial space, open space, and associated roads and other infrastructure. Approximately 357 acres of open space will be preserved, including an approximately 101-acre on-site wetland preserve. The Folsom South site currently consists mainly of annual grasslands

and the majority of the site is currently utilized for livestock grazing. In the past, portions of the site have been mined for gold and other minerals, and it is bisected by an inactive Southern Pacific Railroad track. No elderberry shrubs (*Sambucus* spp.) were identified on the site. There are 8.762 acres of vernal pools and seasonal wetlands on-site.

Wet season surveys for the vernal pool crustaceans, in accordance with the Crustacean Guidelines, were conducted for Folsom South during 2006-2007 and 2008-2009, and a dry season survey was conducted in 2007. No vernal pool crustaceans or cysts were detected at the time of the surveys.

Folsom Heights

The 179-acre Folsom Heights project is located south of State Highway 50, west of the El Dorado County line. The Folsom Heights site consists mainly of annual grasslands, and the majority of the site is currently utilized for livestock grazing. Proposed land uses include single family homes, general commercial space, and open space.

There are 2.018 acres of vernal pools and seasonal wetlands on-site. However, the Folsom Heights property is characterized by an overall lack of suitable habitat for the vernal pool crustaceans. The wetland habitat either does not pond for any significant duration or it holds water for too long and is nearly perennial in nature. No elderberry shrubs (*Sambucus* spp.) are present within Folsom Heights.

Javanifard and Zarghami

The Javanifard and Zarghami project is located south of State Highway 50 and north of White Rock Road between Prairie City Road and Scott Road. The Javanifard and Zarghami site is approximately 30 acres in size, and is anticipated to consist of a mixed-use residential community. No elderberry shrubs (*Sambucus* spp.) are present within the site. There is a total of 0.117 acre of wetlands on-site which includes vernal pools, seasonal wetlands and seasonal wetland swales.

Surveys for the vernal pool crustaceans have not been conducted to date. The applicant will assume presence for the vernal pool crustaceans and provide habitat compensation as detailed in the Conservation Measures section below.

Sacramento Country Day School

The Sacramento Country Day School project is located north of White Rock Road between Prairie City Road and Scott Road, and is approximately 79 acres in size. No elderberry shrubs (*Sambucus* spp.) are present within the Sacramento Country Day School site. There is a total of 0.742 acre of wetlands on-site which includes vernal pools and seasonal wetland swales. A total of 0.185 acre of wetlands will be filled as part of the proposed project. The remaining 0.557 acre of wetlands will be avoided as part of the proposed project. The avoided wetlands may be

affected indirectly by project implementation due to inadequate buffers from surrounding development(s).

Surveys for the vernal pool crustaceans have not been conducted to date. The applicant will assume presence for the vernal pool crustaceans and provide habitat compensation as detailed in the Conservation Measures section below.

Folsom 138

The 138-acre Folsom 138 site is located south of State Highway 50, just north of the intersection of White Rock Road and Placerville Road. The project consists of residential and commercial development, associated infrastructure, as well as 25.3 acres of on-site open space. There are a total of 1.836 acres of vernal pools, seasonal wetlands, and other wetlands on-site. Wet season surveys for the vernal pool crustaceans, in accordance with the Crustacean Guidelines, were conducted for the Folsom 138 project during the 2008-2009 wet season. Dry season surveys were conducted in July 2013 and no vernal pool crustaceans or cysts were detected.

The Crustacean Guidelines specify that a complete survey constitutes either two wet season surveys or a wet season and dry season survey conducted consecutively (i.e. wet season followed by dry season or vice versa). Although surveys for Folsom 138 were not conducted as a consecutive wet-dry combination, there is no information to suggest that habitat conditions or the likelihood of the vernal pool crustaceans to be present has changed or has not been adequately assessed by the 2008-2009 wet season and 2013 dry season surveys conducted.

No elderberry shrubs (*Sambucus* spp.) are present within Folsom 138.

Figure 2 summarizes the status of vernal pool crustacean surveys for the FPA project and Figure 3 summarizes potential suitable vernal pool crustacean habitat within the FPA project.

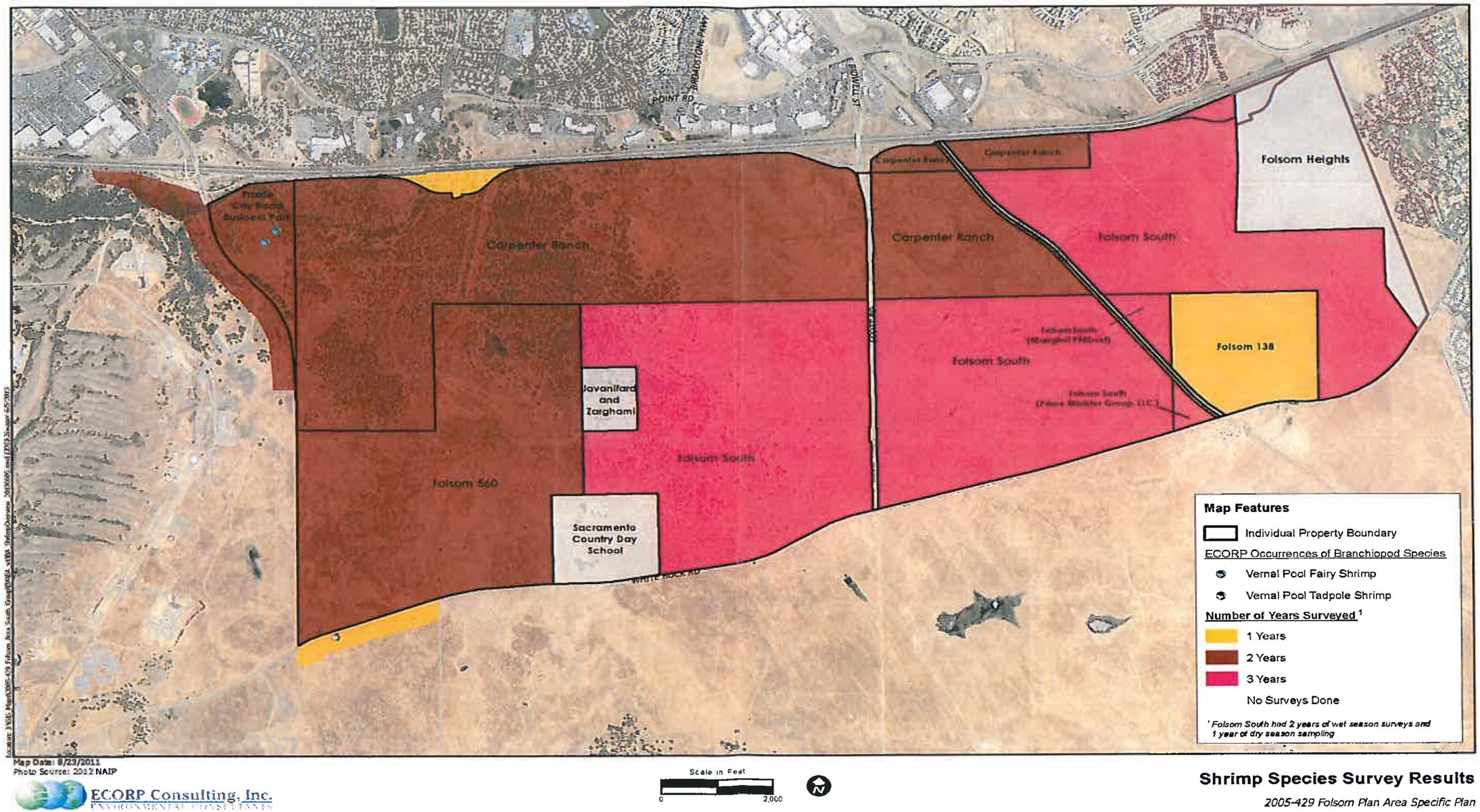


Figure 2. Vernal Pool Crustacean Surveys for the Folsom Plan Area. (Note: Folsom 138 was surveyed in the dry season 2013 with negative survey results and has been surveyed twice.)

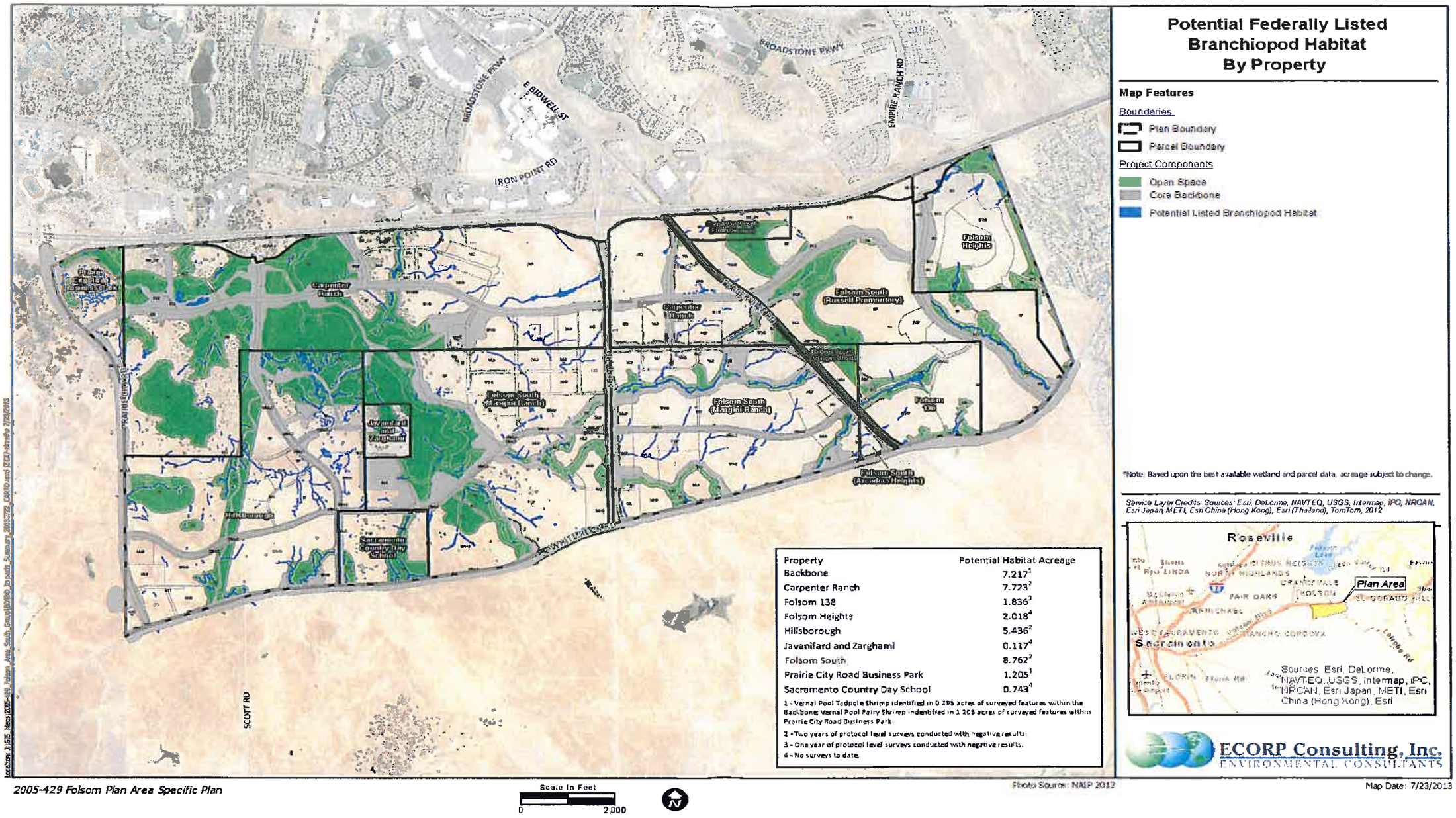


Figure 3. Summary of potential vernal pool crustacean habitat and surveys for FPA.

Proposed Conservation Measures

In order to minimize project effects on the vernal pool crustaceans and the valley elderberry longhorn beetle, the following conservation measures have been proposed by the applicants. Following the summary below, conservation measures are detailed for each individual project and are the responsibility of each applicant.

Vernal Pool Crustaceans: Summary status of four projects in the FPA, impacts, and compensation*

Property	Survey	Species Status	Habitat (Acres)	Direct Impact	Indirect Impact	Habitat Preservation	Habitat Creation
Prairie City Rd Business Park	yes	present	1.205	1.205	0.0	2.41	1.205
Backbone Infrastructure	yes	present	0.295	0.295	0.0	0.59	0.295
Javanifard and Zarghami	no	assumed	0.117	0.117	0.0	0.234	0.117
Sacramento Country Day	no	assumed	0.742	0.185	0.557	1.484	0.185
					Total	**4.718**	**1.802**

***Note: all remaining properties in the FPA were either surveyed according to Service Guidelines with negative results or lack suitable habitat.**

As discussed in the individual project descriptions above, vernal pool crustacean surveys have been conducted for the Prairie City Road Business Park, Carpenter Ranch, Hillsborough, Folsom South, and the Backbone. Of these, vernal pool fairy shrimp were identified within two vernal pools on the Prairie City Road Business Park and vernal pool tadpole shrimp were identified in one vernal pool complex within the Backbone. Occupied habitat within these portions of the project total 1.205 and 0.295 acres, respectively. The applicant(s) for these two projects will compensate for this loss of habitat by purchasing 3.0 acres (a 2:1 ratio) of vernal pool preservation credits and 1.50 acres (a 1:1 ratio) of vernal pool creation credits at a Service-approved conservation bank with a service area encompassing the FPA.

Surveys have not been completed for Javanifard and Zarghami and Sacramento Country Day School. These two properties contain 0.859 acre of vernal pools and seasonal wetlands, which are potential habitat for the vernal pool crustaceans. It is reasonably likely that the species is present based on positive survey results for properties with similar features and are located on the western and southern fringe of the FPA project. The applicants will assume presence for the vernal pool crustaceans and provide habitat compensation through preservation for direct and indirect effects (at a ratio of 2:1) and habitat creation for direct effects (at a ratio of 1:1) at a Service-approved conservation bank with a service area encompassing the FPAs. The applicants for Javanifard and Zarghami and Sacramento Country Day School may, prior to construction, elect to survey their properties using Service-approved protocols, in an effort to demonstrate the species are not present on-site. Depending on the results of these surveys, the applicants may

request the Corps to reinitiate consultation to re-evaluate the effects of the action. Figure 3 summarizes the potential vernal pool crustacean habitat within the FPA and the status of the vernal pool crustacean based on surveys for the FPA.

Valley elderberry longhorn beetle: Description of elderberry stems directly affected and proposed compensation for all nine projects

Habitat Type	Stem Diameter	Number of Stems	Exit Holes (Y/N)	Seedling Ratio	Native Plant Ratio	Total Elderberry Seedlings	Total Native Plants
Non-Riparian	1"-3"	23	N	1:1	1:1	23	23
Non-Riparian	3"-5"	8	N	2:1	1:1	16	16
Non-Riparian	5"+	-	-	3:1	1:1	-	-
Riparian	1"-3"	1	N	2:1	1:1	2	2
Riparian	3"-5"	1	Y	6:1	2:1	6	12
Riparian	5"+	1	Y	8:1	2:1	8	16
					TOTAL	**55**	**69**
					Acreage	**0.52**	
					Credits	**13***	

Note: Habitat compensation is calculated below by property, and the discrepancy in the credit total shown above is due to rounding.

Project specific conservation measures

Backbone Infrastructure

- In order to minimize project effects to the beetle, the City of Folsom has proposed to comply with all applicable conservations measures as detailed in the Beetle Guidelines for transplantation of the six elderberry shrubs with 26 stems greater than one inch in diameter. In addition, the applicant has proposed to purchase beetle conservation credits at a Service-approved conservation bank with a service area encompassing the FPA. The proposed conservation credit component of the project is detailed below.

- The City of Folsom has proposed to offset effects to 0.295 acre of vernal pool crustacean habitat by purchasing 0.590 acre (a 2:1 ratio) of vernal pool crustacean preservation credits and 0.295 acre (a 1:1 ratio) of vernal pool crustacean creation credits at a Service-approved conservation bank with a service area covering the FPA.

Backbone Infrastructure: description of elderberry stems directly affected and proposed compensation

Habitat Type	Stem Diameter	Number of Stems	Exit Holes (Y/N)	Seedling Ratio	Native Plant Ratio	Total Elderberry Seedlings	Total Native Plants
Non-Riparian	1"-3"	18	N	1:1	1:1	18	18
Non-Riparian	3"-5"	6	N	2:1	1:1	12	12
Non-Riparian	5"+	-	-	3:1	1:1	-	-
Riparian	1"-3"	-	-	2:1	1:1	-	-
Riparian	3"-5"	1	Y	6:1	2:1	6	12
Riparian	5"+	1	Y	8:1	2:1	8	16
					TOTAL	**44**	**58**
					Min. Acreage	**0.45**	
					Credits	**11**	

Prairie City Road Business Park

- The GenCorp Realty Investments has proposed to offset effects to 1.205 acres of vernal pool crustacean habitat by purchasing 2.41 acres (a 2:1 ratio) of vernal pool fairy shrimp preservation credits and 1.205 acres (a 1:1 ratio) of vernal pool fairy shrimp credits at a Service-approved conservation bank with a service area covering the FPA.

Carpenter Ranch

- In order to minimize project effects to the beetle, FPA Land Development has proposed to comply with all applicable conservations measures as detailed in the Beetle Guidelines for transplantation of the one elderberry shrub. In addition, the applicant has proposed to purchase one beetle conservation credit at a Service-approved conservation bank with a service area encompassing the FPA. The proposed conservation credit component of the project is detailed below.

Carpenter Ranch: Description of elderberry shrubs directly affected and proposed compensation

Habitat Type	Stem Diameter	Number of Stems	Exit Holes (Y/N)	Seedling Ratio	Native Plant Ratio	Total Elderberry Seedlings	Total Native Plants
Non-Riparian	1"-3"	-	-	1:1	1:1	-	-
Non-Riparian	3"-5"	-	-	2:1	1:1	-	-
Non-Riparian	5"+	-	-	3:1	1:1	-	-
Riparian	1"-3"	1	N	2:1	1:1	2	2
Riparian	3"-5"	-	-	6:1	2:1	-	-
Riparian	5"+	-	-	8:1	2:1	-	-
					TOTAL	**2**	**2**
					Min. Acreage	**0.041**	
					Credits	**1**	

Hillsborough

- In order to reduce project effects to the beetle, Easton Development Company, LLC has proposed to comply with all applicable conservations measures as detailed in the Beetle Guidelines for transplantation of the one elderberry shrub. In addition, the applicant has proposed to purchase two beetle conservation credits at a Service-approved conservation bank with a service area encompassing the FPA. The proposed conservation credit component of the project is detailed below.

Hillsborough: Description of elderberry shrubs directly affected and proposed compensation

Habitat Type	Stem Diameter	Number of Stems	Exit Holes (Y/N)	Seedling Ratio	Native Plant Ratio	Total Elderberry Seedlings	Total Native Plants
Non-Riparian	1"-3"	5	N	1:1	1:1	5	5
Non-Riparian	3"-5"	2	N	2:1	1:1	4	4
Non-Riparian	5"+	-	-	3:1	1:1	-	-
Riparian	1"-3"	-	-	2:1	1:1	-	-
Riparian	3"-5"	-	-	6:1	2:1	-	-
Riparian	5"+	-	-	8:1	2:1	-	-
					TOTAL	**9**	**9**
					Min. Acreage	**0.082**	
					Credits	**2**	

Javanifard and Zarghami

- The applicant is assuming presence of the vernal pool crustaceans, habitat conservation credits will be purchased from a Service-approved vernal pool crustacean conservation bank with a service area covering the FPA at a ratio of 2:1 for habitat preservation (0.234 acre) and 1:1 for habitat creation (0.117 acre).

Sacramento Country Day School

- The applicant is assuming presence of the vernal pool crustaceans for areas directly and indirectly affected, habitat conservation credits will be purchased from a Service-approved vernal pool crustacean conservation bank with a service area covering the FPA at a ratio of 2:1 for habitat preservation (0.185 direct + 0.557 indirect) x 2 = 1.484 acres) and 1:1 for habitat creation (0.185 acre).

Action Area

The action area is defined in 50 CFR §402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. For the proposed action, the Service considers the action area to be the entire 3,510-acre FPA and the 156.6 acres for the off-site Backbone Infrastructure that may be directly impacted by construction related activities. The action area also includes all areas within 250 feet of the FPA that may be subject to indirect effects. Indirect effects are likely to include changes in hydrology, human intrusion, increased potential for non-native invasive species of plants and animals to colonize the area, and dust and noise from earthmoving equipment.

Analytical Framework for the Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the species' range-wide condition, the factors responsible for their condition, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed federal action and the effects of any interrelated or interdependent activities on the species; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the species' current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the species and the role of the action area in the survival and recovery of the species as the context for evaluating the significance of the effects of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Status of the Species

Vernal Pool Fairy Shrimp

For the most recent comprehensive assessment of the species' range-wide status, please refer to the *Vernal Pool Fairy Shrimp (Branchinecta lynchii) 5-Year Review: Summary and Evaluation* (Service, 2007). No change in the species' listing status was recommended in this 5-year review. Threats evaluated during that review and discussed in the final document have continued to act on the species since the 2007 5-year review was finalized, with loss of vernal pool habitat being the most significant effect. While there have been continued losses of vernal pool habitat throughout the various vernal pool regions identified in the Recovery Plan, including the Southeastern Sacramento Valley Vernal Pool Region where the proposed project is located, to date no project has proposed a level of effect for which the Service has issued a biological opinion of jeopardy for the species. The Service is in the process of finalizing its most current 5-year review for the species.

Vernal Pool Tadpole Shrimp

For the most recent comprehensive assessment of the species' range-wide status, please refer to the *Vernal Pool Tadpole Shrimp (Lepidurus packardi) 5-Year Review: Summary and Evaluation* (Service, 2007). No change in the species' listing status was recommended in this 5-year review. Threats evaluated during that review and discussed in the final document have continued to act on the species since the 2007 5-year review was finalized, with loss of vernal pool habitat being the most significant effect. While there have been continued losses of vernal pool habitat throughout the various vernal pool regions identified in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service, 2005), including the Southeastern Sacramento Valley Vernal Pool Region where the proposed project is located, to date no project has proposed a level of effect for which the Service has issued a biological opinion of jeopardy for the species. The Service is in the process of finalizing its most current 5-year review for the species.

Valley Elderberry Longhorn Beetle

Please refer to the *Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus) 5-year Review: Summary and Evaluation* (Service 2006). Since this review was published, the species has been proposed for delisting through the publication of the *Removal of the Valley Elderberry Longhorn Beetle From the Federal List of Endangered and Threatened Wildlife; Proposed Rule* (Service 2012). In the Proposed Rule, the Service proposes to remove the species from the Federal List of Endangered and Threatened Wildlife. This proposal is based on 1) the belief that the species persists in more locations and over a larger range than was known at the time of listing; 2) the belief that sufficient habitat will remain within its range into the foreseeable future; 3) past and ongoing riparian vegetation restoration; and 4) the persistence of elderberry shrubs on restored and/or public lands managed as open space. The Service is currently accepting public comments on the Proposed Rule prior to making a final determination on the listing of the species.

Environmental Baseline

Status of the vernal pool crustaceans in the Action Area -- While high density, high quality, and highly occupied habitat for the vernal pool crustaceans is present within central and southeastern Sacramento County, the FPA is located at slightly higher elevations in the northeastern portion of the County. The FPA increases in elevation from west to east, from roughly 300 to 700 feet in elevation. The FPA consists of largely undisturbed annual grasslands interspersed with oak woodlands, and habitat for the vernal pool crustaceans consists of low density vernal pools and seasonal wetlands, generally increasing in gradient and decreasing in suitability from west to east. The FPA is situated on the fringe of the range of the vernal pool crustaceans, and they have been detected during surveys on mainly the western portions of the action area on the Prairie City Road Business Park (vernal pool fairy shrimp), and a portion of the Backbone south of White Rock Road between Prairie City Road and Scott Road (vernal pool tadpole shrimp). These occurrences are located on the far western and southern edges of the FPA, respectively. The Javanifard and Zarghami and the Sacramento Country Day School properties are located in close proximity to these two properties and their wetland features are similar.

Therefore, with the exception of the sites where the species have been documented within the FPA which includes the Javanifard and Zarghami and Sacramento Country Day School properties, the remaining potential vernal pool crustacean habitat on-site is likely not occupied due to a general lack of habitat suitability on the northern and eastern edges of the FPA project. Changes in surface topography with the transition to the Sierra Nevada Foothills results in a lack of suitable habitat as the wetlands either do not support sufficient hydrology to support the species or wetlands maintain water for longer periods and are characterized by a more perennial nature. Insufficient hydrology in conjunction with being located at the eastern extent of the local species range makes the remaining wetland features unsuitable and unoccupied by the remaining suitable vernal pool crustacean habitat throughout the FPA project.

Factors affecting the vernal pool crustaceans in the Action Area--The FPA is largely undisturbed, other than three existing north-south roads, one homestead, and various utilities. The FPA has

been largely used for cattle grazing and some historic mining activities. The Service is not aware of any past, present, or future federal actions within the action area.

Status of the beetle in the Action Area-- Suitable habitat for the beetle exists within the FPA in the form of eight elderberry shrubs with 34 stems one inch or greater in diameter at ground level. These shrubs are widely dispersed, and a potential beetle exit hole was identified on one shrub. Based on the presence of suitable habitat, and the evidence of an exit hole, and because the FPA contains habitat components suitable for the breeding, resting, and dispersal of this species, the Service considers these eight elderberry shrubs throughout the FPA as likely to be occupied by the beetle.

Factors affecting the beetle in the Action Area-- As most of the FPA has not been disturbed, actions that may have affected the beetle include mainly the construction of roads and a rural residential site, historic and ongoing cattle grazing, and some historic mining activities. The Service is not aware of any past, present, or future federal actions within the action area.

Effects of the Action

Vernal Pool Crustaceans

The construction of the proposed project will result in direct effects to 1.802 acres of vernal pool crustacean habitat. This includes 1.500 acres of known occupied habitat, and 0.302 acre of habitat that has not been surveyed to date, but for which the Service believes there is reasonable likelihood of species presence. The project related activities, such as grading, placement of fill, paving, and the use of earth moving equipment, will result in the loss of vernal pool crustacean habitat and the death of an unknown number of cysts. The earthmoving equipment will be moving dirt and filling fairy shrimp habitat during construction activities and will likely crush or destroy the vernal pool crustacean cysts, or otherwise prevent the cysts from hatching.

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. The 0.557-acre of vernal pool crustacean habitat that will be avoided is outside the footprint of construction activities, but will be indirectly affected by the proposed project. The grading and ground disturbance from this road construction, in combination with the impervious nature of roads and associated infrastructure, is reasonably likely to impede the surface and subsurface hydrology of the vernal pool landscape outside the project footprint, leading to the eventual loss of that vernal pool habitat. It is reasonably likely that this indirect effect may extend up to 250-feet from the edge of project disturbance. All vernal pool crustacean individuals and their cysts inhabiting 0.557-acre of vernal pool crustacean habitat that will be affected as part of the project will be harmed, injured, or killed as a result of the indirect effects from the proposed project.

The applicants have proposed to offset the effects on the listed vernal pool crustaceans inhabiting 2.359 acres of suitable habitat that will be directly and indirectly affected by the FPA by purchasing vernal pool crustacean preservation credits for direct and indirect impacts and creation credits only for direct impacts at a Service-approved conservation bank(s) as outlined in

the Conservation Measures above. Contributing to the long-term preservation and management of vernal pool habitat is critical for the species' survival and recovery.

Valley Elderberry Longhorn Beetle

The FPA will result in direct effects to eight elderberry shrubs within the FPA with a total of 34 stems greater than one inch in diameter at ground level. Transplantation of affected elderberry shrubs is expected to adversely affect the beetle. Beetle larvae may be killed or the beetles' life cycle interrupted during or after the transplanting process. The transplanted elderberry shrub may experience stress or become unhealthy due to changes in soil, hydrology, or microclimate. This may reduce the shrubs suitability as habitat for the beetle, or impair the production of stems in the future. Branches containing larvae may be cut, broken, or crushed as a result of the transplantation process, or the shrub may die as a result of transplantation.

Temporal loss of habitat will occur. Although compensation for impacts to the beetle involves the creation of habitat, it may take several years for elderberry shrubs to grow to a size suitable for occupation by the beetle. Temporal loss of habitat will temporarily reduce the amount of habitat available to beetles and will contribute to habitat fragmentation. Transplanting the shrubs and planting additional elderberry seedlings and other associated natives will add habitat value to the bank in which they are planted.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the FPA are not considered in this section, because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any reasonably certain future actions in the action area that would result in cumulative effects.

Conclusion

After reviewing the current status of the vernal pool crustaceans and beetle, the environmental baseline for the action area covered in this biological opinion, the effects of the proposed project, the cumulative effects, and the proposed conservation measures, it is the Service's biological opinion that the Folsom Plan Area Specific Plan Project, as proposed, is not likely to jeopardize the continued existence of these species. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of the lack of cumulative effects, will not rise to the level of precluding recovery of the species or reducing the likelihood of survival of the species. The effects to the vernal pool crustaceans and beetle are small and discrete, relative to the range of the species, and although the loss of habitat will contribute to the overall reduction of habitat within the range of these species, the conservation measures will contribute to the long-term preservation and management of vernal pool crustacean and beetle habitat. The project will contribute to the conservation of the vernal pool crustaceans and beetle by preserving habitat at conservation banks that will manage large contiguous sections of habitat for the benefit of these species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement terms and conditions, or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

Amount or Extent of Take

Vernal Pool Crustaceans

The incidental take of vernal pool crustaceans anticipated for this project will result from the grading and destruction of 1.802 acres of vernal pool crustacean habitat on-site. Additionally, 0.557 acre of vernal pool crustacean habitat will be indirectly impacted by changes in hydrology from the proposed project. The life stage affected by this action will be the vernal pool crustacean cysts, which occur or are embedded in the soil of the vernal pool crustacean habitat, as well as adult crustaceans that will be using the indirectly affected pools until such time as the pools no longer allow for cyst hatching. Due to the fact that it is not possible to know how many adults and/or cysts are in any wetland feature, the Service cannot quantify the total number of vernal pool crustaceans that we anticipate will be taken as a result of the proposed action. In instances in which the total number of cysts and/or individuals anticipated to be taken cannot be determined, the Service may use the acreage of habitat impacted as a surrogate; since the take of

cysts and individuals anticipated will result from the destruction of the vernal pool crustacean habitat, the quantification of habitat acreage serves as a direct surrogate for the vernal pool crustaceans that will be lost. Therefore, the Service anticipates take incidental to this project as a total of 2.359 acres that will be lost as a result of project implementation.

Valley Elderberry Longhorn Beetle

The Service cannot quantify the total number of individuals that will be taken as a result of the proposed project because it is impossible to know how many beetles may inhabit the elderberry stems. The life cycle of the beetle takes one or two years to complete, during which it spends most of its life in the larval stage, living within the stems of elderberry shrubs. In instances in which the number of individuals that may be taken cannot be determined, the Service quantifies take in the number of stems one inch or greater in diameter at ground level. Since take is expected to result from these impacts to the beetles' habitat, the quantification of stems becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates take incidental to this project as the eight affected elderberry shrubs with 34 stems one inch or greater in diameter at ground level that will be transplanted.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool crustaceans and the beetle.

Reasonable and Prudent Measure

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the FPA on the vernal pool crustaceans and beetle:

1. All conservation measures as proposed in the biological assessment and outlined here in the Description of the Proposed Action will be fully implemented. Further, these conservation measures shall be supplemented by the Terms and Conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall include full implementation and adherence to conservation measures as proposed in the biological assessment and restated in this biological opinion as a condition of any permit issued for the project.

2. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the FPA is approached or exceeded, the Corps shall adhere to the following reporting requirement.

    a. For those components of the action that will result in direct habitat degradation or modification whereby incidental take in the form of harm is anticipated, the Corps will provide weekly updates to the Service with a precise accounting of the total acreage of habitat impacted. Updates shall also include any information about changes in project implementation that result in habitat disturbance not described in the Project Description and not analyzed in this biological opinion.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information or data bases. The Service is providing the following conservation recommendation:

1. The Corps should work with the Service to assist us in meeting the goals of the Recovery Plan for the vernal pool crustaceans as outlined in the *December 2005, Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005).

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendation.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Folsom Plan Area Specific Plan project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of the incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

The Folsom Plan Area Specific Plan project consists of nine individual project applicants that have been aggregated as part of this consultation. It is important to note that should any reinitiation criteria be met for any individual project applicant(s) this will require reinitiation of the entire biological opinion.

Please contact Kellie Berry, Chief, Sacramento Valley Division at (916) 414-6645 if you have questions regarding the proposed Folsom Plan Area Specific Plan Project.

Sincerely,

Jennifer M. Norris
Field Supervisor

cc:
Paul Jones, U.S. Environmental Protection Agency, San Francisco, CA
Todd Gardner, California Department of Fish and Wildlife, Rancho Cordova, CA
Bjorn Gregersen, ECORP Consulting, Inc., Rocklin, CA

Literature Cited

U.S. Fish and Wildlife Service (Service). 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxii + 574 pp.

_____. 2006. Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) 5-year Review: Summary and Evaluation. September 2006.

_____. 2007a. Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) 5-year Review: Summary and Evaluation. September 2007.

_____. 2007b. Vernal Pool Tadpole Shrimp (*Lepidurus packardi*) 5-year Review: Summary and Evaluation. September 2007.

ATTACHMENT E

SWAINSON'S HAWK MITIGATION PLAN (DRAFT - FOOTHILL AND ASSOCIATES 2014)

Swainson's Hawk Mitigation Plan

±423-Acre Russell Ranch
City of Folsom, California

DRAFT

Prepared for: The New Home Company

Date: July 9, 2014

Submitted by:

FOOTHILL ASSOCIATES

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DRAFT

1.0 INTRODUCTION

Foothill Associates has prepared this Swainson's Hawk Mitigation Plan (Plan) for the approximately 423-acre Russell Ranch project (Proposed Project), located in the City of Folsom, California. The project site is part of the Folsom South of U.S. Specific Plan Environmental Impact Report / Environmental Impact Statement (EIR/EIS) (AECOM 2011). The Plan was prepared in accordance with Mitigation Measure 3A.3-2b of the EIR/EIS, which states:

> *To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) of all project phases shall prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.*
>
> *Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant(s) shall preserve, to the satisfaction of the City or Sacramento County, as appropriate depending on agency jurisdiction, suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat lost as a result of the project, as determined by the City, or Sacramento County, after consultation with DFG* [currently operating as California Department of Fish and Wildlife (CDFW)] *and a qualified biologist.*
>
> *The 1:1 habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the City's planning area, or Sacramento County jurisdiction. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California, which call for the following mitigation ratios for loss of foraging habitat in these categories: 1:1 if within 1 mile of an active nest site, 0.75:1 if over 1 mile but less than 5 miles, and 0.5:1 if over 5 miles but less than 10 miles from an active nest site. Such mitigation shall be accomplished through credit purchase from an established mitigation bank approved to sell Swainson's hawk foraging habitat credits to mitigate losses in the SPA, if available, or through the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area and within Sacramento County. The City, or Sacramento County if outside City jurisdiction, after consultation with DFG, will determine the appropriateness of the mitigation land.*

1.1 Project Location and Site Description

The project site is located south of U.S. Highway 50, east of Placerville Road, north of White Rock Road, and west of the El Dorado County, in the City of Folsom, California. The centroid of the project site is 38° 38' 13.54" North, 121° 05' 26.39" West (**Figure 1**).

DRAFT

The approximately 423-acre project site is comprised of approximately 354.67 acres of annual grassland, which is considered suitable foraging habitat for Swainson's hawk. The project site is used for cattle grazing or horse pastureland. The remainder of the project site is comprised of ruderal/developed areas, including cell towers and graded roads, seasonal wetlands, seeps, and drainage corridors.

DRAFT

2.0 METHODOLOGY

2.1 Field Surveys

California Natural Diversity Database (CNDDB) records were obtained for all Swainson's hawk records occurring within five miles of the project site (CDFW 2014) (**Figure 1**). Foothill Associates' Senior Biologist Kelly Bayne, M.S., conducted a Swainson's hawk habitat evaluation within the project site and looked for potential nest trees within one mile of the project site on June 9 and 10, 2014.

2.2 Background

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. Approximately 85 percent of the known nests in the Central Valley are within riparian systems in Sacramento, San Joaquin, Sutter, and Yolo counties. Although the majority of the potential nesting habitat remaining is in riparian forests, nest sites are also found in isolated and roadside trees. Nest sites are generally nearby alfalfa or hay fields or other habitats or agricultural crops which provide an abundant and available prey source. Swainson's hawks prefer valley oaks (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), willows (*Salix* spp.), sycamores (*Platanus* spp.), and walnuts (*Juglans* spp.) as nest trees (CDFG 1994).

DRAFT

3.0 RESULTS

3.1 Nest Site Suitability

Three cottonwood trees occur within the project site. These trees are located just north of White Rock Road and are surrounded by annual grassland. A raptor nest was observed in one of the trees. A juvenile red-tailed hawk was observed during both site visits. The juvenile red-tailed hawk was likely a nestling within the nest before successfully fledging. These cottonwood trees provide marginally suitable habitat for Swainson's hawk; however, no Swainson's hawk nests were observed within the project site during site surveys.

3.2 CNDDB Occurrences

There are no CNDDB records for Swainson's hawk within one mile of the project site. There are five records at four locations within five miles of the project site. The information for each occurrence within five miles of the project site is summarized below. The dates for each occurrence were taken from the "Date Site Last Seen" in the CNDDB record.

- CNDDB occurrence number 200 is from 1982 and is approximately 1.28 miles southwest of the project site. The occurrence states that one adult was observed, but no nests were found.

- CNDDB occurrence number 2234 is from 2012 and is approximately 3.90 miles southwest of the project site. A nesting pair with one nestling was observed within a large cottonwood (*Populus* sp.).

- CNDDB occurrence number 2662 is from 1962 and CNDDB occurrence number 63 is from 1990. These occurrence numbers are for the same location, approximately 4.00 miles northwest of the project site. An active nest was observed in a black oak (*Quercus kelloggii*).

- CNDDB occurrence number 2203 is from 2011 and is approximately 4.25 miles southwest of the project site. An active nest was observed within a tree within Prairie City State Vehicular Recreation Area.

DRAFT

4.0 CONCLUSIONS

4.1 Swainson's Hawk Mitigation

No nests were observed within one mile of the project site, but several active nests have been recorded within five miles of the site in recent years. Therefore, in accordance with the EIR/EIR, the project proponent proposes to preserve Swainson's hawk foraging habitat at a 0.75:1 ratio. The project site contains 354.67 acres of suitable Swainson's hawk foraging habitat. Therefore, the project proponent shall purchase credits for 266.00 acres of Swainson's hawk foraging habitat at an approved mitigation bank within Sacramento County. In accordance Mitigation Measure 3A.3-2b, the City shall consult with California Department of Fish and Wildlife (CDFW) to determine the appropriateness of the mitigation. The purchase of mitigation credits at an approved bank must be completed prior to the start of any ground-disturbing activities.

DRAFT

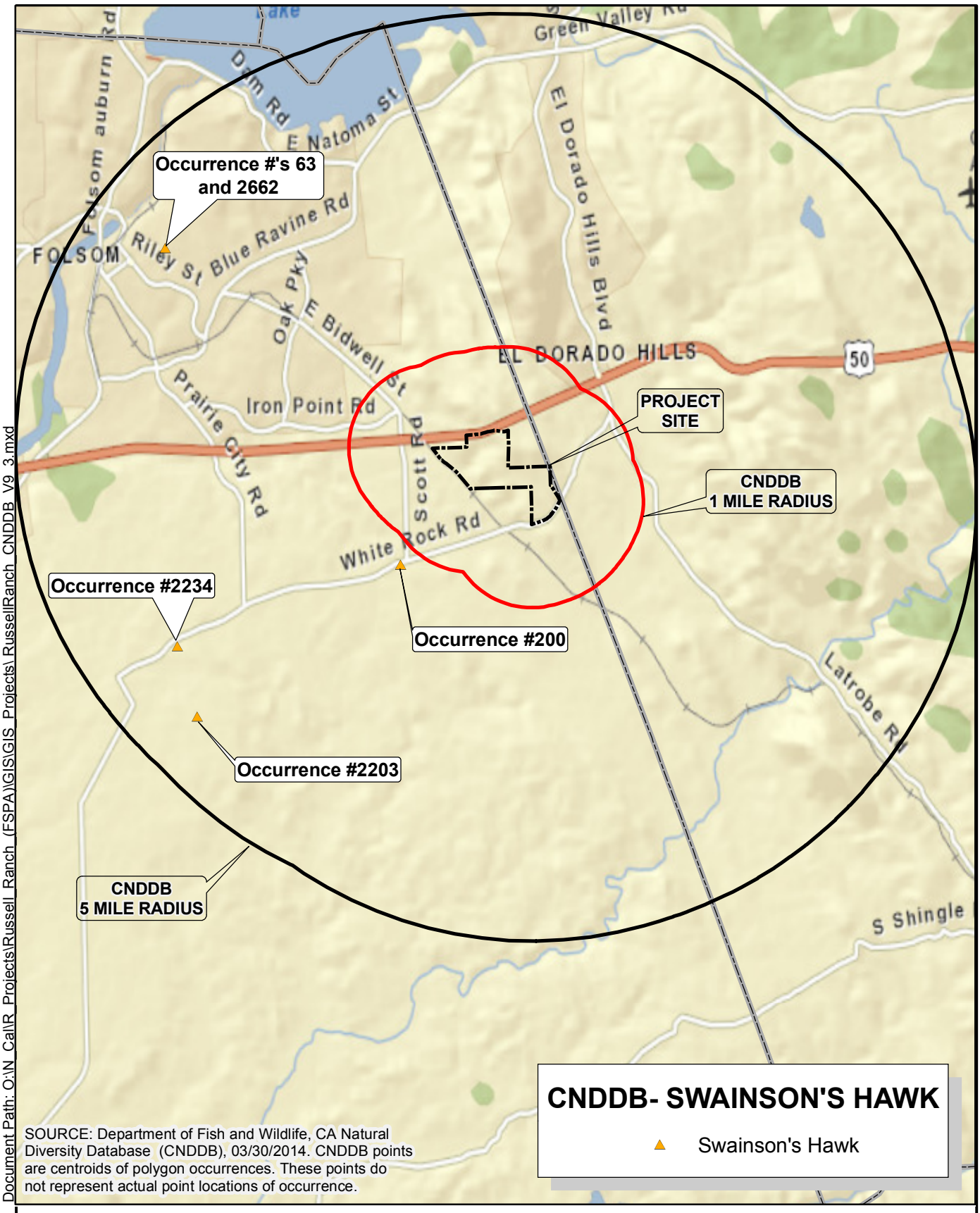
5.0 LITERATURE CITED

California Department of Fish and Game (CDFG). 1994. *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*. November 1, 1994.

California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Database (CNDDB) Occurrences of Swainson's Hawk within 5 Miles of the Project Site. March 30, 2014.

AECOM. 2011. *Folsom South of U.S. Specific Plan Environmental Impact Report (EIR)/Environmental Impact Statement (EIS).* Prepared for the City of Folsom and the U.S. Army Corps of Engineers. May 2011.

DRAFT



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CNDDB

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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N

0 1 2
SCALE IN MILES

Drawn By: KER
Date: 06/03/2014

FIGURE 1

APPENDIX F

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

February 7, 2014

Pierre Martinez
The New Home Company
2220 Douglas Boulevard, Suite 240
Roseville, CA 95661

RE: Russell-Promontory Property Tree Survey

Dear Mr. Martinez:

A Foothill Associates' Certified Arborist completed a tree survey for the Russell Ranch property located northeast of the intersection of Placerville Road and White Rock Road, in the City of Folsom, Sacramento County, California. The survey was conducted on January 27, 2014 in compliance with the City of Folsom Tree Preservation Ordinance as stated below:

> The *City of Folsom Tree Preservation Ordinance* (Chapter 12.16 of the Municipal Code) regulates the removal of street trees and native oak trees and the encroachment of construction activities within their driplines. All native oak trees with a trunk diameter of six inches or greater (measured at 54 inches above grade), or a multiple-trunk tree with an aggregate trunk diameter of 20 inches or greater, are subject to the ordinance. All trees within 12.5' of the property line along a public street are also protected under the ordinance.

There are no native oak trees or street trees located on the project site. However, four Fremont cottonwoods (*Populus fremontii*), six red willows (*Salix laevigata*) and one black willow (*Salix gooddingii*) were observed and their locations documented with a Trimble GeoXT Global Positioning Systems (GPS) device. Since these trees are not protected by the City, no mitigation or permits from the City are required for the removal of these trees.

If you have any questions or wish further information, please do not hesitate to contact me at (916) 435-1202 or email kvail@foothill.com.

Sincerely,

Kirk Vail
ISA Certified Arborist #WE-4575A

APPENDIX G

Cultural Resources Impact Assessment

Non-Backbone Russell Ranch Project

Specific Plan Amendment for the Folsom South of U.S. Highway 50 Specific Plan Project

Sacramento County, California

Prepared For:

City of Folsom
Community Development Department

December 2014

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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1.0 INTRODUCTION

This report addresses known historic, prehistoric, and paleontological resources in the Project vicinity and the potential for unknown resources to exist. Prehistoric resources are those sites and artifacts associated with indigenous people, generally prior to contact with people of European descent (Euroamericans). Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region. Paleontological resources are fossilized remains of non-human organisms.

The following analysis summarizes the existing setting and briefly describes the potential effects to cultural resources of the historic and prehistoric periods, and paleontological resources within the Russell Ranch property boundary (Project) and includes changes to the previously analyzed Backbone Project area within the Russell Ranch property. It also includes an impact assessment for two potential Sacramento Metropolitan Utility District (SMUD) substations along Placerville Road. The analysis will both identify the thresholds of significance of possible impacts associated with the Project, and develop mitigation measures that would be necessary to reduce impacts to a less-than-significant level. Information for this report was drawn from the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project, as well as numerous confidential technical studies prepared by ECORP Consulting, Inc. in support of the federal permitting for the Project.

The off-site infrastructure elements required to support the Russell Ranch project are being addressed separately by the South of Highway 50 Backbone Infrastructure Project Initial Study, currently in preparation.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Paleontological Resources

Background

The Project Area is situated on the western edge of the western Sierra Nevada metamorphic belt, which is a unit of metamorphic rock that measures approximately 180 miles long and 20 to 40 miles wide in the western foothills of the Sierra Nevada. Bedrock within this belt consists of volcanic and metasedimentary rocks of Paleozoic and Mesozoic age, which were formed between 542 to 65 million years ago. These rocks are characterized by low-grade metamorphism in the greenschist facies.

The underlying geologic formation units for the Project Area consist of Salt Springs Slate, Copper Hill Volcanics, and Gopher Ridge Volcanics. The Project and surrounding area has been assessed and inventoried for geologic formation units and the potential paleontological productivity of each unit. A summary of the methods and results is provided below.

Existing Paleontological Resources

In support of the preparation of the EIR/EIS for the FPASP, AECOM carried out a paleontological inventory of the Project Area. This included a paleontological records search at the University of

California Museum of Paleontology (UCMP) at the University of California-Berkeley on August 12, 2009, as well as a review of regional geologic maps from the California Geological Survey and existing literature on paleontological resources in and near the Project Area and vicinity. A reconnaissance-level field survey was conducted in June 2007.

The paleontological assessment determined that there are no fossil vertebrate localities located within the Project Area. The Salt Springs Slate, Copper Hill Volcanics, and Gopher Ridge Volcanics formations consist of Jurassic-age rocks that formed at depth beneath the earth's surface and have since been deformed and metamorphosed. The UCMP database does not contain any records of vertebrate or plant fossils within these formations. Because of the nature of these rock formations and the lack of previously recorded vertebrate or plant fossil localities, these formations are not considered to be paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines.

The Project Area is considered to have low sensitivity for paleontological resources.

2.2 Cultural Resources

Background

Prehistoric and Native American Context

The archaeological record indicates that between approximately 10,000 and 8,000 years before the present (BP), a predominantly hunting economy existed in the region, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods. In contrast to this period, there was a shift in focus from hunting towards a greater reliance on plant resources around 8,000 BP. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the "Millingstone Horizon" (Wallace 1978). Evidence from archaeological sites dating from approximately 5,000 BP indicates a continuation from the previous period of reliance on both plant gathering and hunting, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. The introduction of the bow and arrow into the region sometime around 1,000 BP is indicated by the presence of small projectile points (Wallace 1978; Elsasser 1978; Moratto 1984).

Ethnographically, the Project Area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups. Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged

(Kroeber 1925; Wilson and Towne 1978). Subsistence activities centered on the gathering of acorns (tan bark oak and black oak were preferred), seeds, and other plant resources. The hunting of animals such as deer and rabbits, and fishing were also an important part of normal subsistence activities. Trade was important with goods such as shell beads, salmon, deer skins and nuts, traveling from the coast and valleys up into the Sierra Nevada Mountains and beyond to the east, and vice versa (Wilson and Towne 1978).

The Spanish arrived on the central California coast in 1769. Though the Nisenan appear to have escaped being removed to missions by the Spanish, they were not spared the ravages of European diseases. In 1833, an epidemic—probably malaria—raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of Colluma (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Nisenan culture. By the Great Depression, no Nisenan remained who could remember the days before the arrival of the Euro-Americans (Wilson and Towne 1978).

Euroamerican and Historical Context

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American Rivers in 1839 and petitioned the Mexican governor of Alta (Upper) California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. That same year Mexico ceded Alta California to the United States, and in 1850 California became a state. The Folsom area was settled soon after, in 1849, by African-American miners and from that circumstance the area became known as Negro Bar. By 1855 Chinese miners were reworking abandoned diggings and a large number of them were employed at various regional mines through the 1880s (Westwood et al. 2011).

Mining is the dominant historical theme in the Project Area and in the surrounding lands. The region later known as the Folsom Mining District was extensively placer mined during the Gold Rush. Surface deposits (usually less than 3 feet deep) were placer mined through a series of small hand-dug excavations. The surface gravels were washed by pan or by higher-volume methods that employed rockers, long toms, and/or sluice boxes. These activities were often initially concentrated along drainages and swales such as Morrison Creek, which drains the Project Area. Ground sluicing, a technique which uses water (not under pressure) to break down gold-bearing gravels, could have occurred any time from the 1850s up until the turn of the century. Low-pressure hydraulic mining took place at Rebel Hill, located approximately 4.3 miles west of the project area, sometime between the mid-1850s and 1884.

From the early 1850s until the late 1890s and again in 1925, drift mining was employed at Alder Creek. As cemented gravels cap some of the area, shafts were sunk through this hard surface layer into the "softer" gravels. Gold-bearing leads were followed out with drift-mining techniques in these softer gravels. A more detailed historic context statement is provided in the PHPS (Westwood et al. 2011).

Existing Cultural Resources

Efforts to identify cultural resources within the Project Area consisted of conducting records searches and literature reviews, consulting with NAHC and Native American representatives, carrying out archival research, conducting archaeological surveys and analyses, and subsurface investigations. The cultural resources inventory of the Project Area is presented below and was drawn from the larger Folsom South Area of Potential Effects (ECORP 2012), which was later divided into several smaller projects, including Russell Ranch (formerly called Russell Promontory). The following inventory methods and results take into account all applicable technical studies and documentation.

Records Search

Numerous records searches and literature reviews have been carried out over a nearly 10 year process of cultural resources investigations within the Specific Plan Area (FPASP). The most recent records search was completed at the North Central Information Center (NCIC) of the California Historical Resources Information System at California State University-Sacramento on 6 June 2014. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location, and whether previously documented prehistoric or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in Sacramento County gathered at the North Central Information Center (NCIC) during the inventory phase of the project (Westwood et. al 2012), the Sacramento Room in the Sacramento Central Library, the Center for Sacramento History, Folsom Historical Society and Folsom History Museum, and the County Assessor's Office were visited to gather records and maps pertinent to transportation routes, land ownership, mining and homesteading claims, mining companies, individual landowners such as William Carpenter and J.P. Rhoades, and individual or company-owned water rights within the Project Area.

Several online resources were examined to gather further information about William Carpenter, J.P. Rhoades, and the Lincoln Highway. These included, among others: ancestry.com, findagrave.com, the California Digital Newspaper Collection (CDNC), the American History and Genealogy Project Sacramento, rootsweb.com (Sacramento Death Notices 1900s), the Lincoln Highway National Museum and Archives, and the Federal Highway Administration (FHWA) Highway History for Lincoln Highway. For additional land patent records, the Bureau of Land Management (BLM) General Land Office (GLO) survey plats were researched (BLM 2013).

Native American Consultation

ECORP contacted the California Native American Heritage Commission (NAHC) on 6 April 2012 to request an updated search of the Sacred Land Files for the Project Area. Although the search failed to yield information on Native American cultural resources located within or adjacent to the Project Area, the NAHC provided a list of individuals and organizations in the Native American community that may be able to provide information about unrecorded sites in the Project vicinity. Project notification letters were sent out to contacts for the entire FPASP in January 2009 and the USACE conducted follow-up consultation in 2013 with the individuals listed in the updated contacts list. In

addition, the USACE has been consulting with tribes throughout the FPASP compliance process. The United Auburn Indian Community, Shingle Springs Band of Miwok Indians, and Wilton Rancheria were invited to be concurring parties on the First Amended Programmatic Agreement (FAPA; see Section 4.4.3), attended a field tour with the applicants and ECORP, and have been sent copies of all technical reports prepared under the FAPA to date. Government-to-government consultation between the tribes and USACE is ongoing and will continue throughout the lifetime of the FAPA and any subsequent amendments.

In addition, the City carried out consultation under Senate Bill 18 as part of this SPA. Results of that consultation are provided in the applicable sections, below.

Geoarchaeological Assessment

As a result of geoarchaeological analyses carried out for the FPASP, Windingstad and Homburg (2011, 2012) categorized the SPA into three sensitivity zones that reflect the potential for buried cultural resources: low, moderate, and high. The results indicated that a high potential for intact buried cultural resources exists below certain ancient terraces that were formed as a result of the deposition of sediment from flowing water or gravity, which have the potential to have buried occupational sites that were once on the surface. Trenching on these now-buried surfaces, which are in very small, localized areas, revealed multiple buried soils that dated back to the middle Holocene. Therefore, in those areas, archaeological resources are possible down to a depth of 1.5 meters below the surface.

Fieldwork

The entire Project Area has been subjected to an intensive pedestrian survey by qualified professional archaeologists using 10 to 15 meter transect intervals. Fieldwork for the Russell Ranch Project Area and the southernmost potential SMUD substation was conducted between March and August of 2012. The fieldwork consisted of an inventory including a combination of site relocation, updating, recording using a submeter GPS receiver, and a pedestrian survey. Subsequently, in December 2012, ECORP conducted test excavations in order to evaluate the cultural resources that were identified to have the potential for subsurface deposits and were eligible for the National Register of Historic Places (NRHP)/California Register of Historical Resources (CRHR). Fieldwork for the off-site portions of the Russell Ranch Project, including the northernmost potential SMUD substation, is included in the Backbone Project area, which was carried out by a number of cultural resources consultants at various times as early as 1990, and as recently as 2012.

Results

The results of the cultural resources inventories and surveys are for the portion of the Russell Ranch property that does not fall within the Backbone Infrastructure Area of Potential Effects (APE), which overlaps all properties within the FPASP. The inventory of the Backbone is addressed separately, in the South of Highway 50 Backbone Infrastructure Project Initial Study/Mitigated Negative Declaration, dated December 2014.

Russell Ranch Inventory

As a result of the inventory and evaluations of eligibility for the non-Backbone Russell Ranch Project Area, ECORP documented 19 sites and isolates, all archaeological, all from the historic period. Several of these overlap the Backbone APE that were evaluated for eligibility as a part of the Backbone APE evaluation technical report (Mason et al. 2013). Sites that lie exclusively within the Backbone are addressed separately in the South of Highway 50 Backbone Infrastructure Project Initial Study.

- 12 rock alignments or walls (P-34-1481, -1484, -2164, -4484, -4587, -4585, -4586, -4588, -4589, -4591,-4593, and -4672)
- 1 rock pile (P-34-4666)
- 1 barbed wire fence line (P-34-4665)
- 1 concrete water trough (P-34-1369)
- 1 prospecting pit (P-34-4483)
- 1 historic complex (P-34-2166, Brooks Hotel)
- 2 ditches (P-34-1745, Keefe-McDerby Mine Ditch and P-34-4590)

Of these resources, only the Keefe McDerby Mine Ditch (P-34-1745) and the Brooks Hotel Site (P-34-2166) were found to be eligible for inclusion in the NRHP and CRHR. Eligibility of cultural resources is assessed by applying criteria described in Section 4.4.3, and as documented in the confidential cultural resources technical reports prepared for the Project Area.

The Keefe-McDerby Mine Ditch originates in the Carson Creek drainage and terminates at a down-shoot approximately two miles to the northwest where, originally, the water was carried by flume and/or pipe to Willow Springs Hill, located between Alder and Willow Creeks and spanning about a mile long. Prior to the construction of the Natoma canal, the miners at the Willow Springs Hill Diggings surveyed and dug the Keefe-McDerby Mine Ditch to supply water to their claims, sometime around 1851. This ditch and the water rights to it were bought and sold many times to various mining companies throughout the period of 1851 to 1875, and each company made its own alterations and extensions to the ditch, including the short section that is present within the Russell Ranch project area. In 1877, with the mines becoming less profitable and competition from the Natoma Company pressuring other water systems out of business, the ditch was acquired by J.J. Crawford, who marketed the water for agricultural interests instead of mining. This successful divergence of use allowed for the upkeep of the ditch system until the early 1900s, when agricultural prospects finally began to show decreased returns. By 1923, most portions of the Keefe-McDerby ditch system were abandoned.

The Brooks Hotel was built by Rueben Brooks sometime during the 1870s, probably to support the continued freighting activity along White Rock Road (Wilson 1986). Rueben Brooks was the co-owner of the Brooks Quartz Claim, which was a mining claim established in the 1850s. Brooks operated a quartz mill at the mine, which was located south of the hotel and across the road. According to Wilson, the mine was nicknamed the Jersey Blue Mine because of the color of the quartz rock that was mined there. Brooks co-owned the mine with George Wilkinson and John York

who worked the claim for many years (Wilson 1986). According to Sacramento County Assessor Parcel Maps, Mr. C. Brooks owned the property until the 1880s when it was sold to Charles Chapman, then owner of the White Rock Springs Ranch.

There are no cultural resources located within the footprints of the two potential SMUD substations.

3.0 REGULATORY SETTING

3.1 Professional Paleontological Standards

The Society of Vertebrate Paleontology, a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines (Folsom and USACE 2010).

A "unique paleontological resource or site" is one that is considered significant under current professional paleontological standards. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered)
- wherein other species are also identifiable, and important information regarding life history of individuals can
- be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, and the extent to which they have already been identified and documented. "Value" also considers the ability to recover similar materials under more controlled conditions (such as for scholarly research). Marine invertebrates are generally common because the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are, comparatively, relatively rare (Folsom and USACE 2010).

3.2 Cultural Resources Obligations Under CEQA

CEQA (Title 14, CCR, Article 5, Section 15064.5) applies to cultural resources of the historical and prehistoric periods. Any project with an effect that may cause a substantial adverse change in the significance of a "Historical Resource," either directly or indirectly, is a project that may have a significant impact on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources.

Generally, significant cultural resources ("Historical Resources" under CEQA) must meet at least one of four criteria that define eligibility for listing on either the California Register of Historical Resources (CRHR) (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4852) or the National Register of Historic Places (NRHP) (36 CFR 60.4). Cultural resources eligible for listing on the NRHP are considered Historic Properties under 36 CFR Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered to be Historical Resources (significant) under CEQA. A resource can also be a Historical Resource if it is included in a local register of Historical Resources (as defined by PRC Sec. 5020.1[k]), or identified in an Historical Resource survey meeting the requirements of PRC Sec. 5024.1(g) (presumption of historical significance) or is determined to be historically significant by the CEQA lead agency [CCR Title 14, Section 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

The eligibility criteria for the CRHR are as follows [CCR Title 14, Section 4852(b)]:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; and/or
2. It is associated with the lives of persons important to local, California, or national history; and/or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)].

Impacts to a Historical Resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(a)]. Resources that have been evaluated and found to not be Historical Resources under CEQA are not required to be afforded any consideration under CEQA.

The Lead Agency is responsible for ensuring compliance with mitigation measures for Historical Resources, as defined by CEQA, in order to reduce impacts. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, Mitigation Monitoring or Reporting, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the Project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate

reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

Senate Bill 18

Senate Bill (SB) 18 was signed into law in September 2004 and became effective in March 2005. SB 18 (Burton, Chapter 905, Statutes of 2004) requires city and county governments to consult with California Native American tribes early in the planning process with the intent of protecting traditional tribal cultural places. The purpose of involving tribes at the early stage of planning efforts is to allow consideration of tribal cultural places in the context of broad local land use policy before project-level land use decisions are made by a local government. As such, SB 18 applies to the adoption or substantial amendment of general or specific plans, and to the dedication of open space that contains tribal cultural resources. The process by which consultation must occur in these cases was published by the Governor's Office of Planning and Research through its *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (November 14, 2005).

3.3 Cultural Resources Obligations Under Section 106 NHPA

Because this Project is also subject to a Section 404 Clean Water Act permit from the USACE, it is also subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). Under the federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in the Project's APE must be evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

"The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and:

A. is associated with events that have made a significant contribution to the broad patterns of our history; and/or

B. is associated with the lives of a person or persons significance in our past; and/or

C. embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or

D. has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4).

Effects to NRHP-eligible resources (Historic Properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting,

materials, workmanship, feeling, or association. Resources that have been evaluated and found to not be Historic Properties under Section 106 are not required to be afforded any consideration.

In 2011, and in accordance with 36 CFR 800.14, the USACE, in consultation with the California Office of Historic Preservation (OHP) and Advisory Council on Historic Preservation (ACHP), executed a Programmatic Agreement (PA) to comply with Section 106 NHPA. The City of Folsom, as CEQA lead agency, served as a concurring party to the PA and was consulted in its development. In October 2013, the PA was amended by the signatories and was thereafter referred to as the First Amended Programmatic Agreement (FAPA). Execution of the original PA and FAPA occurred prior to issuance of the Federal permit and prior to authorization for any aspect or component of the Project. Items required by the FAPA and that have been completed include an inventory and evaluation for cultural resources, a Finding of Effect, a historic property treatment plan, and a historic property management plan. The FAPA provides the process by which all cultural resources assessments are carried out for the FPASP, including the Project Area, and also addresses such for both Section 106 and CEQA compliance.

3.4 Local Regulations

City of Folsom 1993 General Plan

The Folsom General Plan (GP) identifies the following applicable goals and policies to provide further protection to cultural and Historical Resources:

Goal 1 To retain and enhance Folsom's quality of separate identity and sense of community. Included in the definition of community identity and feel, are the Folsom historic district and other historic places throughout the community.

Policy 1.6 Folsom's historic district shall be enhanced and maintained through the improvement of public facilities.

Policy 1.7 Historic buildings or locations shall be preserved or incorporated into the design of new developments.

Policy 1.8 The City shall prepare an inventory of historically and culturally significant buildings and sites. The City should investigate measures for historic preservation of these building sites.

Goal 26 The City shall actively encourage the restoration and maintenance of historic buildings or sites. (City of Folsom 2014).

4.0 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methods utilized to analyze and determine the Proposed Project's potential impacts related to paleontological and cultural resources.

4.1 Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and the Folsom South of U.S. Highway 50 Specific Plan, a significant impact would occur if the proposed project would result in the following:

- Cause a substantial adverse change in the significance of a Historical Resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource on site or unique geologic features; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(b)]. CEQA Historical Resources include resources that are eligible for the NRHP or the CRHR [CCR Title 14, Section 15064.5(a)]. Such resources can be buildings, structures, and facilities from the historic period and prehistoric and historic archaeological sites. Demolition or alteration of eligible buildings, structures, and features to the extent that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed "visual impacts") of eligible buildings and above-ground structures and facilities in the Project area could also result in significant impacts. All potentially significant impacts would occur as a result of construction.

4.2 Method of Analysis

Paleontology

A paleontological assessment consisting of a stratigraphic inventory, a paleontological resource inventory, and a field survey was completed by AECOM for the South of U.S. 50 Specific Plan EIR/EIS (FPASP EIR/EIS). The purpose of the assessment was to determine if paleontological resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered paleontological resources.

Cultural Resources

The Project Area has been subjected to a cultural resources inventory and evaluations of significance by professional archaeologists meeting the Secretary of the Interior's Professional Qualifications Standards. Those studies have been documented in confidential technical reports, which were used to conduct an assessment of development activities related to the Proposed Project and the alternatives under consideration. These Project activities were evaluated for their potential to disturb these resources through direct action (e.g., development of roads and utility lines through known sites) or indirect activity (e.g., increasing visibility of and access to sensitive cultural resources that could lead to vandalism or looting).

Native American Consultation

Because the Project is seeking a Specific Plan Amendment to the FPASP, the City was required to initiate consultation under SB 18. On May 19, 2014, the City requested an SB 18 contact list from the California Native American Heritage Commission (NAHC). On May 29, 2014, the NAHC responded with a list of five California Native American tribes and individuals who had notified the NAHC of their desire to consult under SB 18 in the vicinity of the Project. On June 19, 2014, the City mailed SB 18 notification letters to Nicolas Fonseca (Shingle Springs Band of Miwok Indians), Eileen Moon (T'si-Akim Maidu), Grayson Coney (T'si-Akim Maidu), Don Ryberg (T'si-Akim Maidu), and Gene Whitehouse (United Auburn Indian Community of the Auburn Rancheria), offering them an opportunity to consult within the 90-day comment period scheduled to end on September 18, 2014. On August 7, 2014, the City mailed 45-day notification letters to all five contacts, and on September 16, the City mailed 90-day notification letters.

4.3 Project-Specific Impacts and Mitigation Measures

The following discussion of impacts to cultural and paleontological resources was prepared jointly by ECORP and the City and is based on the implementation of the proposed project in comparison to existing conditions and the standards of significance presented above.

Impact 4.3-1: Loss of Historical Resources. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

Based on the inventories and evaluations of eligibility performed to date, two historic resources exist within the project site. The Brooks Hotel Ranch Complex and the Keefe-McDerby Mine Ditch are both archaeological sites from the historic period and constitute Historical Resources for the purpose of CEQA.

The 19 on-site resources presented in the cultural analysis are a subset of the entire inventory of cultural resources in the project area. The 17 remaining resources, including 12 rock alignments, a rock pile, a barbed wire fence line, a concrete water trough, a prospecting pit, and a ditch, do not meet the criteria described in the Regulatory Setting section, and are not considered Historical Resources under CEQA.

The proposed project, including the installation of subsurface utilities and related infrastructure, which may include trenching, grading, or jacking and boring, would impact the Brooks Hotel Ranch Complex and the Keefe-McDerby Mine Ditch within the project site. The impact is considered to be potentially significant because the aforementioned Historical Resources would be subjected to a loss of integrity as a result of the project activities (e.g., the resources may be destroyed and the characteristics that made the resource eligible may be materially impaired). However, the Brooks Hotel site and a segment of the Keefe-McDerby Mine Ditch would also be impacted and mitigated by the South of U.S. 50 Backbone Infrastructure Project. The proposed project would only be responsible for mitigation of impacts to the Brooks Hotel site and a segment of the Keefe-McDerby Mine Ditch that falls within the project area.

Preservation in place was considered for the two Historical Resources during the project planning process. Factors weighed in the consideration included the presence of other biological or water resources and any restrictions on the flexibility of locations of engineering, roadway access, and utilities required to service the proposed project. The factors were weighed during the preparation of finding of effect documentation, prepared under the FAPA.

Preservation in place of the segment of the Keefe-McDerby Mine Ditch would cause a shift of residential lots into planned open space. The shift would cause an effect to biological resources habitats that are required to be preserved. Because the majority of the ditch falls outside of the project area, preservation in place of the entire resource is not feasible or under the control of the project applicant. Preservation in place of the Brooks Hotel site is not possible because avoidance would trigger new impacts to waters of the US and would affect the development of necessary backbone infrastructure. As a result, impacts to the Historical Resources could not be avoided, but the effects could be reduced to a less-than-significant level with appropriate mitigation measures. Without implementation of mitigation measures, impacts to Historical Resources would be ***potentially significant***. Although the proposed project would result in a reduction in units, removal of commercial uses, and an increase in open space as compared to the FPASP approved land uses, the proposed project would still include development on the same site, resulting in similar impacts to Historical Resources as the approved FPASP.

Project-Specific Mitigation Measures(s)

Compliance with the procedures for mitigating significant impacts presented in the FAPA and Historic Property Management Plan for the FPSPA and the Historic Property Treatment Plan would reduce any potential adverse impacts. Implementation of the following mitigation measure would reduce potentially significant impacts related to damaging or destroying historic cultural resources during ground disturbing activities to a *less-than-significant* level.

Mitigation Measure 4.3-1 Comply with the First Amended Programmatic Agreement and Carry Out Mitigation

The FAPA provides a management framework for identifying historic properties and Historical Resources, determining adverse effects, and resolving those adverse effects with appropriate

mitigation. Proof of compliance with the applicable procedures in the FAPA and implementation of applicable historic property treatment plan (HPTP) (Westwood and Knapp 2013b and 2013c) with regard to mitigation for the Keefe-McDerby Mine Ditch and Brooks Hotel Site shall be provided to the City's Community Development Department prior to authorization of any ground disturbing activities in any given segment of the project area. Proof of compliance is defined as written approval from the USACE of all applicable mitigation documentation generated from implementation of an approved HPTP and includes the following mitigation actions:

- *Historic American Engineering Record Documentation of the Keefe-McDerby Mine Ditch (P-34-1475):*
    - *In order to determine the appropriate level of documentation necessary, the USACE shall first consult with the National Park Service (NPS), which administers the Historic American Engineering Record (HAER) program. Consultation with the NPS will be initiated through the submission of the Department of Parks and Recreation (DPR) site record and copies of applicable technical reports with a request for review and issuance of a stipulation letter. Unless an objection to the requirements of the stipulation letter is expressed and resolved through the process outlined in the FAPA, the level of documentation stipulated by the NPS shall be implemented and all documentation will be approved by the USACE and NPS prior to grounddisturbing activities affecting the resource, or as governed by the permit conditions. Focused archival research conducted as part of the HAER documentation shall be incorporated into the revised cultural context statement for the SPA through the Historic Property Management Plan. A non-archival set of the final documentation shall be submitted to the City's Community Development Department.*
- *Data Recovery Excavations of the Brooks Hotel Site (P-34-2166):*
    - *Data recovery shall follow the standards and guidelines in the HPTP and shall include at least four one meter by one meter excavation units. The results of the data recovery, including results of excavation, laboratory analysis, artifact analysis, and archival research, shall be documented in a confidential data recovery technical report, which shall be submitted to the City's Community Development Department.*
- *Geoarchaeological Monitoring:*
    - *Due to a potential for deeply buried archaeological resources down to a depth of 1.5 meters (approximately five feet) below soil formations known as the T-2 terrace, where colluvial deposits grade onto the T-2 terrace, and along the distal edge of tributary alluvial fans, all ground disturbing activity in those areas shall be monitored by a qualified professional archaeologist with a specialization in geoarchaeology. Once subsurface disturbance extends beyond 1.5 meters below surface, monitoring is no longer needed.*
    - *A confidential map showing the locations of required monitoring has been submitted to the City's Community Development Department. The City shall apply a map condition that requires geoarchaeological monitoring in the T-2 formation and along*

the distal edge of tributary alluvial fans only. A copy of the monitoring report shall be submitted as proof of compliance to the City's Community Development Department. In the event that future off-site improvements are required, which are not currently identified and are located outside of the boundaries of the FPASP area, then the City and applicant shall comply with the procedures for identification, evaluation, and treatment of Historical Resources under CEQA, as described in Section 4.4.3 of the Cultural Resources Impact Assessment, and with Mitigation Measure 3A.5-1b of the FPASP EIR/EIS.

FPASP EIR/EIS Applicable Mitigation Measure(s)

None applicable.

Impact 4.4-2: Loss of unique archaeological resources or human remains. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

As noted previously, the Brooks Hotel Ranch Complex and the Keefe-McDerby Mine Ditch are both archaeological sites from the historic period and constitute Historical Resources for the purpose of CEQA. The proposed project would be responsible for mitigation of impacts to the Brooks Hotel site and a segment of the Keefe-McDerby Mine Ditch that falls within the project area.

As discussed above, because the proposed project requires a Specific Plan Amendment, the City mailed SB 18 tribal consultation letters on May 29, 2014 to the five Native American tribes and individuals who had notified the NAHC of their desire to consult under SB 18 in the vicinity of the project area. Only one comment letter was received within the 90-day comment period (June 19 – September 18). On July 10, 2014, the City received a written response from the Shingle Springs Band of Miwok Indians (SSBMI), indicating the desire to consult. Tribal representatives Andrew Godsey and Kara Perry from SSBMI participated in a meeting with City staff, the applicant, and consultants on July 24, 2014 to discuss the proposed project. During the meeting, the City and SSBMI discussed the proposed project. Although SSBMI could not identify any specific impacts caused by the project to tribal cultural resources, Mr. Godsey did speak to the overall desire for tribal monitors to be present during construction and indicated that he would send a written comment letter prior to the close of the comment period. A comment letter or follow-up correspondence was never received by the City, and the information provided by SSBMI during the July 24 consultation meeting did not result in specific impacts to known and definable tribal cultural resources. If cultural resources are unearthed during project construction activities, Mitigation Measure 4.4-2(a) shall apply.

Although the proposed project would result in a reduction in units, removal of commercial uses, and an increase in open space as compared to the FPASP approved land uses, the proposed project would still include development on the same site with a similar area of disturbance, resulting in similar impacts to archaeological resources or human remains as the approved FPASP. Known human cemeteries or burials are not located within the project site and have not been detected through subsurface excavation. However, the potential exists for archaeological resources, human cemeteries, or human burials to be discovered during construction earthwork and the potential exists for damage to or destruction of previously unknown resources during ground disturbing

activities. Without implementation of mitigation measures, impacts to archaeological resources or human remains would be ***potentially significant***.

Project-Specific Mitigation Measures(s)

Implementation of the following mitigation measures would reduce potentially significant impacts related to damaging or destroying archaeological resources or human remains during ground disturbing activities to a *less-than-significant* level.

Mitigation Measure 4.4-2(a): Conduct Construction Worker Awareness Training, Conduct On-Site Monitoring if Required, Stop Work if Cultural Resources are Discovered, Assess the Significance of the Find, and Perform Treatment or Avoidance as Required.

To reduce potential impacts to previously undiscovered cultural resources, the project applicant(s) shall complete the following:

- *Before the start of ground-disturbing activities, the project applicant(s) shall retain a qualified archaeologist to conduct training for construction supervisors. Construction supervisors shall inform the workers about the possibility of encountering buried cultural resources and inform the workers of the proper procedures should cultural resources be encountered. Proof of the contractor awareness training shall be submitted to the City's Community Development Department in the form of a copy of training materials and the completed training attendance roster.*
- *Should any cultural resources, such as structural features, bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended within 200 feet of the find and the City of Folsom and USACE shall be notified immediately. The City shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall evaluate the significance of the find by evaluating the resource for eligibility for listing on the CRHR and the NRHP. If the resource is eligible for listing on the CRHR or NRHP and would be subject to disturbance or destruction, the actions required by the FAPA and subsequent documentation shall be implemented. The City of Folsom Community Development Department and USACE shall be responsible for approval of recommended mitigation if it is determined to be feasible in light of the approved land uses, and shall implement the approved mitigation and seek written approval on mitigation documentation before resuming construction activities at the archaeological site.*

Mitigation Measure 4.4-2(b): Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures.

In the event that human remains are discovered, construction activities within 150 feet of the discovery shall be halted or diverted and the requirements for managing unanticipated discoveries in Mitigation Measure 4.4-2(a) shall be implemented. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641). If the Coroner determines the remains are Native American,

the Coroner shall notify the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a deed restriction with the county in which the property is located (AB 2641).

FPASP EIR/EIS Applicable Mitigation Measure(s)

None applicable.

Impact 4.4-3: Loss of unique paleontological resources. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

Paleontological resources have not been previously identified within the project site. However, the potential exists for paleontological resources to be discovered during construction earthwork and the potential exists for damage to or destruction of previously unknown resources during ground disturbing activities. Without implementation of mitigation measures, impacts to paleontological resources would be ***potentially significant***. Although the proposed project would result in a reduction in units, removal of commercial uses, and an increase in open space as compared to the FPASP approved land uses, the proposed project would still include development on the same site with a similar area of disturbance, resulting in similar impacts to paleontological resources as the approved FPASP.

Project-Specific Mitigation Measures(s)

Implementation of the following mitigation measure would reduce potentially significant impacts related to damaging or destroying paleontological resources during ground disturbing activities to a *less-than-significant* level.

Mitigation Measure 4.4-3: Conduct Construction Worker Awareness Training, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.

Before the start of any earthmoving activities, the project applicant(s) shall retain a qualified professional to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. The training shall be included in the archaeological contractor awareness training program. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the City of Folsom's Community Development Department. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey,

construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with the affected oversight agency(ies).

FPASP EIR/EIS Applicable Mitigation Measure(s)

None applicable.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Other proposed and pending projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the most recent planned land uses within the vicinity of the project area, including the FPASP.

Impact 4.4-4: Cumulative loss of cultural resources. Based on the analysis below, the project's incremental contribution to a cumulative impact is *less than significant*.

Prehistoric and historic cultural resources are unique and non-renewable resources. Development activities continue to damage and destroy both prehistoric and historic sites and features, in many cases, before the information inherent in the site could be reviewed, recorded, and interpreted. As noted above in Impacts 4.4-1, 4.4-2, and 4.4-3, the potential exists for unknown subsurface prehistoric and historic cultural resources to be unearthed during site excavation. The proposed project, along with other development in the City of Folsom, could damage or destroy cultural resources particular to the project area.

The project would contribute to a cumulative impact to two Historical Resources, portions of which are located on the project site – the Brooks Hotel site and Keefe- McDerby Mine Ditch. However, implementation of Mitigation Measure 4.4-1 would reduce the impact to a less-than-significant level, by requiring compliance with the procedures for mitigating significant impacts presented in the FAPA.

The potential exists for cultural and paleontological resources to be discovered during construction earthwork and the potential exists for damage to or destruction of previously unknown cultural and paleontological resources during ground disturbing activities. However, potentially significant impacts to unknown cultural and paleontological resources as related to the cumulative regional loss of cultural and paleontological resources would be less than significant with implementation of Mitigation Measures 4.4- 1, 4.4-2(a), 4.4-2(b), and 4.4-3. In addition, cumulative impacts to cultural and paleontological resources would be less than significant if current and future projects in the region comply with CEQA requirements for mitigation of impacts to cultural and paleontological resources [CCR Title 14, Section 15126.4 (b)]. As such, the proposed project's cumulative impact to cultural resources would be ***less than significant***. Although the proposed project would result in a reduction in units, removal of commercial uses, and an increase in open space as compared to the

FPASP approved land uses, the proposed project would still include development on the same site, resulting in similar cumulative impacts to cultural resources as the approved FPASP.

Project-Specific Mitigation Measure(s)

None required.

FPASP EIR/EIS Applicable Mitigation Measure(s)

None applicable.

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APPENDIX H

Environmental Noise Assessment

Russell Ranch

City of Folsom, California

Job # 2014-150

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INTRODUCTION

This report has been prepared to address the noise impacts due to and upon the proposed Russell Ranch residential project. The proposed project site is located in Sacramento County, within the City of Folsom Sphere of Influence.

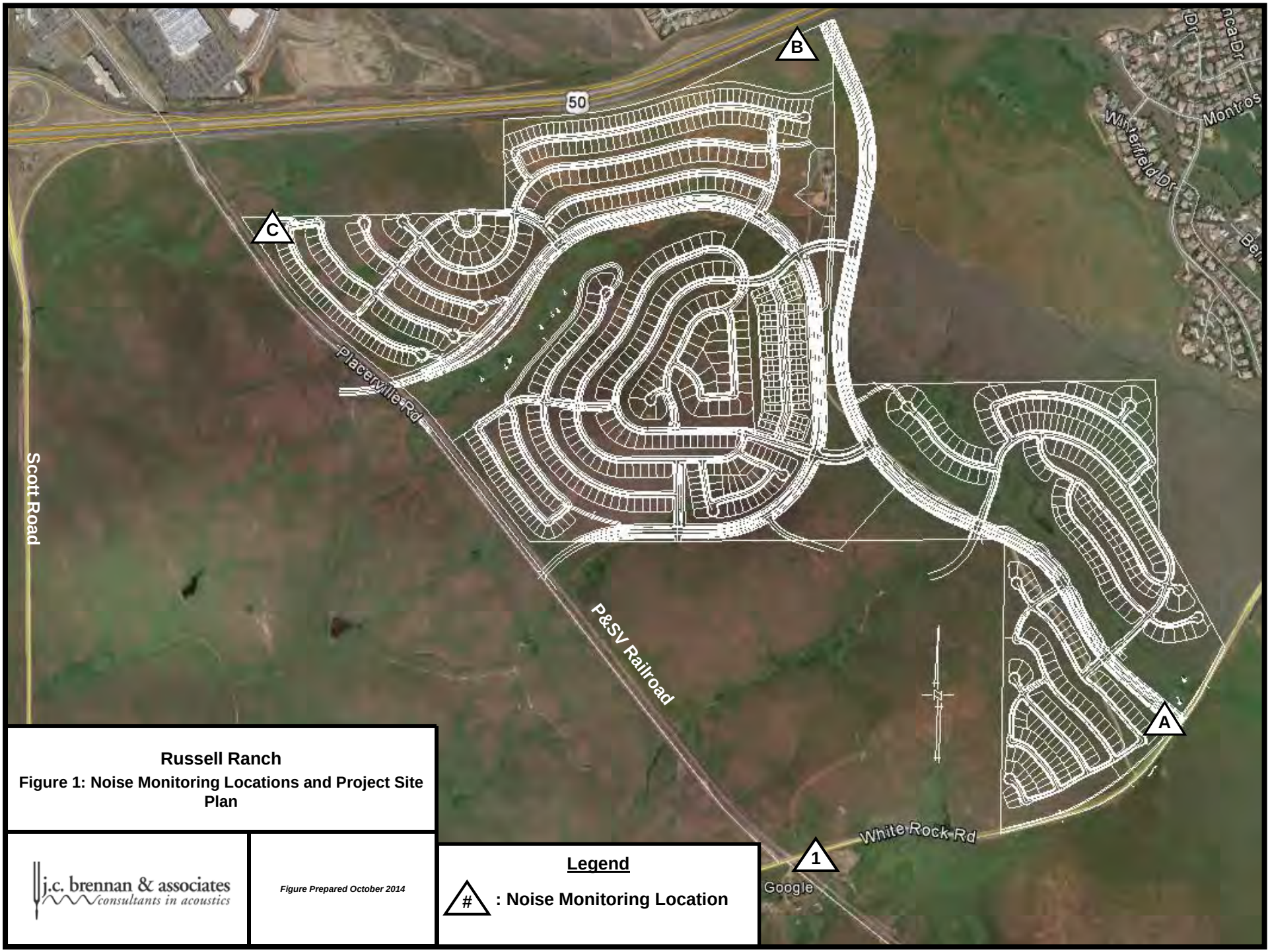
Russell Ranch, which is primarily used for cattle grazing purposes, is located in the eastern portion of the SPA. This property (which is the eastern portion of the Folsom South property) consists of three parcels: 072-0070-032, 072-0270-070, and 072-0272-071. There are five large radio/utility towers with associated buildings and chain-link fencing in addition to electrical power poles and lines located in the northern portion of the site.

A large portion of the SPA is currently being used as pastureland for cattle grazing. Surrounding land uses include facilities owned by Aerojet General Corporation and associated buffer lands to the west; U.S. 50 with urbanized development within the existing Folsom city limits to the north; residential development to the east; and agricultural and grazing land uses to the south.

Figure 1 shows the project site plan and location.

PROJECT DESCRIPTION

The proposed project is made up of three parcels, totaling the 419.9-acre development on the eastern hillside of the Specific Plan. The proposed project includes approximately 748 single family units, 175 multi-family units, parks, open space, and a school.



Russell Ranch

Figure 1: Noise Monitoring Locations and Project Site Plan

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Figure Prepared October 2014

Legend

 # : Noise Monitoring Location

ENVIRONMENTAL SETTING

Background Information on Noise and Vibration

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn}

represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

Table 1: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November, 2009.		

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING CONDITIONS

Existing Land Uses

Surrounding land uses include facilities owned by Aerojet General Corporation and associated buffer lands to the west; U.S. 50 with urbanized development within the existing Folsom city limits to the north; residential development to the east; and agricultural and grazing land uses to the south.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, continuous 24 hour noise level measurements were conducted on the project site on July 31st - August 3rd, 2014. The noise measurement locations are shown on **Figure 1**. The noise level measurement survey results are provided in **Table 2**. **Appendix B** provides the complete results of the continuous noise level measurement survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Table 2: Summary of Existing Background Noise Measurement Data

Site	Location	Date	L_{dn}	Average Measured Hourly Noise Levels, dB					
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
				L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous (24-hour) Noise Level Measurements									
A	Southeast project corner north of White Rock Road	Thursday 7/31/14	65	63	59	76	57	38	71
		Friday 8/1/14	65	63	58	79	57	39	72
		Saturday 8/2/14	62	61	55	75	54	36	73
		Sunday 8/3/14	62	61	53	74	53	34	73
B	Northeast project corner near U.S. 50	Thursday 7/31/14	73	70	69	80	66	62	77
		Friday 8/1/14	73	70	70	81	66	63	77
		Saturday 8/2/14	72	69	69	81	64	63	76
		Sunday 8/3/14	71	69	68	80	64	62	78
C	Northwest Project corner near Placerville Road	Thursday 7/31/14	61	59	53	72	53	48	68
		Friday 8/1/14	62	59	56	71	55	49	70
		Saturday 8/2/14	59	57	51	69	51	47	68
		Sunday 8/3/14	58	57	51	71	50	45	69
Source: j.c. brennan & associates, Inc., 2014.									

Existing Roadway Noise Levels

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was added to the noise prediction model. In some locations sensitive receptors may be located at distances which vary from the

assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in **Table 3** are generally considered to be conservative estimates of noise exposure along the project-area roadways. It should be noted that these contour distances include a -5 dB offset for roadway segments that predominately include noise barriers at residential areas.

Table 3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in **Appendix C.**

Table 3: Existing Traffic Noise Levels and Distances to Contours

Roadway	Segment	Exterior Traffic Noise Level, dB L_{dn}	Distance in feet to Traffic Noise Contours, L_{dn}		
			70 dB	65 dB	60 dB
Broadstone Pkwy.	Iron Point to E. Bidwell St.	62.6	29	62	134
Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	58.0	19	41	88
Iron Point Rd.	West of Broadstone Pkwy.	65.9	48	104	223
Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	63.6	37	81	174
Iron Point Rd.	E. Bidwell St. to Serpa Way	57.8	15	33	71
Iron Point Rd.	Serpa Way to Empire Ranch Rd.	56.7	13	28	60
Iron Point Rd.	East of Empire Ranch Rd.	51.0	5	11	23
White Rock Rd.	Scott Rd. to Placerville Rd.	54.6	38	81	175
White Rock Rd.	Placerville Rd. to Latrobe Rd.	61.0	19	41	88
White Rock Rd.	East of Latrobe Rd.	68.7	41	88	189
Scott Rd.	North of White Rock Rd.	64.6	44	94	203
Empire Ranch Rd.	North of Broadstone Pkwy.	56.1	12	25	55
Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	55.1	10	22	47
Empire Ranch Rd.	South of Iron Point Rd.	N/A	N/A	N/A	N/A
El Dorado Hills Blvd.	North of U.S. 50	66.9	62	133	287
Latrobe Rd.	U.S. 50 to White Rock Rd.	68.8	84	180	389
Latrobe Rd.	South of White Rock Rd.	63.8	35	75	162

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2014.

Railroad Noise Levels

Railroad activity in the project vicinity occurs on the Placerville & Sacramento Valley Railroad (P&SVRR) line which is located approximately 75 feet, or further, from the project site. The line has not been used for commercial operations sine the late 1980's. However, the line is used for weekend excursion trains and other special events. It should be noted that the excursion train varies during different seasons. However, a typical operating schedule is approximately 10 am to 3 or 4 pm on Saturdays and Sundays with trains running every hour or half-hour. Based upon this schedule, train operations would range between 5-13 excursions per day.

In order to quantify noise exposure from existing train operations, a short-term noise level measurement survey was conducted adjacent the railroad line. The noise survey was conducted on Saturday, August 2, 2014 from approximately 10:00-11:00 a.m. The purpose of the noise level measurements was to determine the typical Sound Exposure Level (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns, and other factors which may affect noise generation.

Locations of noise monitoring sites are shown on **Figure 1**. **Table 4** shows a summary of the excursion train noise measurement results.

Table 4 : Railroad Noise Measurement Results

Measurement Location	Railroad Track	Grade Crossing/ Warning Horn	Train Events Per 24-hr period	Distance to CL	SEL
1	PSVRR	Yes	5-13	75'	95 dB
Source: j.c. brennan & associates, Inc - 2014					

Noise measurement equipment consisted of a Larson Davis Laboratories (LDL) Model 824 precision integrating sound level meter equipped with an LDL ½" microphone. The measurement system was calibrated using an LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

To determine the distances to the day/night average (L_{dn}) railroad contours, it is necessary to calculate the L_{dn} for typical train operations. This was done using the SEL values and above-described number and an even day/night distribution of daily freight train operations. The L_{dn} may be calculated as follows:

$$L_{dn} = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus 10 times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day.

Based upon the above-described noise level data, number of operations and methods of calculation, the L_{dn} value for railroad line operations have been calculated, and the distances to the L_{dn} noise level contours are shown in **Table 5**. **Appendix E** shows the railroad noise contour calculations and a photo of the noise monitoring location.

Table 5: Approximate Distances to the Railroad Noise Contours

Exterior Railroad Noise Level at Measurement Site, L_{dn}	Distance to L_{dn} Contour		
	60 dB	65 dB	70 dB
PSVRR Line			
57 dB @ 75 feet – With Warning Horns	45 feet	21 feet	10 feet
Source: j.c. brennan & associates, Inc. 2014			

REGULATORY CONTEXT

Federal

There are no federal regulations related to noise that apply to the Proposed Project.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance criteria section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

City of Folsom General Plan

The City of Folsom General Plan Noise Element provides the following goals and policies relative to noise.

GOAL 30: To protect the citizens of Folsom from the harmful effects of exposure to excessive noise and protect the economic base of Folsom by preventing the encroachment of incompatible land uses within areas protected by existing noise producing uses.

- **Policy 30.2:** Develop and implement effective strategies to abate and avoid excessive noise exposures in the City by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.

- **Policy 30.3:** Protect areas within the City where the present noise environment is within acceptable limits.

- **Policy 30.4:** Areas within the City of Folsom shall be designated as noise impacted if exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn} /CNEL or the performance standards of Table 26-3 of the Noise Element (included here as **Table 6**).

Table 6: Hourly Noise Level Performance Standards for Stationary Noise Sources

Cumulative Number of Minutes In any One-Hour Time Period (L_n)	Acceptable Noise Level, dBA	
	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
30 (L_{50})	50	45
15 (L_{25})	55	50
5 (L_8)	60	55
1 (L_2)	65	60
0 (L_{max})	70	65
Note: Ln means the percentage of time the noise level is exceeded during an hour. L_{50} means the level exceeded 50% of the hour, L_{25} is the level exceeded 25% of the hour, etc.		

Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Noise from single occurrences such as the passage of locomotives, heavy trucks, or aircraft should also be evaluated in terms of single event noise levels. The maximum noise level created by such an event may have the potential to result in activity interference even though the cumulative noise exposure in terms of L_{dn}/CNEL is within acceptable limits. The potential for sleep disturbance is usually of primary concern, and should be evaluated on a case-by-case basis.

- **Policy 30.5:** New development of residential or other noise sensitive land uses will not be permitted in noise impacted areas unless effective mitigation

measures are incorporated into the project design to reduce noise levels to:

1. For noise due to traffic on public roadways, railroad operations, and aircraft: 60 dB L_{dn} /CNEL or less. Where it is not possible to reduce exterior noise due to these sources to 60 dB L_{dn} /CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dB L_{dn} /CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB L_{dn} /CNEL with the windows and doors closed.

2. For non-transportation related noise sources: achieve compliance with the performance standards contained within Table 26-3 (included here as **Table 6**).

3. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a statement of overriding considerations for the project must be provided.

- **Policy 30.6:** When industrial, commercial land uses or other uses including non-transportation related noise sources are proposed which would affect areas containing noise sensitive land uses, noise levels generated by the proposed use shall not exceed the performance standards contained within Table 26-3 (included here as **Table 6**).

- **Policy 30.7:** Prior to the approval of proposed development of residential or other noise sensitive land uses in a noise impacted area, an acoustical analysis may be required. The acoustical analysis shall:
  1. Be the responsibility of the applicant.
  2. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
  3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
  4. Include estimated noise levels in terms of L_{dn} /CNEL and/or the standards of Table 26-3 (included here as **Table 6**) for existing and projected future (20 years hence) conditions, with a comparison made to the adopted policies of the noise element.
  5. Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
  6. Include estimates of noise exposure after the prescribed mitigation measures have been implemented.

- **Policy 30.9:** Noise level criteria applied to land uses other than residential or other noise sensitive uses shall be consistent with the standards in Table 26-3 (included here as **Table 6**).

- **Policy 30.10:** The City of Folsom shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

- **Policy 30.15:** If noise barriers are required to achieve the noise level standards contained within this Element, the following construction practices are recommended:

    1. Noise barriers exceeding six feet in height relative to the roadway should incorporate an earth berm to raise the height of the base so that the total height of the vertical planar portion of barrier is less than six feet.

    2. The total height of the noise barrier above roadway elevation should normally be limited to 12 feet.

    3. The noise barriers should be designed so that their appearance is consistent with other noise barriers in the project vicinity.

City of Folsom Municipal Code, Noise Control

The noise standards contained in the City of Folsom Municipal Code are provided below.

Exterior Noise Standards (Section 8.42.040)

A. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in Table 8.42.040 (included here as **Table 7**).

Table 7: Exterior Noise Level Standards

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	Daytime (dB) (7 a.m.–10 p.m.)	Nighttime (dB) (10 p.m.–7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Note: dB = A-weighted decibels Source: City of Folsom Code, Noise Control 1993			

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as

specified above.

Noise Source Exemptions (Section 8.42.060)

Section 8.42.060 of the City of Folsom Municipal Code establishes the following activities that are considered exempt from the associated exterior noise provisions:

A. Activities conducted in unlighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to dusk, and in lighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to 11 p.m., including but not limited to school athletic and school entertainment events;

B. Any mechanical device, apparatus, or equipment used, related to or connected with emergency activities or emergency work;

C. Noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday;

D. Noise sources associated with the maintenance of residential property provided such activities take place between the hours of seven a.m. to dusk on any day except Saturday or Sunday, between the hours of 8 a.m. to dusk on Saturday or Sunday;

E. Noise sources associated with agricultural activities on agricultural property;

F. *(Section Expired)*

G. Noise sources associated with the collection of waste or garbage from property devoted to commercial or industrial uses;

H. Any activity to the extent regulation thereof has been preempted by state or Federal law.

Air Conditioning and Refrigeration (Section 8.42.070)

Notwithstanding the provisions of Section 8.42.040 or 8.42.050, where the intruding noise source when measured as provided in Section 8.42.030 is an air-conditioning or refrigeration system or associated equipment installed prior to the effective date of this chapter, the exterior noise level shall not exceed 55 dB *(expired),* except where such equipment is otherwise exempt from the provisions of this chapter. The exterior noise level shall not exceed 50 dB for such equipment installed or in use after 1 year after the effective date of this chapter.

Noise Standards

Substantial Increase Criteria

The noise standards applicable to the project include the relevant portions of the City of Folsom General Plan, the City of Folsom Noise Ordinance described in the Regulatory Framework section above, and the following common practice guidelines.

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to measurably severe noise levels. In practice, a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following[1]:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

The City of Folsom, like many jurisdictions, does not have an adopted policy regarding significant increases in ambient noise. A common practice in many jurisdictions is to use a 3-5 dB increase as a threshold of significance. However, a limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. **Table 8** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been widely accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

Table 8: Significance of Changes in Noise Exposure

Ambient Noise Level Without Project, L_{dn}	*Increase Required for Significant Impact*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON)

Based on the **Table 8** data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise level is less than 60 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the criteria is that,

[1] California Department of Transportation. *Technical Noise Supplement to the Traffic Analysis Protocol.* September 2013.

as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Non-Transportation Noise Criteria

Based upon the project description and proposed hours of operation, non-transportation noise levels generated by the project would be subject to the City's General Plan Noise Element and Noise Ordinance daytime standards of 50 dB L_{50} and 70 dB L_{max} exterior noise level standards and nighttime 45 dB L_{50} and 65 dB L_{max}, as shown in **Table 6** and **Table 7**. For noise consisting primarily of speech or music or recurring sounds, these standards are reduced, i.e., made more stringent, by 5 dB.

Transportation Noise Criteria

The City of Folsom General Plan Noise Element establishes 60 dB L_{dn} as the exterior noise level limit for residential receptors exposed to transportation noise sources. Therefore, increased traffic associated with the proposed project should not cause exterior noise levels to exceed 60 dB L_{dn} at existing residential receptors. Additionally, new sensitive receptors shall not be exposed to exterior noise levels exceeding 60 dB L_{dn}, or interior noise levels exceeding 45 dB L_{dn}. An exterior noise level of up 65 dB L_{dn} may be allowed if practical mitigation measures cannot be used to achieve 60 dB L_{dn}. However, in no case will interior noise levels exceeding 45 dB L_{dn} be allowed.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Folsom does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 9** indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Table 9: Effects of Vibration on People and Buildings

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/sec.	in./sec.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.
Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601 February 20, 2002.			

IMPACTS AND MITIGATION MEASURES

Method of Analysis

Traffic Noise Impact Assessment Methodology

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included ADT traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Construction Noise and Vibration Impact Methodology

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. Construction activities are discussed relative to the applicable City of Folsom noise policies. Potential impacts and mitigation measures are discussed.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guideline, and the City's General Plan and Noise Ordinance, the project will have a significant impact related to noise if it will result in:

A. Exposure of persons to, or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Specifically, 60 dB L_{dn} (up to 65 dB L_{dn} if no practical mitigation measures can achieve 60 dB L_{dn}) for transportation noise sources at exterior residential areas and 45 dB L_{dn} at interior residential areas. For non-transportation noise sources the standards of Table 26-3 of the City of Folsom General Plan and Table 8.42.040 of the City's Municipal Code Noise Ordinance;

B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Specifically, a limit of 0.1 in/sec p.p.v., as discussed above;

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, as defined by **Table 8** above;

D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity, as defined by **Table 8** above, beyond levels permissible under the City's General Plan and Noise Ordinance;

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or

F. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The proposed project is not located within two miles of a public or private airport or airstrip. Therefore, aircraft noise is not discussed further in this analysis.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1 Construction Noise at Sensitive Receptors

Construction of the Proposed Project would temporarily increase noise levels during construction. This would be a ***potentially significant*** impact.

During the construction of the project including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in **Table 10**, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A substantial project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Table 10 : Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.	

The nearest existing single-family residential receptors are located east of the project site, off Stonebriar Drive. These receptors are located approximately 500 feet from the closest project boundary. Additional sensitive receptors are located north of the project site, on Horseshoe Glen Circle. However, these receptors are shielded by a sound wall required to mitigate traffic noise from Highway 50. It is expected that during project constriction, Highway 50 will remain the dominate noise source at these receptors. Therefore, this analysis will focus on the receptors located east of the project site which are not shielded by existing noise barriers.

Construction activities associated with the proposed project will typically occur at distances of approximately 500 feet or more from the nearest noise-sensitive receptors. At a distance of 500 feet, construction related noise levels are expected to be 56-70 dB L_{max}, or less.

The City of Folsom Municipal Code exempts construction-generated noise that occurs between the hours of 7 a.m. to 6 p.m. Monday through Friday, and 8 a.m. and 5 p.m. Saturday and Sunday from the City's exterior noise standards. These exemptions are typical of City and County Noise Ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, etc.).

Construction activities would be temporary in nature, will occur during normal daytime working hours listed above, and will comply with the requirements of the City of Folsom Noise Ordinance. Therefore, construction noise will be a less than significant impact.

Impact 2 Transportation Noise at Existing Sensitive Receptors

Traffic generated by the Proposed Project could generate traffic noise increases exceeding the FICON substantial increase criteria as outlined in the Thresholds of Significance criteria above. This would be a ***less-than-significant*** impact.

Table 11 shows the predicted traffic noise level increases on the local roadway network for existing and existing plus project conditions. **Table 12** shows the predicted traffic noise level increases on the local roadway network for cumulative and cumulative plus project conditions.

Appendix C provides the complete inputs and results of the FHWA traffic noise modeling.

Table 11: Existing and Existing + Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors					
		Existing	Existing + Project	Change	Distance to Existing + Project Traffic Noise Contours (feet)[1]		
					70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Broadstone Pkwy.	Iron Point to E. Bidwell St.	62.6	62.8	0.2	30	64	137
Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	58.0	58.1	0.1	19	42	90
Iron Point Rd.	West of Broadstone Pkwy.	65.9	66.0	0.1	49	106	227
Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	63.6	63.8	0.2	39	84	180
Iron Point Rd.	E. Bidwell St. to Serpa Way	57.8	58.0	0.2	16	34	74
Iron Point Rd.	Serpa Way to Empire Ranch Rd.	56.7	57.0	0.3	14	29	63
Iron Point Rd.	East of Empire Ranch Rd.	51.0	51.4	0.4	5	11	24
White Rock Rd.	Scott Rd. to Placerville Rd.	54.6	54.7	0.1	38	83	179
White Rock Rd.	Placerville Rd. to Latrobe Rd.	61.0	61.4	0.4	20	43	93
White Rock Rd.	East of Latrobe Rd.	68.7	68.9	0.2	42	90	195
Scott Rd.	North of White Rock Rd.	64.6	64.7	0.1	44	95	205
Empire Ranch Rd.	North of Broadstone Pkwy.	56.1	56.4	0.3	12	27	57
Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	55.1	55.3	0.2	10	23	48
Empire Ranch Rd.	South of Iron Point Rd.	N/A	N/A	N/A	N/A	N/A	N/A
El Dorado Hills Blvd.	North of U.S. 50	66.9	66.9	0.0	62	134	289
Latrobe Rd.	U.S. 50 to White Rock Rd.	68.8	68.9	0.1	85	182	393
Latrobe Rd.	South of White Rock Rd.	63.8	64.0	0.2	36	77	165

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: j.c. brennan & associates, Inc. 2014.

Table 12: Cumulative and Cumulative + Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors					
		Cumulative	Cumulative + Project	Change	Distance to Cumulative + Project Traffic Noise Contours (feet)[1]		
					70 dB L_{dn}	65 dB L_{dn}	60 dB L_{dn}
Broadstone Pkwy.	Iron Point to E. Bidwell St.	63.8	63.6	-0.2	34	73	156
Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	59.8	59.8	0.0	25	54	116
Iron Point Rd.	West of Broadstone Pkwy.	68.3	68.3	0.0	69	149	320
Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	65.8	65.8	0.0	52	113	244
Iron Point Rd.	E. Bidwell St. to Serpa Way	62.1	62.1	0.0	30	64	138
Iron Point Rd.	Serpa Way to Empire Ranch Rd.	61.7	61.7	0.0	28	60	130
Iron Point Rd.	East of Empire Ranch Rd.	61.6	61.5	-0.1	24	53	113
White Rock Rd.	Scott Rd. to Placerville Rd.	58.8	59.0	0.2	74	159	343
White Rock Rd.	Placerville Rd. to Latrobe Rd.	65.4	65.6	0.2	38	82	177
White Rock Rd.	East of Latrobe Rd.	68.9	68.9	0.0	42	91	196
Scott Rd.	North of White Rock Rd.	66.0	67.1	1.1	64	139	299
Empire Ranch Rd.	North of Broadstone Pkwy.	61.0	61.0	0.0	25	54	116
Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	61.0	61.0	0.0	25	55	117
Empire Ranch Rd.	South of Iron Point Rd.	62.5	62.6	0.1	32	69	148
El Dorado Hills Blvd.	North of U.S. 50	68.3	68.3	0.0	76	165	355
Latrobe Rd.	U.S. 50 to White Rock Rd.	69.6	69.6	0.0	94	202	435
Latrobe Rd.	South of White Rock Rd.	65.4	65.4	0.0	44	95	206

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: j.c. brennan & associates, Inc. 2014.

It should be noted that Highway 50 is not included in Tables 11 or 12 because the project's contribution to traffic would not substantially increase noise levels from Highway 50. For example, the existing daily volume for Highway 50 near the project site is approximately 100,000 vehicles per day. The project would have to add 25,000 vehicles daily in order to cause an increase in noise levels of even 1 dB which is not audible to the human ear. The proposed project would not add 25,000 vehicles per day to Highway 50. Therefore, no additional analysis of potential Highway 50 traffic noise increases would be required.

Some noise sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Folsom 60 dB L_{dn} exterior noise level standard for residential uses, as shown in **Table 11** and **Table 12**. As shown by **Table 11** and **Table 12**, these receptors will continue to experience elevated exterior noise levels with implementation of the proposed project. The proposed project's contribution to traffic noise increases is predicted to be 1.1 dBA L_{dn}, or less. This is less than the FICON substantial increase criteria of 1.5-5 dB, as outlined in **Table 8**. Therefore, the increase of 1.1 dB L_{dn} is considered less than significant relative to the substantial increase threshold.

The proposed project would not cause increased noise levels exceeding the City of Folsom 60 dB L_{dn} exterior noise level standard at existing noise-sensitive residential receptors. Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (a). Additionally, the noise level increases associated with the proposed project do not exceed the FICON substantial increase criteria outlined above. Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (b).

This impact is considered **less-than-significant** relative to the project's significance criteria.

Mitigation for Impact 2: **None required**

Impact 3: Transportation Noise at New Sensitive Receptors

The proposed project could expose new noise-sensitive uses to transportation noise levels that exceed the City of Folsom exterior and interior noise level standards. This is considered to be a ***potentially significant*** *impact.*

Exterior Traffic Noise Level Impacts:

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the project. **Table 13** shows the predicted traffic noise levels at the proposed residential uses adjacent to the major project-area arterial roadways. **Table 13** also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

Appendix D provides the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers are relative to building pad elevations.

PSVRR Railroad Noise Levels

Based upon the **Table 5** data, the PSVRR line was measured to generate an exterior noise levels of 57 dBA L_{dn} at a distance of 75 feet. Based upon this measurements, railroad noise levels at the project site were predicted, as shown in **Table 13**. Railroad noise level are not predicted to exceed the City of Folsom 60 dB L_{dn} exterior noise level standards, as shown in **Table 13**. **Appendix D** provides the complete inputs and results of the FHWA traffic noise modeling for on-site receptors.

Table 13: Transportation Noise Levels at Proposed Residential Uses

Noise Source	Receptor Description	Approximate Residential Setback, feet[1]	ADT	Predicted Noise Levels, dBA L_{dn}[2]			
Traffic Noise				No Wall	6' Wall	7' Wall	8' Wall
Highway 50	Lots adjacent to US 50	200	115,830	72	See Analysis Below		
Empire Ranch Road	Lots 88-89	390	27,100	58	--	--	--
Empire Ranch Road	Townhomes	285	25,000	60	--	--	--
Empire Ranch Road	Lots 164-184, 261-265	115	24,200	66	60	59	58
Empire Ranch Road	Lots 1-13, 144-159	300	24,200	59	--	--	--
Eaton Valley Parkway	West of "C" Drive	120	4,600	58	--	--	--
Eaton Valley Parkway	"C" Drive to "D" Drive	105	800	51	--	--	--
Eaton Valley Parkway	"D" Drive to Placerville Road	105	700	51	--	--	--
White Rock Road	Lot 184	120	30,600	66	61	60	59
White Rock Road	Lots 185, 193-194, 213-214, 243-244	210	30,600	63	57	57	56
Placerville Road	Lots 4-24, 216-246	175	12,400	60	--	--	--
Railroad Noise				No Wall	6' Wall	7' Wall	8' Wall
P&SVRR	Lots 4-24, 216-246	100	N/A	55	--	--	--

[1] Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
[2] Barrier heights are relative to pad elevations.
-- Meets the City of Folsom exterior noise standard without mitigation. Standard does not apply to second floor facades.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2014.

The **Table 13** data indicate that noise barriers 6 to 7 feet in height would be sufficient to reduce exterior noise levels to 60 dB L_{dn} or less at sensitive receptors located along existing and future arterial roadways, not including US-50.

Due to the high noise exposure predicted along US-50, a detailed analysis of noise control measures was conducted using the CadnaA (Computer Aided Noise Abatement) sound prediction model.[2] The CadnaA model state-of-the-art noise prediction model, is able to predict overall noise levels for multiple noise sources, while also accounting for topography, building shielding, roadway grade, and typical atmospheric conditions according to International Standards Organization (ISO) 9613 -"Attenuation of sound during propagation outdoors." Inputs to the CadnaA model included proposed grading lines, ground type, US-50 centerline and grade, proposed building footprints, and receptor locations. The results of this analysis are shown on **Figure 2** and **Figure 3**. **Figure 2** shows the recommended project noise barrier design along US-50. **Figure 3** shows the predicted US-50 noise exposure with and without noise reduction measures. **Figure 4** shows recommended noise barrier locations to achieve 60 dB L_{dn} at all proposed sensitive receptor locations.

[2] DataKustik, CadnaA State of the Art Noise Prediction Software, Greifenberg Germany, 2009

Unmitigated Highway 50 Traffic Noise Contours

US 50

65 dB L_{dn}

65 dB L_{dn}

60 dB L_{dn}

N

Mitigated Highway 50 Traffic Noise Contours

US 50

65 dB L_{dn}

65 dB L_{dn}

60 dB L_{dn}

N

Russell Ranch

Figure 2: Highway 50 Noise Contours

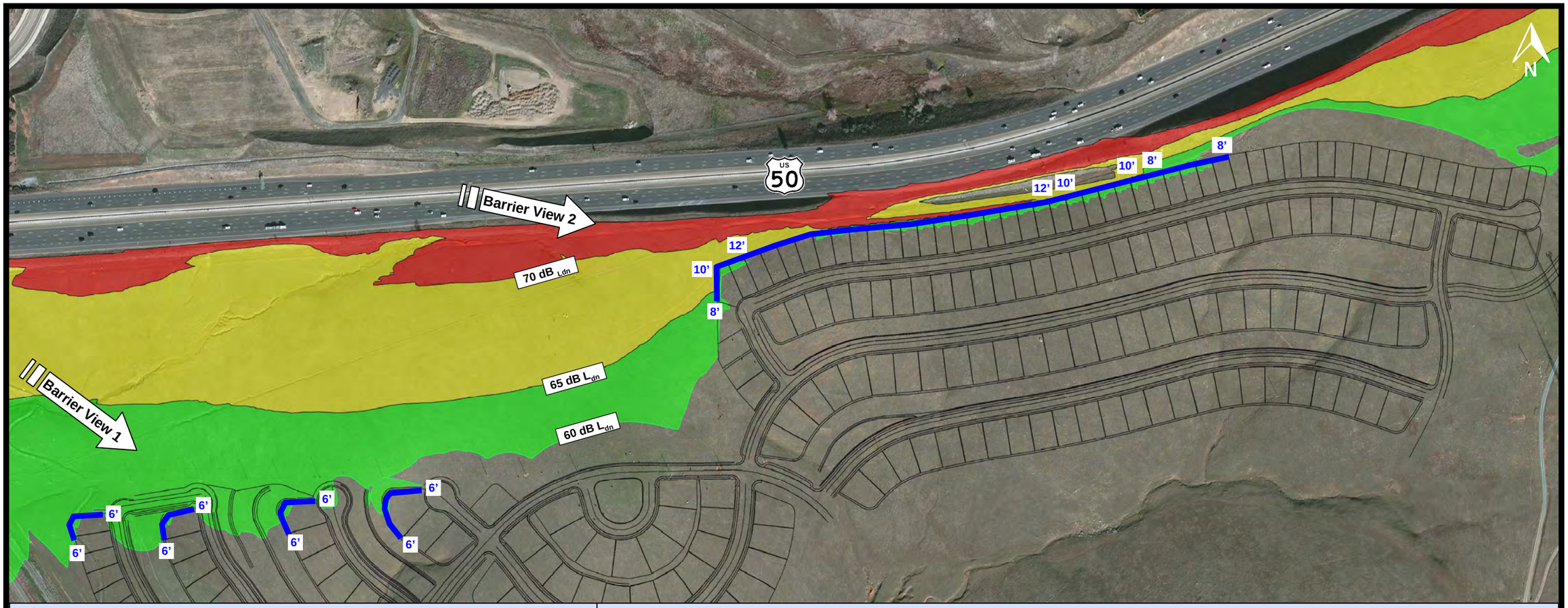
(Pre and Post Mitigation Traffic Noise Contours)

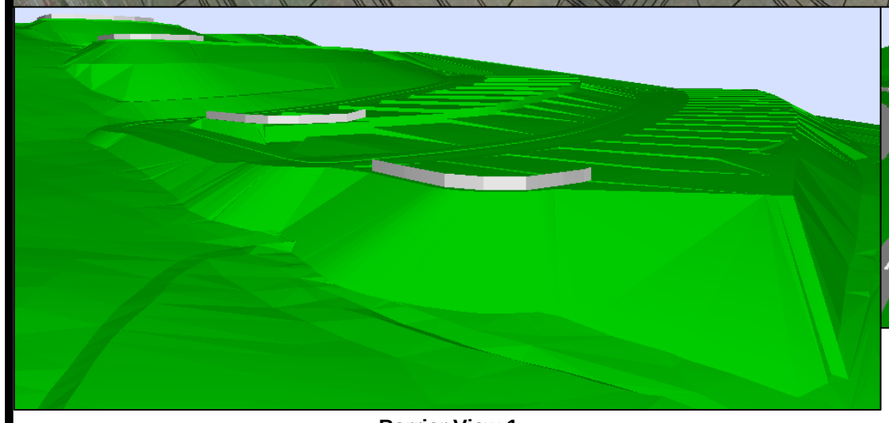
Legend

: Recommended Noise Barrier Location

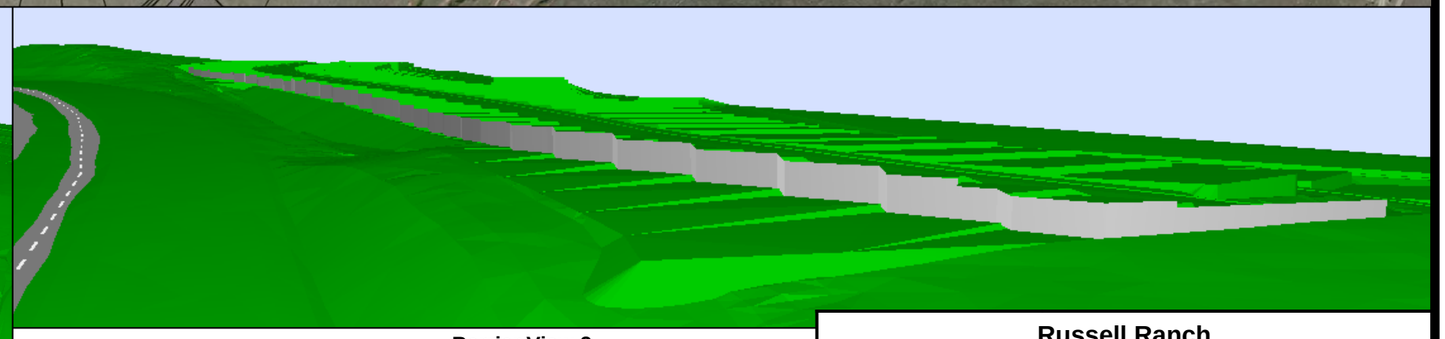
j.c. brennan & associates
consultants in acoustics

Figure Prepared
October 2014





Barrier View 1



Barrier View 2

Legend

: Recommended Noise Barrier Location and Height (Relative to Building Pad)

Russell Ranch

Figure 3: Highway 50 Noise Barrier Design to Achieve 60 dB L_{dn}

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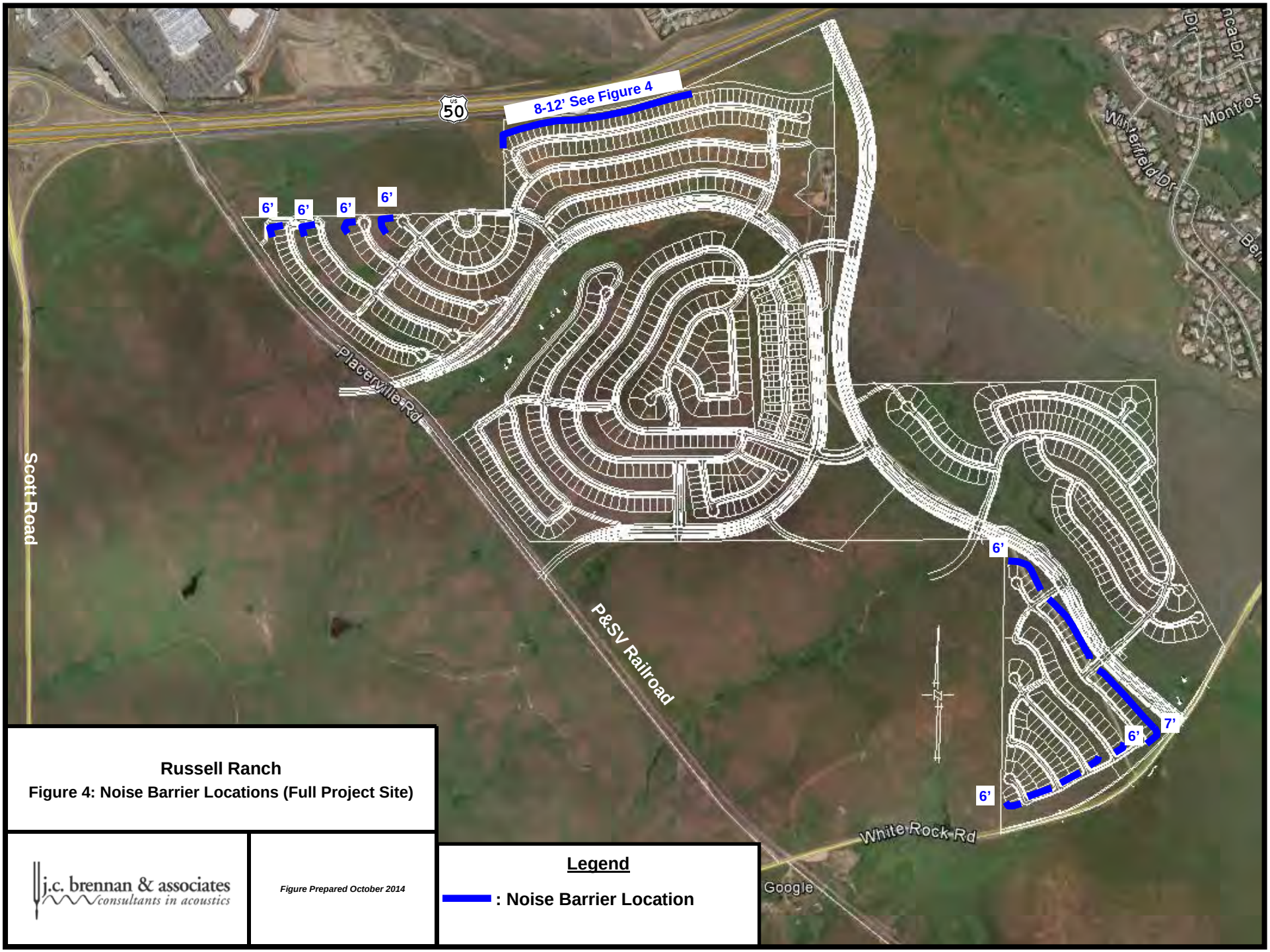
Figure Prepared October 2014



Russell Ranch

Figure 4: Noise Barrier Locations (Full Project Site)

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Figure Prepared October 2014

Legend

: Noise Barrier Location

Interior Noise Impacts:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Folsom 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2-3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior traffic noise levels ranging between 51-66 dB L_{dn} along project-area arterial roadways and up to 72 dB L_{dn} along US-50. Therefore, second floor facades are predicted to be exposed to exterior traffic noise levels of up to 54-69 dB L_{dn} along project-area arterials and 75 dB L_{dn} along US-50. Based upon a 25 dB exterior-to-interior noise level reduction, second floor interior traffic noise levels are predicted to range between 29-44 dB L_{dn} along project arterials and 50 dB L_{dn} along US-50. Therefore, no interior noise control measures would be required for receptors constructed along arterial roadways. However, interior noise control measures would be required for the first row of residential uses adjacent to US-50.

At this time no building plans are available for the proposed project. Therefore, specific interior noise control measures cannot be recommended at this time. However, it is likely that windows having a sound transmission class (STC) rating of 35-38 would be required for second floor facades in addition to the use of resilient channels (RC) for walls parallel to US-50. Such measures should be reviewed when building plans are available.

Mitigation for Impact 3:

MM 3a: Sound walls and/or landscaped berms shall be constructed along US-50, White Rock Road, and Empire Ranch Road. **Figure 2** and **Figure 4** show the required wall heights and recommended noise barrier placement. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. Wall heights are relative to building pad elevations. Abrupt transitions exceeding two feet in height should be avoided.

MM 3b: A detailed analysis of interior noise levels shall be conducted when building plans are available for the residential uses with direct exposure to US-50 traffic noise. The analysis shall detail noise control measures that are required to achieve compliance with the City of Folsom 45 dB L_{dn} interior noise level standard. Such analysis shall be conducted by a qualified acoustical consultant recognized by the City of Folsom.

MM 3c: Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Significance after Mitigation: **Less-than-significant**.

Impact 4: Non-Transportation Noise at Sensitive Receptors

The proposed project could expose new noise-sensitive uses to non-transportation noise levels that exceed the City of Folsom exterior noise level standards. This is considered to be a ***less than significant*** *impact.*

The proposed project includes lots for future school and park uses. Future uses development on these parcels could cause exterior noise levels to exceed the City's non-transportation noise level standards at new residential receptors located near to these parcels.

Children playing at neighborhood parks, outdoor recreational fields (softball, soccer, basketball, tennis), and school playgrounds are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB $L_{eq/50}$ and 70-75 dB L_{max}. It is expected that park and school activities would occur during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Folsom exterior noise level standards of 50 dB L_{50} and 70 dB L_{max} at the nearest residential uses.

Based upon the reference noise level data discussed above, the 50 dB L_{50} noise contour would be located approximately 160 feet from the center of playgrounds or recreational fields. The 70 dB L_{max} noise contour would extend approximately 90 feet from the center of playground or recreational fields.

The park and school facilities would be separated by local roadways. Based upon this configuration, the center of recreational fields would be located 180 feet or more from the nearest residential receptors. Therefore, park and playground-related noise levels would be less than 50 dB L_{50} and 70 dB L_{max} and no additional mitigation would be required. Therefore, this impact is considered **less than significant**.

Mitigation for Impact 4: **None required**

Impact 5: Construction Vibration at Sensitive Receptors

*The proposed project has the potential to expose sensitive receptors to substantial vibration associated with construction activities. This would be a **less-than-significant** impact.*

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. **Table 14** shows the typical vibration levels produced by construction equipment.

Sensitive receptors could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest receptors are located approximately 500 feet or further from any areas of the project site that might require grading or paving. At this distance construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Table 14: Vibration Levels for Varying Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

The **Table 14** data indicate that construction vibration levels anticipated for the project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors which are located 500 feet from the project site. Implementation of the proposed project would have a **less than significant** impact.

Mitigation for Impact 5: **None required**

Impact 6: Railroad Vibration at Sensitive Receptors

The proposed project has the potential to expose sensitive receptors to substantial vibration associated with railroad operations.. This would be a ***less-than-significant*** *impact.*

Based upon Table 3.11-7, vibration levels of 0.1 inches per second in Peak Particle Velocity (PPV) is the threshold where people become annoyed, but is below the threshold of any structural damage.

To determine the existing vibration levels on the project site due to train passbys, j.c. brennan & associates, Inc. used vibration measurements conducted for the California Northern Railroad Company (CFNR) in Davis, California. Activity on the CFNR includes slow-moving freight trains. It is expected that the excursion train activity which also includes slow-moving trains would be less-intensive then the CFNR operations. Therefore, use of the CFNR vibration measurements is considered conservative.

The measurements were conducted using a Larson Davis HVM100 vibration meter, equipped with a PCB Shear Model 353B51 accelerometer. The results of the measurements indicated that the PPV vibration levels on the ground ranged between 0.0365 and 0.065 (inches/second) at a distance of 50 feet. The proposed residential uses are located approximately 100 feet from the centerline of the CFNR tracks, therefore, the new uses are not expected to be exposed to vibration which would be in excess of the 0.1 inches per second PPV threshold of annoyance. Therefore, this impact is **less than significant**.

Cumulative Impacts and Mitigation Measures

Impact 7 Cumulative Noise Levels

The cumulative context for noise impacts associated with the Proposed Project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total noise impact of the Proposed Project would be fairly small and would not be a substantial increase to the existing future noise environment. Thus, the Proposed Project would result in a ***less-than-significant cumulative impact.***

Traffic

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the Proposed Project and on-site activities resulting from operation of the proposed project. **Table 12** above shows cumulative traffic noise levels with and without the Proposed Project. As discussed, the project would not result in significant increases in traffic noise levels at existing sensitive receptors. New residential uses will be constructed to comply with the applicable City of Folsom exterior and interior noise level standards.

Non-Traffic Noise

Non-traffic noise includes increased pedestrian activity from the additional residential uses of the site and the development of park and school uses. The number of people walking and interacting on surrounding roads would increase. This could raise noise levels on these streets slightly, as more people utilize amenities in the area. This is not expected to substantially influence interior or exterior noise levels at nearby existing receptors. Consequently, this would not add to any cumulative noise levels and would result in a less than cumulatively considerable contribution to cumulative stationary noise levels.

Cumulative Conclusion

The traffic noise from the Proposed Project is not expected to produce noise levels that would exceed City standards. Increased project related traffic would increase traffic noise levels by less than the FICON 1.5-5 dB increase criteria outlined in the Thresholds of Significance section, at existing sensitive receptors. Consequently, the total noise impact of the Proposed Project would not be a substantial increase to the future noise environment. The Proposed Project would result in a **less-than-significant cumulative impact**.

Mitigation for Impact 7: **None required**

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the “Maximum” level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site A
Thursday, July 31, 2014

Hour	Leq	Lmax	L50	L90
0:00	51	70	34	31
1:00	47	69	31	30
2:00	38	63	34	32
3:00	49	73	34	30
4:00	53	73	32	30
5:00	59	73	44	34
6:00	63	74	59	45
7:00	66	77	64	53
8:00	65	80	62	48
9:00	62	79	59	46
10:00	62	77	58	43
11:00	61	74	58	43
12:00	63	76	60	47
13:00	62	76	59	45
14:00	62	78	59	44
15:00	63	75	61	50
16:00	65	75	63	51
17:00	66	76	65	56
18:00	64	74	62	48
19:00	62	74	58	41
20:00	60	73	54	37
21:00	59	74	49	34
22:00	56	71	41	32
23:00	55	73	34	31

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	66.2	59.0	63.3	63.1	37.6	56.6
Lmax (Maximum)	79.8	72.8	75.8	74.3	63.2	71.0
L50 (Median)	65.2	49.0	59.4	59.2	31.4	38.2
L90 (Background)	56.0	34.0	45.7	45.1	29.9	32.9

Computed Ldn, dB	64.8
% Daytime Energy	89%
% Nighttime Energy	11%

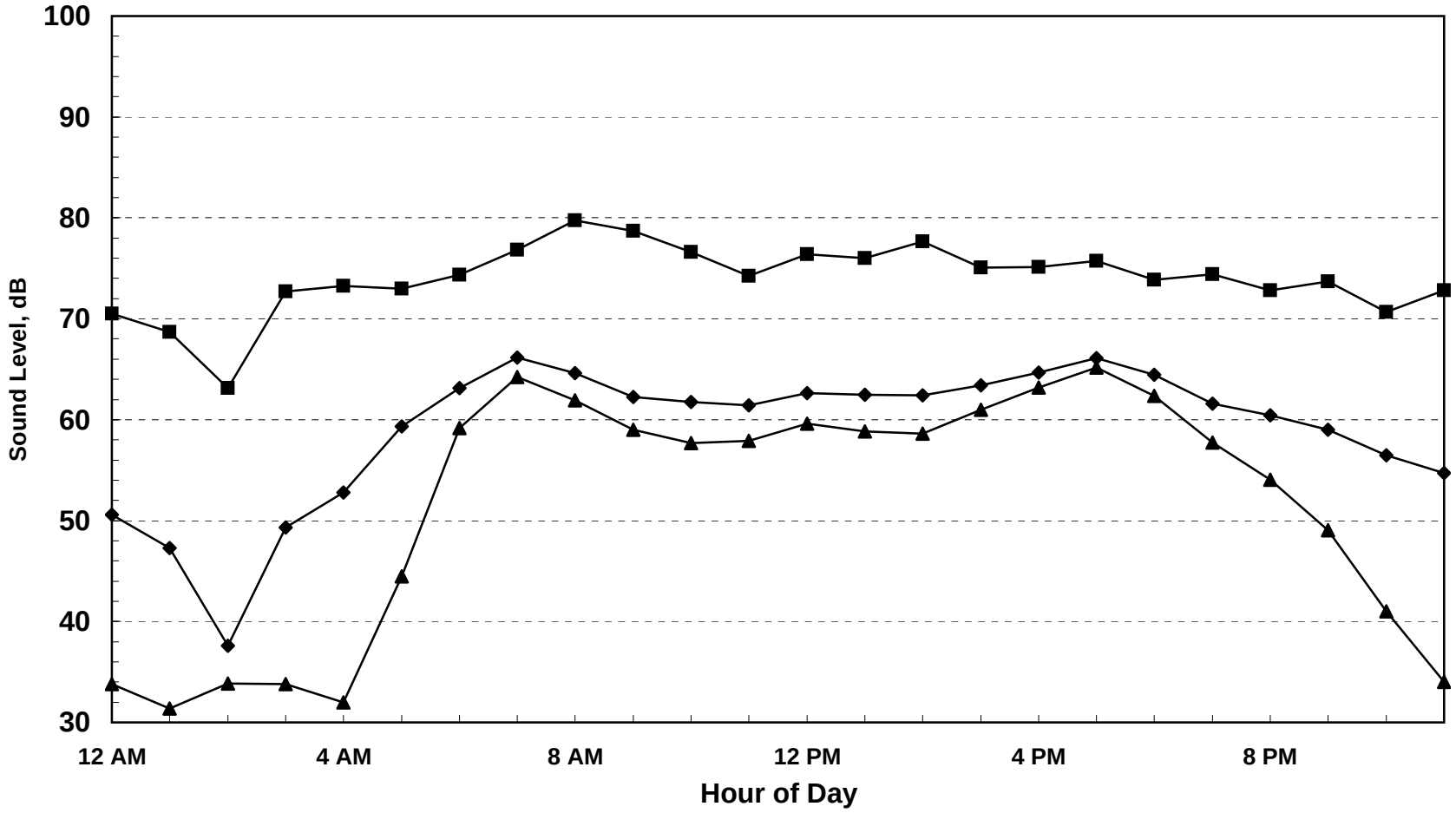
j.c. brennan & associates
consultants in acoustics

Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site A

Thursday, July 31, 2014



Ldn = 64.8 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site A
Friday, August 01, 2014

Hour	Leq	Lmax	L50	L90
0:00	52	72	34	31
1:00	51	70	34	31
2:00	46	70	32	30
3:00	48	70	34	32
4:00	53	71	34	31
5:00	58	75	42	34
6:00	63	79	57	41
7:00	65	76	63	49
8:00	65	76	63	50
9:00	63	77	60	43
10:00	62	75	59	45
11:00	62	75	58	41
12:00	63	74	60	44
13:00	62	73	59	45
14:00	62	78	59	46
15:00	63	78	60	48
16:00	63	74	62	50
17:00	64	74	63	52
18:00	63	77	60	46
19:00	61	77	55	39
20:00	60	75	53	38
21:00	58	74	46	35
22:00	57	71	44	35
23:00	56	73	38	33

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65.3	57.7	62.7	63.1	46.3	56.7
Lmax (Maximum)	78.1	73.5	75.5	79.5	70.0	72.5
L50 (Median)	63.3	46.3	58.5	57.4	32.1	38.8
L90 (Background)	51.9	34.8	44.7	41.5	30.4	33.2

Computed Ldn, dB	64.7
% Daytime Energy	87%
% Nighttime Energy	13%

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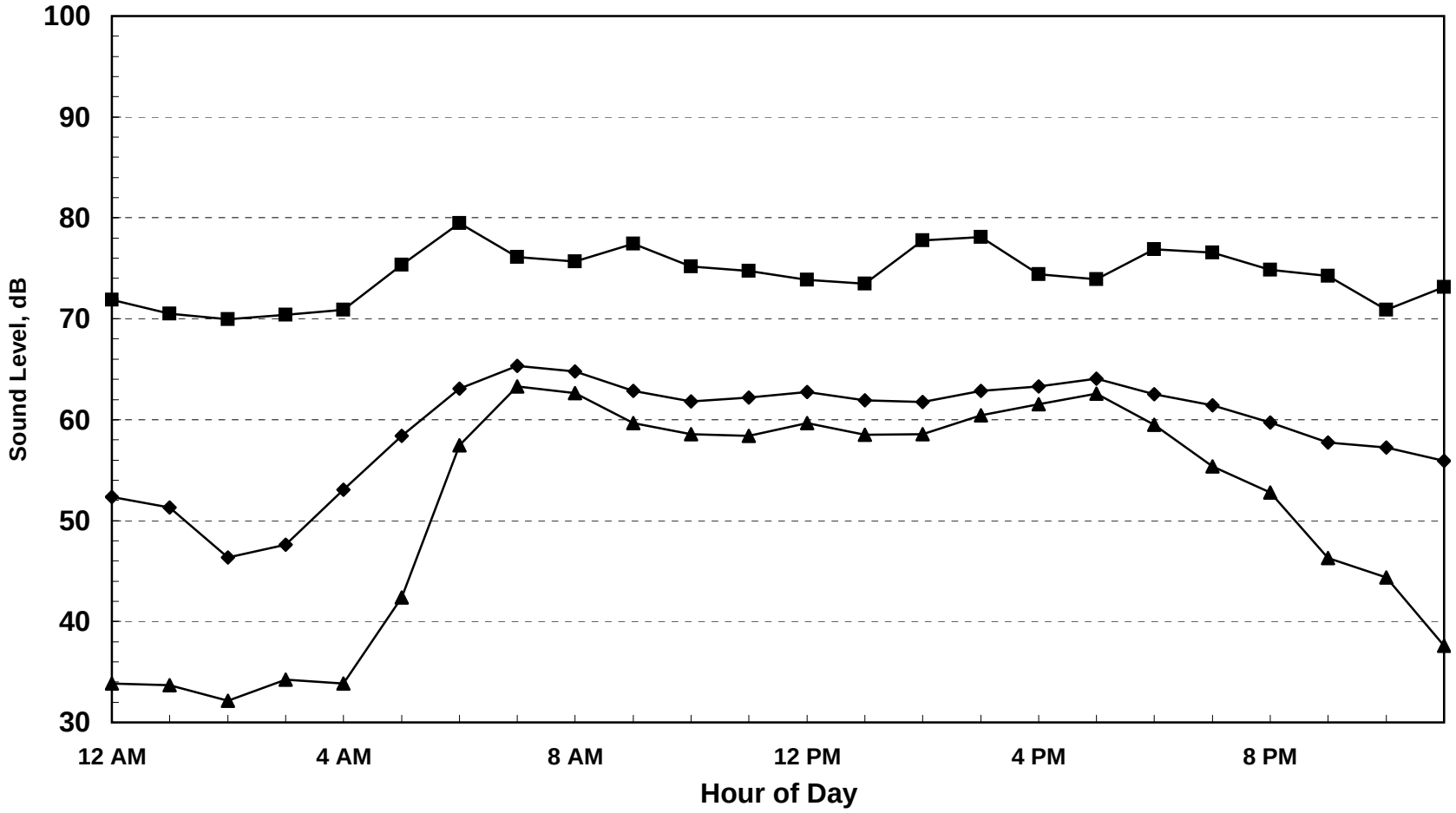
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site A

Friday, August 01, 2014



Ldn = 64.7 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site A
Saturday, August 02, 2014

Hour	Leq	Lmax	L50	L90
0:00	54	75	36	32
1:00	49	67	34	31
2:00	47	71	34	32
3:00	46	70	35	33
4:00	49	70	35	33
5:00	55	72	34	31
6:00	57	79	40	33
7:00	59	74	48	34
8:00	60	75	53	34
9:00	62	75	57	38
10:00	62	76	57	39
11:00	62	73	59	43
12:00	62	77	59	44
13:00	61	80	57	43
14:00	62	80	58	43
15:00	61	76	57	42
16:00	61	76	57	42
17:00	61	75	56	42
18:00	60	72	54	38
19:00	60	76	52	34
20:00	59	73	48	31
21:00	58	72	47	33
22:00	57	80	41	32
23:00	55	73	36	30

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	62.2	58.1	60.9	57.5	46.0	53.9
Lmax (Maximum)	80.1	71.6	75.4	80.1	67.5	73.1
L50 (Median)	58.9	46.7	54.6	40.8	33.6	36.0
L90 (Background)	44.1	31.4	38.7	32.9	29.8	31.8

Computed Ldn, dB	62.3
% Daytime Energy	89%
% Nighttime Energy	11%

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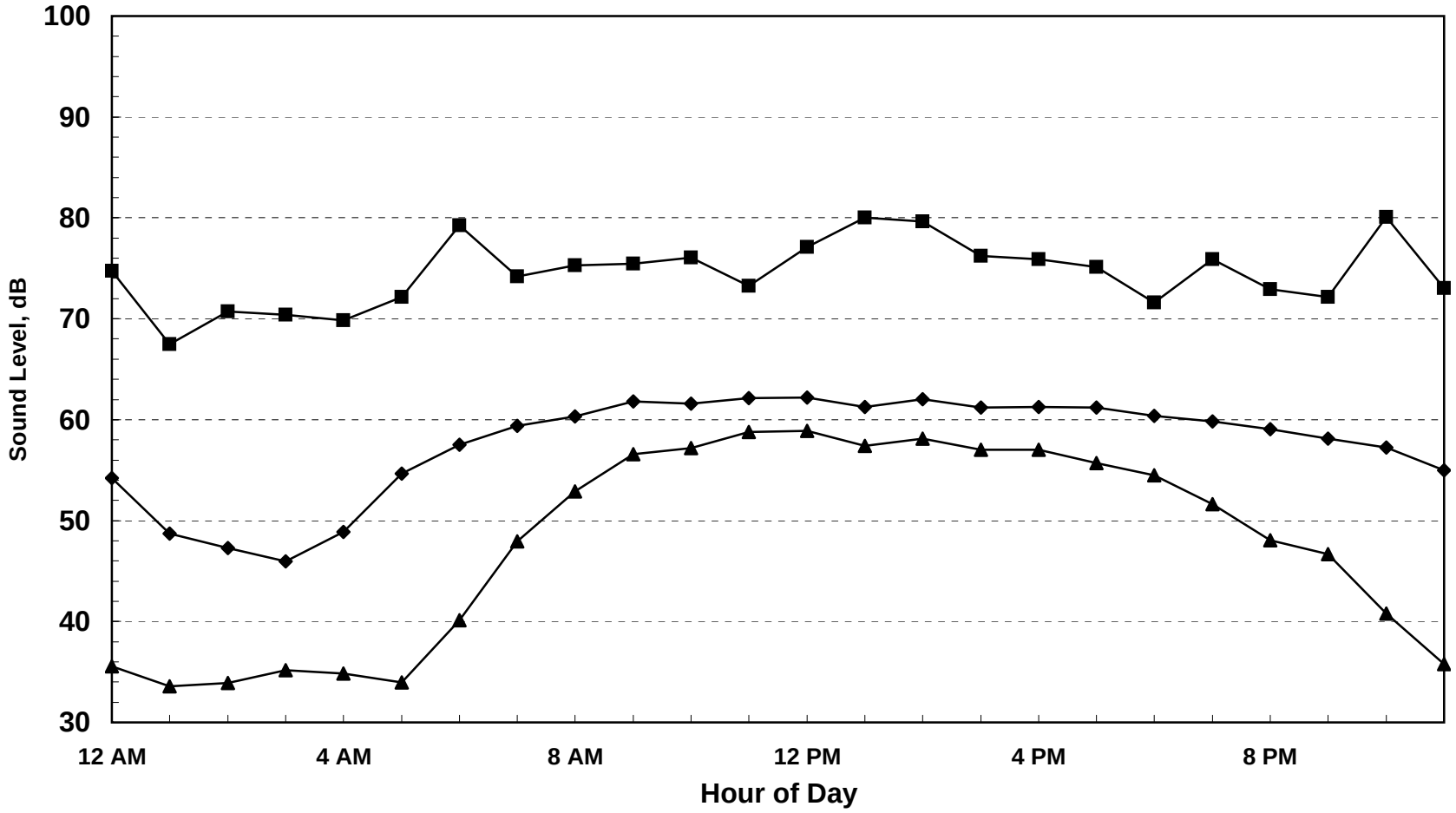
Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site A
Saturday, August 02, 2014



Ldn = 62.3 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site A
Sunday, August 03, 2014

Hour	Leq	Lmax	L50	L90
0:00	52	74	32	29
1:00	50	72	34	29
2:00	49	72	31	28
3:00	47	69	30	27
4:00	47	72	32	30
5:00	54	71	36	32
6:00	58	83	39	33
7:00	56	71	37	34
8:00	58	73	47	36
9:00	61	74	54	37
10:00	63	74	59	39
11:00	62	77	57	38
12:00	63	75	61	45
13:00	63	81	60	43
14:00	62	77	58	40
15:00	62	73	58	42
16:00	62	74	56	38
17:00	62	75	57	40
18:00	61	73	54	36
19:00	60	73	51	30
20:00	59	72	47	29
21:00	58	75	43	29
22:00	56	76	34	28
23:00	54	70	35	30

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	63.5	55.6	61.2	57.6	46.6	53.2
Lmax (Maximum)	81.3	70.9	74.5	82.9	68.5	73.2
L50 (Median)	60.6	37.0	53.3	38.7	30.3	33.6
L90 (Background)	45.4	28.6	37.1	32.7	27.2	29.6

Computed Ldn, dB	62.1
% Daytime Energy	91%
% Nighttime Energy	9%

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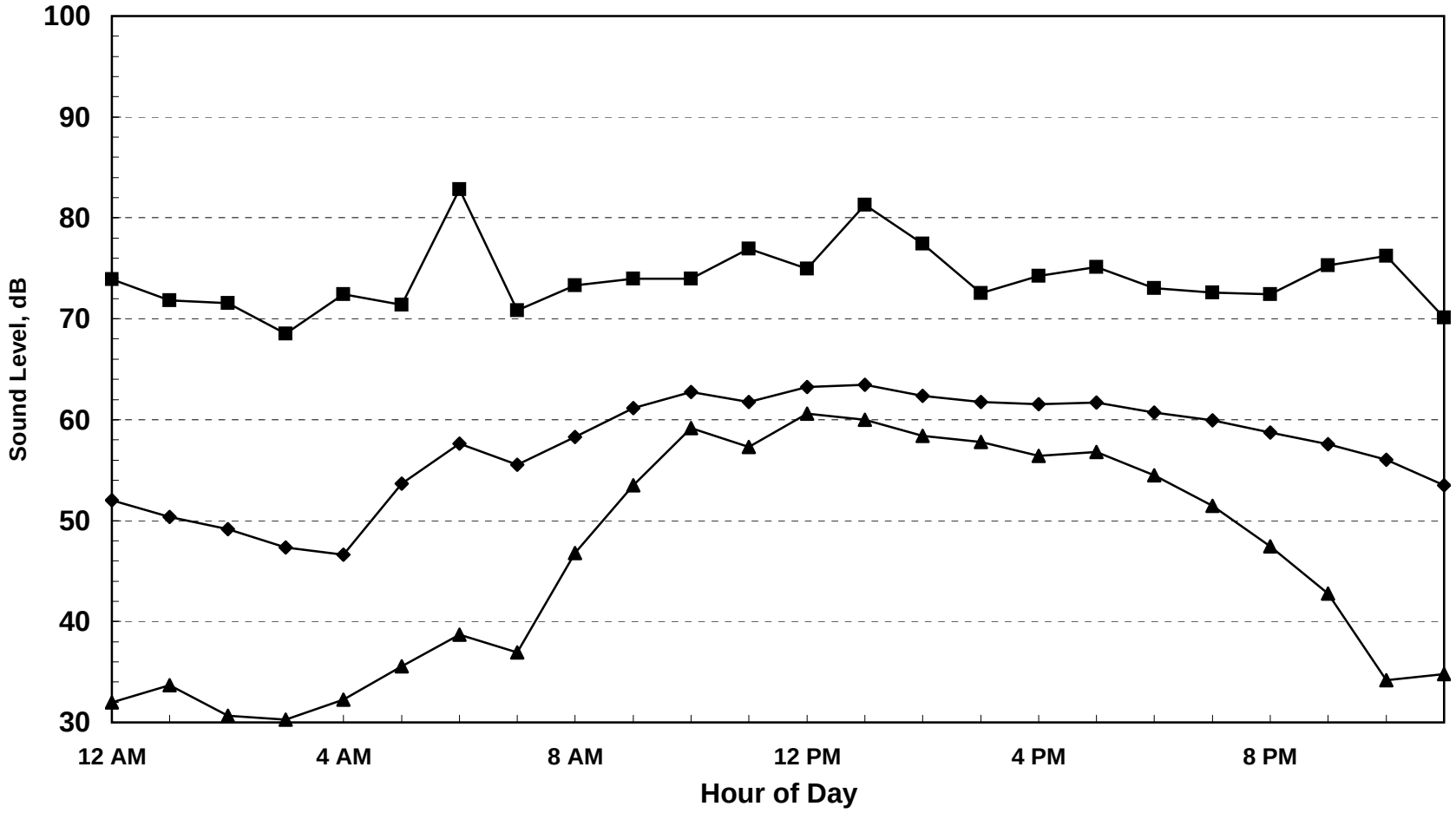
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site A

Sunday, August 03, 2014



Ldn = 62.1 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site B
Thursday, July 31, 2014

Hour	Leq	Lmax	L50	L90
0:00	62	74	60	49
1:00	60	81	57	39
2:00	60	73	56	38
3:00	61	76	58	42
4:00	64	78	63	55
5:00	68	78	68	63
6:00	71	81	71	68
7:00	71	83	71	68
8:00	70	78	69	67
9:00	69	77	69	66
10:00	70	79	69	67
11:00	70	81	69	66
12:00	70	79	69	67
13:00	70	81	69	67
14:00	70	82	70	67
15:00	70	81	70	67
16:00	71	78	71	68
17:00	70	80	70	68
18:00	70	82	70	67
19:00	69	86	68	65
20:00	68	79	67	64
21:00	67	82	67	63
22:00	66	77	66	61
23:00	64	73	63	57

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	70.9	67.3	69.8	70.9	59.6	65.7
Lmax (Maximum)	86.4	76.7	80.4	81.4	72.8	76.8
L50 (Median)	70.6	66.9	69.3	70.6	55.7	62.3
L90 (Background)	68.4	63.5	66.5	67.7	37.9	52.5

Computed Ldn, dB	73.0
% Daytime Energy	81%
% Nighttime Energy	19%

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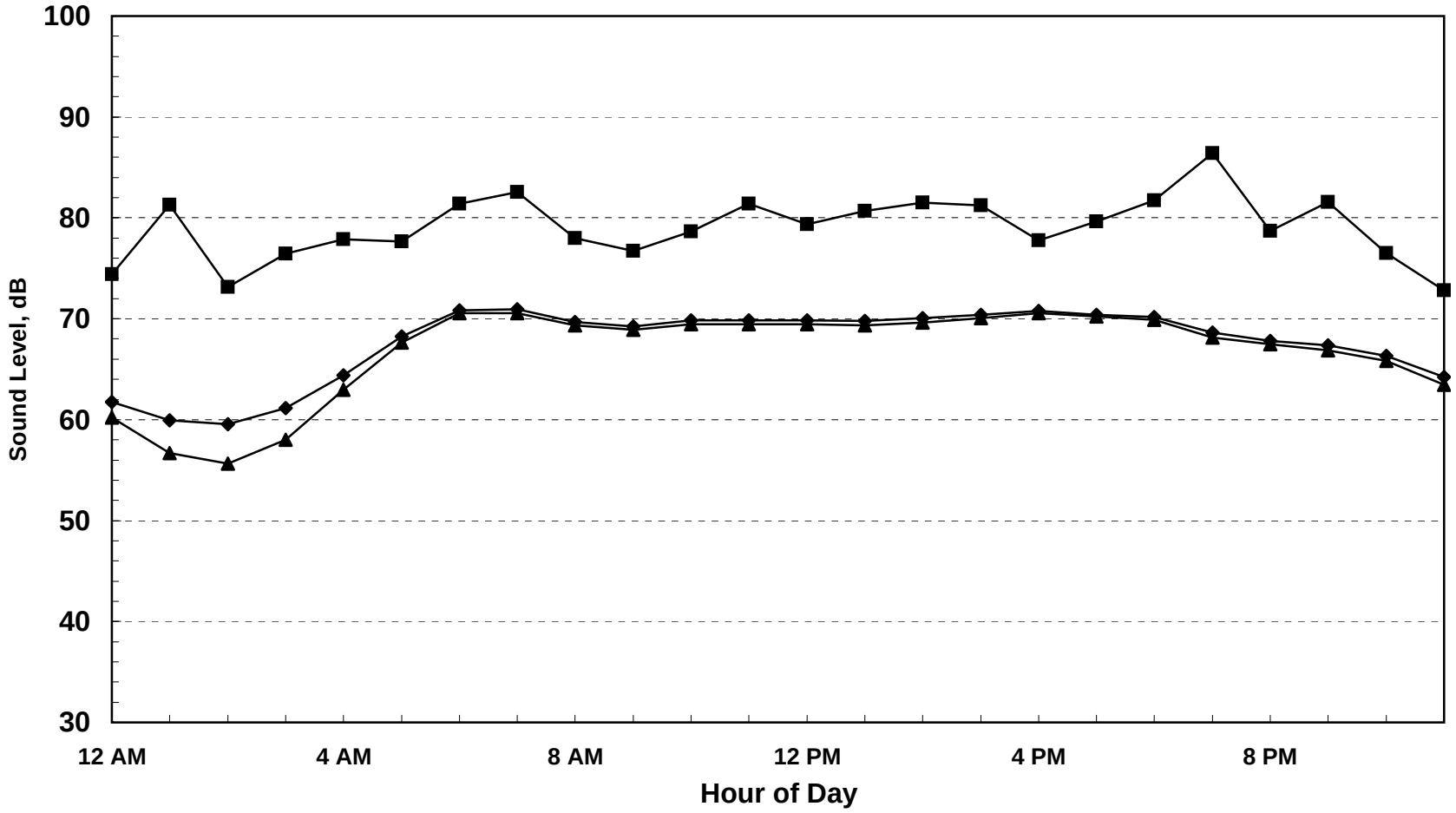
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site B

Thursday, July 31, 2014



Ldn = 73.0 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site B
Friday, August 01, 2014

Hour	Leq	Lmax	L50	L90
0:00	63	78	61	52
1:00	61	74	59	47
2:00	61	75	57	43
3:00	61	75	59	44
4:00	64	78	63	56
5:00	68	76	67	62
6:00	71	83	71	67
7:00	71	80	71	69
8:00	70	77	70	68
9:00	70	81	70	67
10:00	70	83	70	67
11:00	71	83	70	68
12:00	71	85	70	68
13:00	71	82	70	68
14:00	71	83	70	68
15:00	71	81	70	68
16:00	70	80	70	68
17:00	70	80	70	68
18:00	70	83	70	67
19:00	69	78	69	66
20:00	69	81	69	66
21:00	68	80	68	65
22:00	68	79	67	63
23:00	66	75	65	60

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71.2	68.3	70.2	70.9	60.5	66.0
Lmax (Maximum)	85.0	77.2	81.2	83.4	73.8	76.9
L50 (Median)	70.9	68.0	69.9	70.5	57.1	63.2
L90 (Background)	68.8	65.1	67.4	67.4	42.6	54.9

Computed Ldn, dB	73.3
% Daytime Energy	81%
% Nighttime Energy	19%

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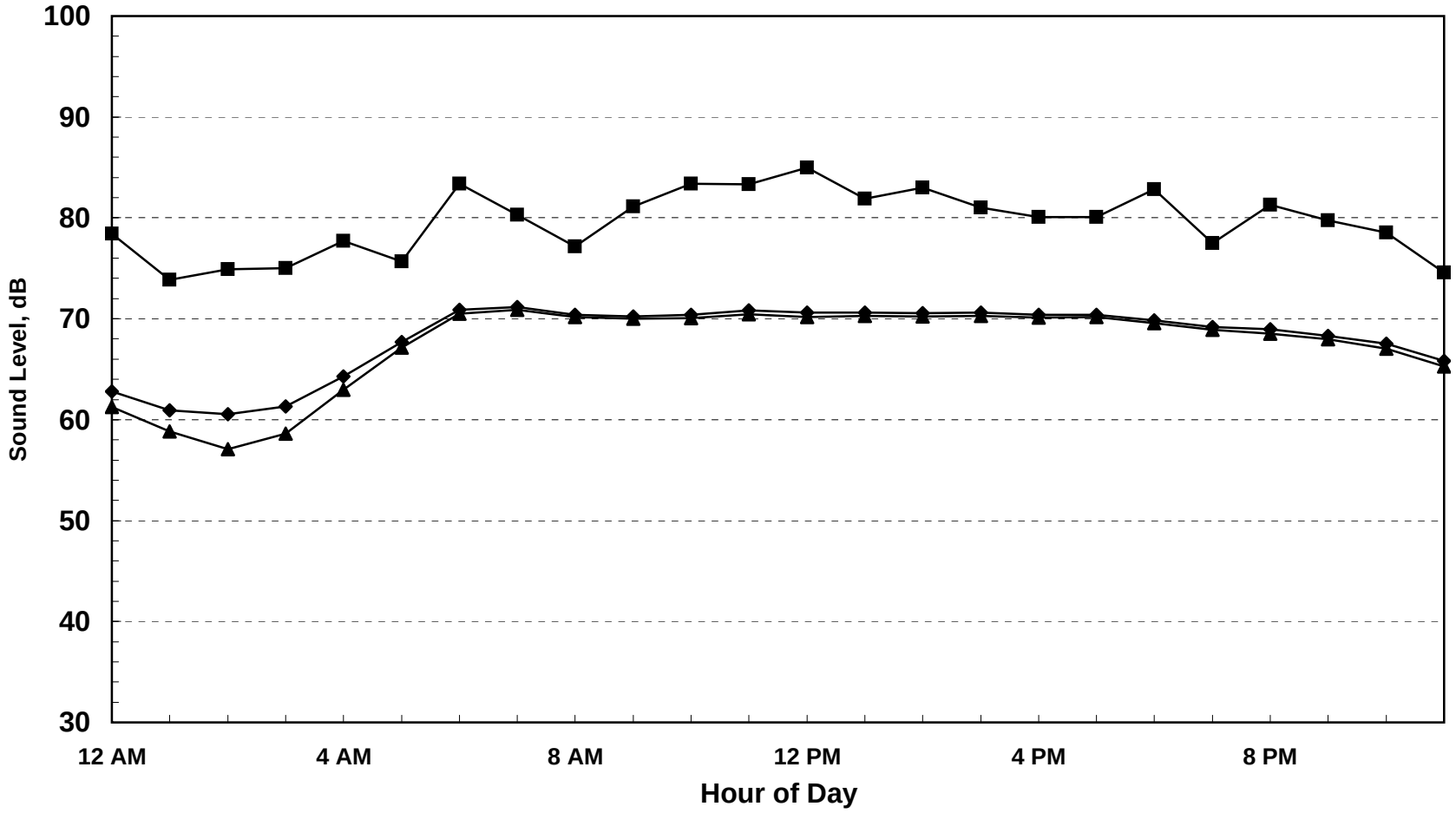
Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site B
Friday, August 01, 2014



Ldn = 73.3 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site B
Saturday, August 02, 2014

Hour	Leq	Lmax	L50	L90
0:00	64	76	63	55
1:00	62	74	61	54
2:00	61	72	59	44
3:00	61	75	59	47
4:00	61	70	60	47
5:00	65	77	63	55
6:00	67	79	66	62
7:00	68	78	68	64
8:00	68	78	68	64
9:00	69	83	68	65
10:00	70	80	69	67
11:00	69	80	69	66
12:00	70	80	69	66
13:00	70	80	69	66
14:00	69	82	69	66
15:00	69	77	69	66
16:00	69	85	69	66
17:00	69	81	69	66
18:00	69	82	68	65
19:00	68	82	68	65
20:00	68	83	67	64
21:00	68	77	68	64
22:00	67	81	66	63
23:00	66	76	66	62

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	69.8	67.8	68.9	66.9	61.1	64.4
Lmax (Maximum)	84.9	77.0	80.6	81.4	70.1	75.6
L50 (Median)	69.4	67.3	68.5	66.3	59.1	62.6
L90 (Background)	66.8	64.0	65.5	63.0	44.0	54.1

Computed Ldn, dB	71.8
% Daytime Energy	83%
% Nighttime Energy	17%

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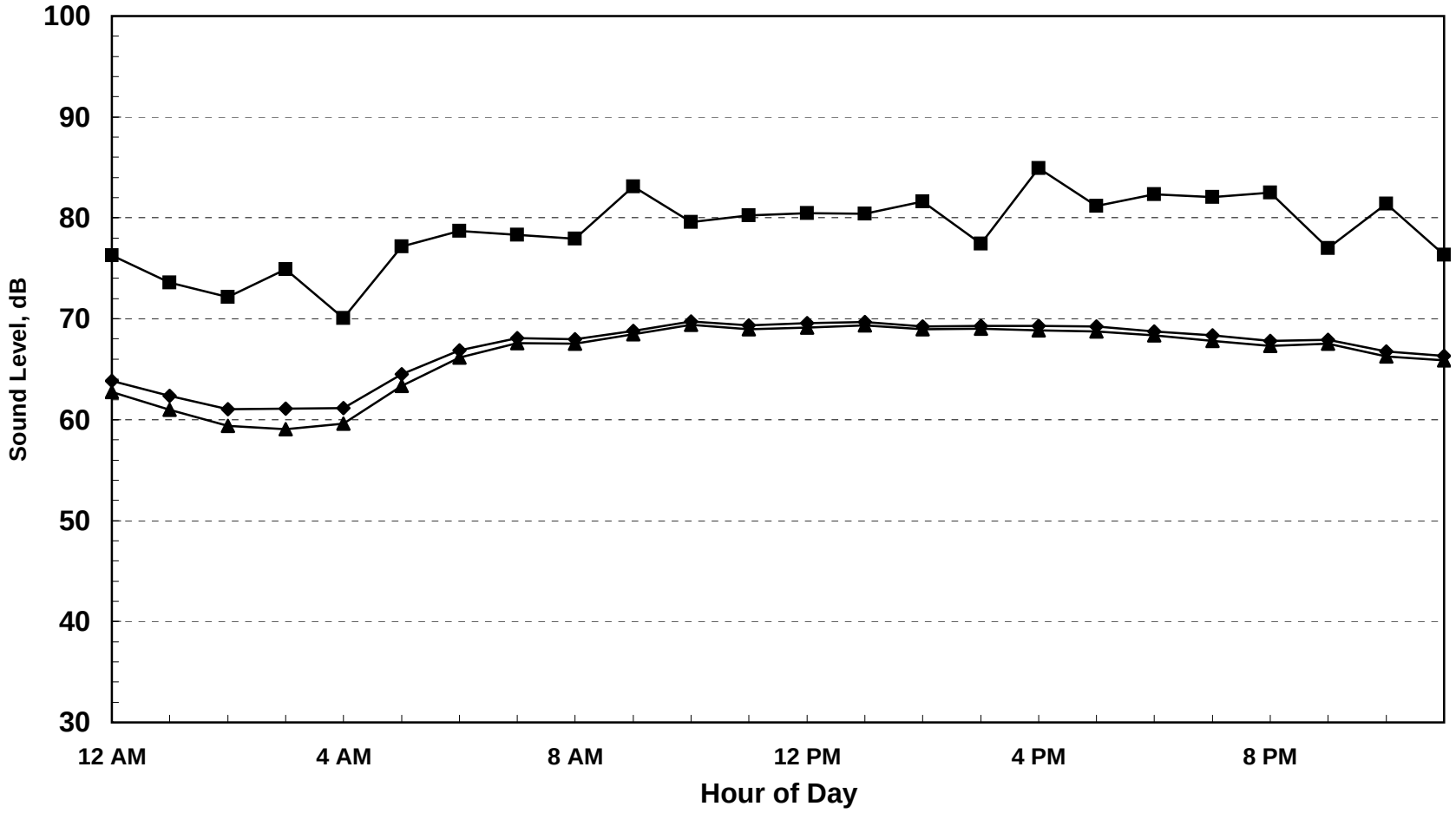
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site B

Saturday, August 02, 2014



Ldn = 71.8 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site B
Sunday, August 03, 2014

Hour	Leq	Lmax	L50	L90
0:00	65	77	65	59
1:00	64	75	63	56
2:00	61	78	59	46
3:00	61	75	58	44
4:00	60	73	58	43
5:00	64	85	63	53
6:00	65	84	64	57
7:00	65	77	65	59
8:00	66	78	66	61
9:00	67	79	67	63
10:00	69	83	68	65
11:00	70	79	69	67
12:00	70	80	70	67
13:00	70	78	70	68
14:00	70	84	69	67
15:00	70	81	69	67
16:00	70	81	70	67
17:00	70	80	69	66
18:00	69	79	69	66
19:00	69	84	68	66
20:00	68	79	68	64
21:00	67	80	66	62
22:00	66	79	65	59
23:00	64	79	62	53

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	70.3	65.5	68.9	65.5	60.3	63.7
Lmax (Maximum)	84.4	77.2	80.3	85.0	72.5	78.3
L50 (Median)	70.1	64.9	68.2	64.7	57.6	61.7
L90 (Background)	67.7	59.4	65.0	59.2	43.5	52.2

Computed Ldn, dB	71.3
% Daytime Energy	85%
% Nighttime Energy	15%

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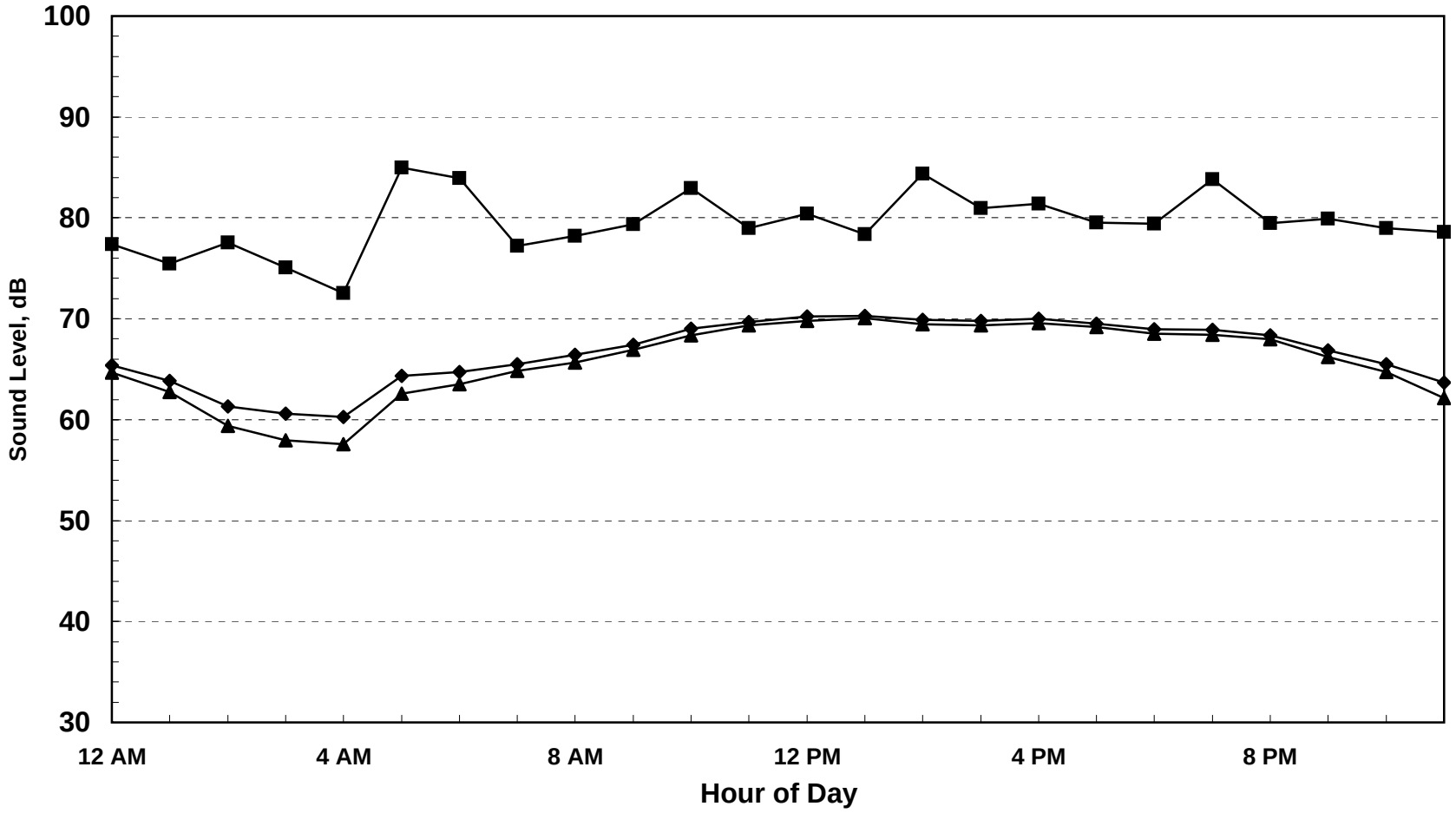
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site B

Sunday, August 03, 2014



Ldn = 71.3 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site C
Thursday, July 31, 2014

Hour	Leq	Lmax	L50	L90
0:00	52	70	49	45
1:00	47	64	44	37
2:00	45	65	42	37
3:00	46	65	42	38
4:00	48	66	46	41
5:00	55	72	52	47
6:00	59	72	57	53
7:00	59	74	55	51
8:00	58	70	53	49
9:00	58	72	51	48
10:00	58	71	52	48
11:00	57	71	51	47
12:00	58	73	53	48
13:00	58	79	52	48
14:00	58	70	53	49
15:00	59	73	54	50
16:00	60	74	57	51
17:00	60	71	57	52
18:00	60	70	56	52
19:00	58	71	53	48
20:00	58	70	53	50
21:00	56	69	51	48
22:00	54	70	52	48
23:00	52	68	50	46

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60.5	55.6	58.6	59.3	45.3	53.3
Lmax (Maximum)	79.3	69.4	71.9	71.8	63.5	67.9
L50 (Median)	57.3	50.9	53.5	56.5	41.8	48.0
L90 (Background)	52.4	47.2	49.2	53.0	36.8	43.6

Computed Ldn, dB	61.0
% Daytime Energy	85%
% Nighttime Energy	15%

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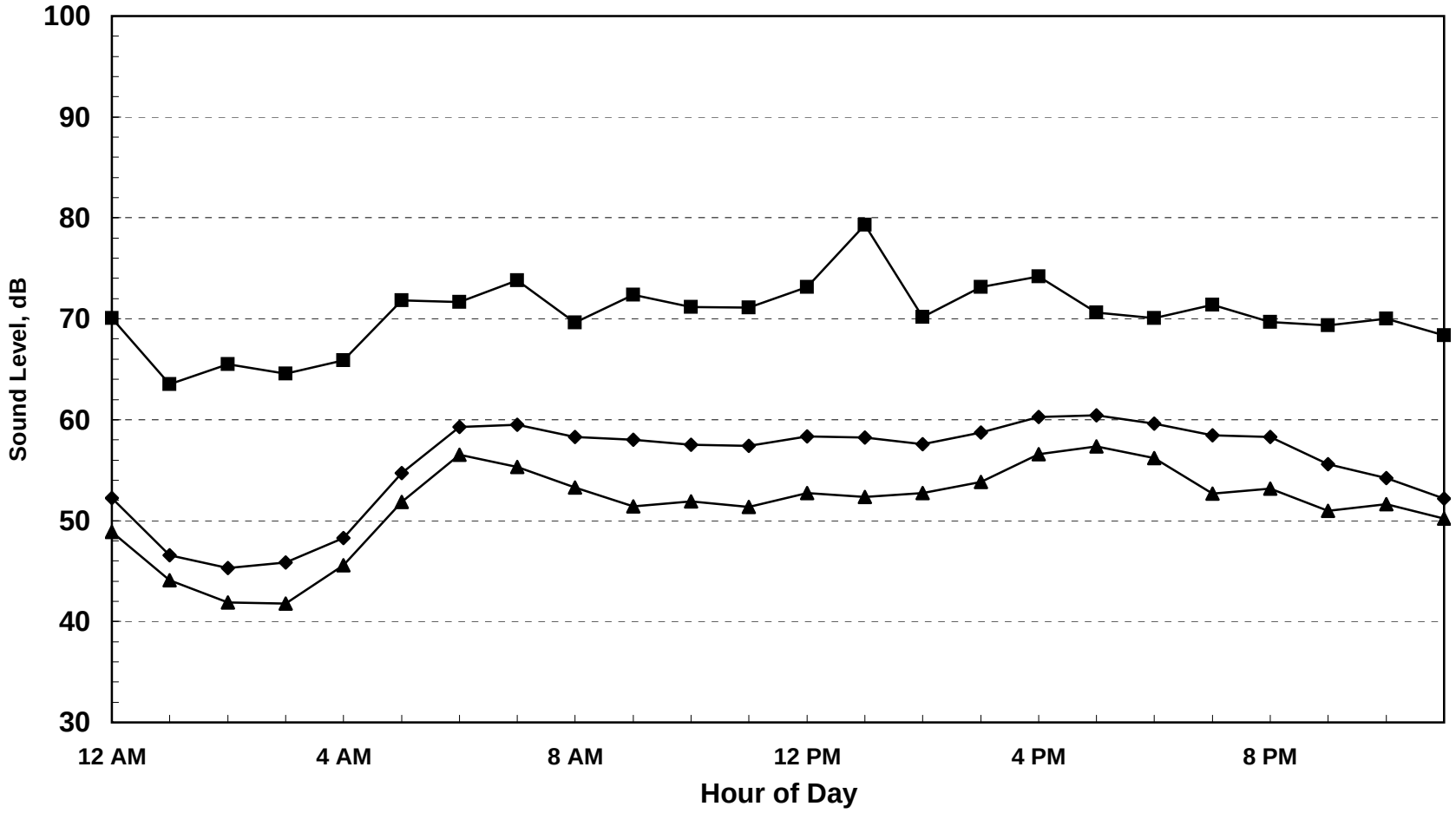
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site C

Thursday, July 31, 2014



Ldn = 61.0 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site C
Friday, August 01, 2014

Hour	Leq	Lmax	L50	L90
0:00	51	70	46	42
1:00	49	71	43	37
2:00	46	65	42	37
3:00	46	65	44	40
4:00	51	68	48	44
5:00	57	71	55	50
6:00	60	74	58	54
7:00	61	70	59	53
8:00	58	73	54	49
9:00	57	71	53	49
10:00	58	70	53	49
11:00	57	72	53	50
12:00	59	69	55	50
13:00	59	71	56	52
14:00	60	72	57	54
15:00	60	71	57	53
16:00	61	71	58	55
17:00	61	72	58	54
18:00	60	70	57	54
19:00	59	70	56	53
20:00	58	71	55	52
21:00	56	69	53	50
22:00	56	73	54	50
23:00	57	77	54	48

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60.8	55.6	59.1	59.9	46.2	54.7
Lmax (Maximum)	72.8	69.0	70.8	76.6	65.0	70.5
L50 (Median)	58.8	52.5	55.6	57.5	42.2	49.1
L90 (Background)	54.6	48.6	51.8	54.1	37.2	44.7

Computed Ldn, dB	62.1
% Daytime Energy	82%
% Nighttime Energy	18%

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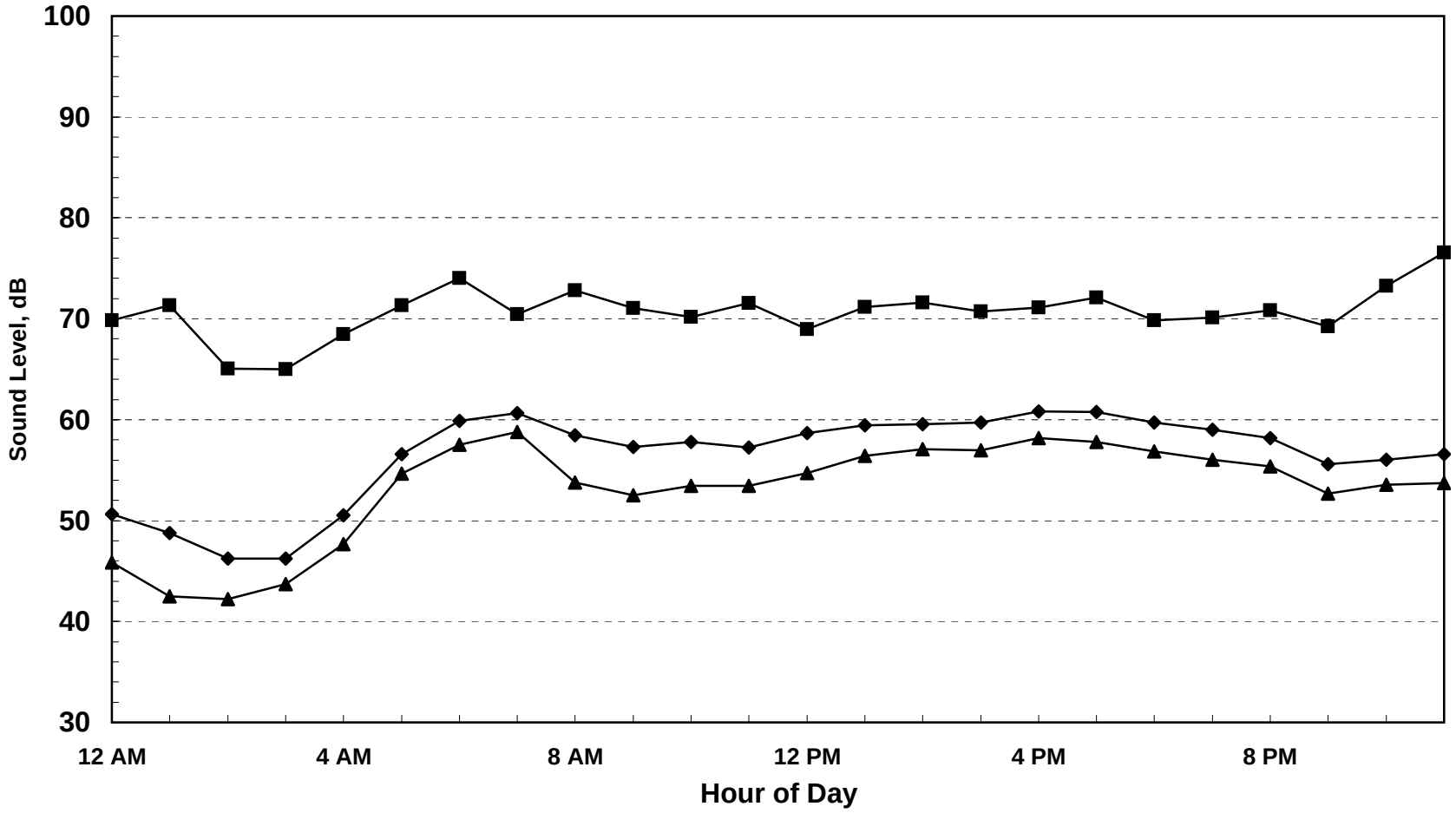
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site C

Friday, August 01, 2014



Ldn = 62.1 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site C
Saturday, August 02, 2014

Hour	Leq	Lmax	L50	L90
0:00	52	73	49	46
1:00	47	65	45	42
2:00	47	66	45	41
3:00	46	64	44	40
4:00	49	67	45	41
5:00	51	69	48	44
6:00	54	68	51	48
7:00	55	69	52	48
8:00	56	70	50	46
9:00	56	70	51	47
10:00	57	69	51	47
11:00	57	70	52	47
12:00	57	69	52	47
13:00	57	69	52	47
14:00	58	71	52	47
15:00	58	73	52	47
16:00	57	74	52	47
17:00	57	69	52	47
18:00	57	69	51	46
19:00	56	71	50	47
20:00	55	69	50	47
21:00	55	70	52	49
22:00	54	71	50	46
23:00	52	71	49	47

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	57.9	54.8	56.7	54.2	46.0	51.2
Lmax (Maximum)	73.8	68.6	70.2	72.6	63.9	68.2
L50 (Median)	52.0	49.9	51.2	51.0	44.1	47.3
L90 (Background)	48.9	46.2	47.2	48.2	40.1	43.8

Computed Ldn, dB	59.0
% Daytime Energy	85%
% Nighttime Energy	15%

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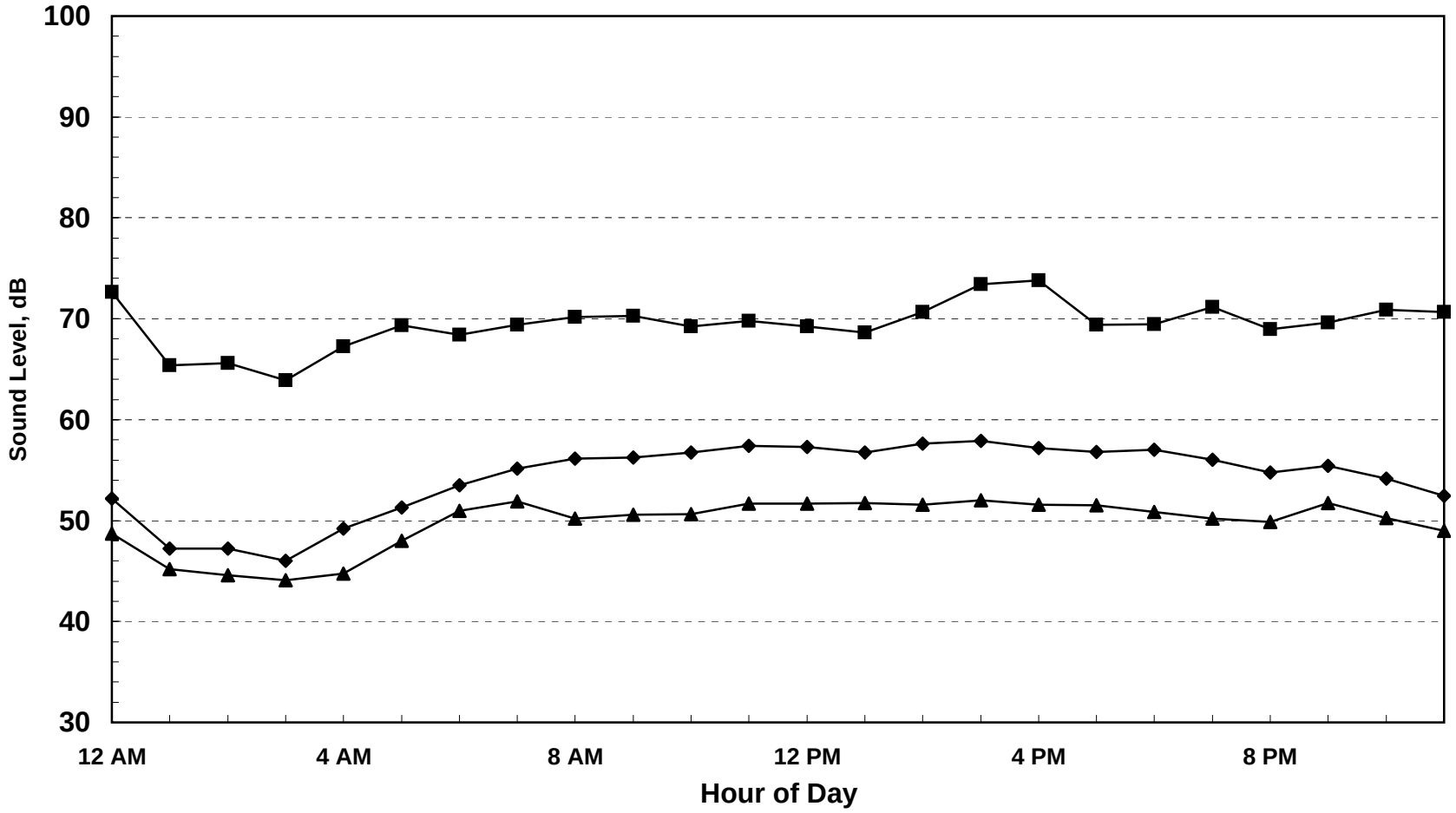
Appendix B

2014-150 Russell Ranch EIR

24hr Continuous Noise Monitoring - Site C

Saturday, August 02, 2014



Ldn = 59.0 dB

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Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site C
Sunday, August 03, 2014

Hour	Leq	Lmax	L50	L90
0:00	51	68	48	45
1:00	51	69	47	43
2:00	48	70	44	38
3:00	47	66	42	38
4:00	45	65	42	38
5:00	50	72	45	41
6:00	51	72	47	43
7:00	53	70	49	45
8:00	57	69	52	47
9:00	56	70	50	46
10:00	57	69	51	47
11:00	56	70	50	47
12:00	59	72	53	48
13:00	59	72	53	48
14:00	57	70	51	47
15:00	57	71	51	47
16:00	58	70	51	47
17:00	57	71	50	47
18:00	57	77	49	46
19:00	56	72	51	47
20:00	56	72	52	48
21:00	54	71	50	47
22:00	52	69	45	42
23:00	49	71	43	40

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	58.7	53.3	56.8	51.7	44.5	49.9
Lmax (Maximum)	77.1	69.2	71.1	72.2	65.3	69.2
L50 (Median)	52.7	48.9	50.9	48.4	41.6	44.8
L90 (Background)	48.1	44.7	46.8	44.6	37.9	40.9

Computed Ldn, dB	58.2
% Daytime Energy	89%
% Nighttime Energy	11%

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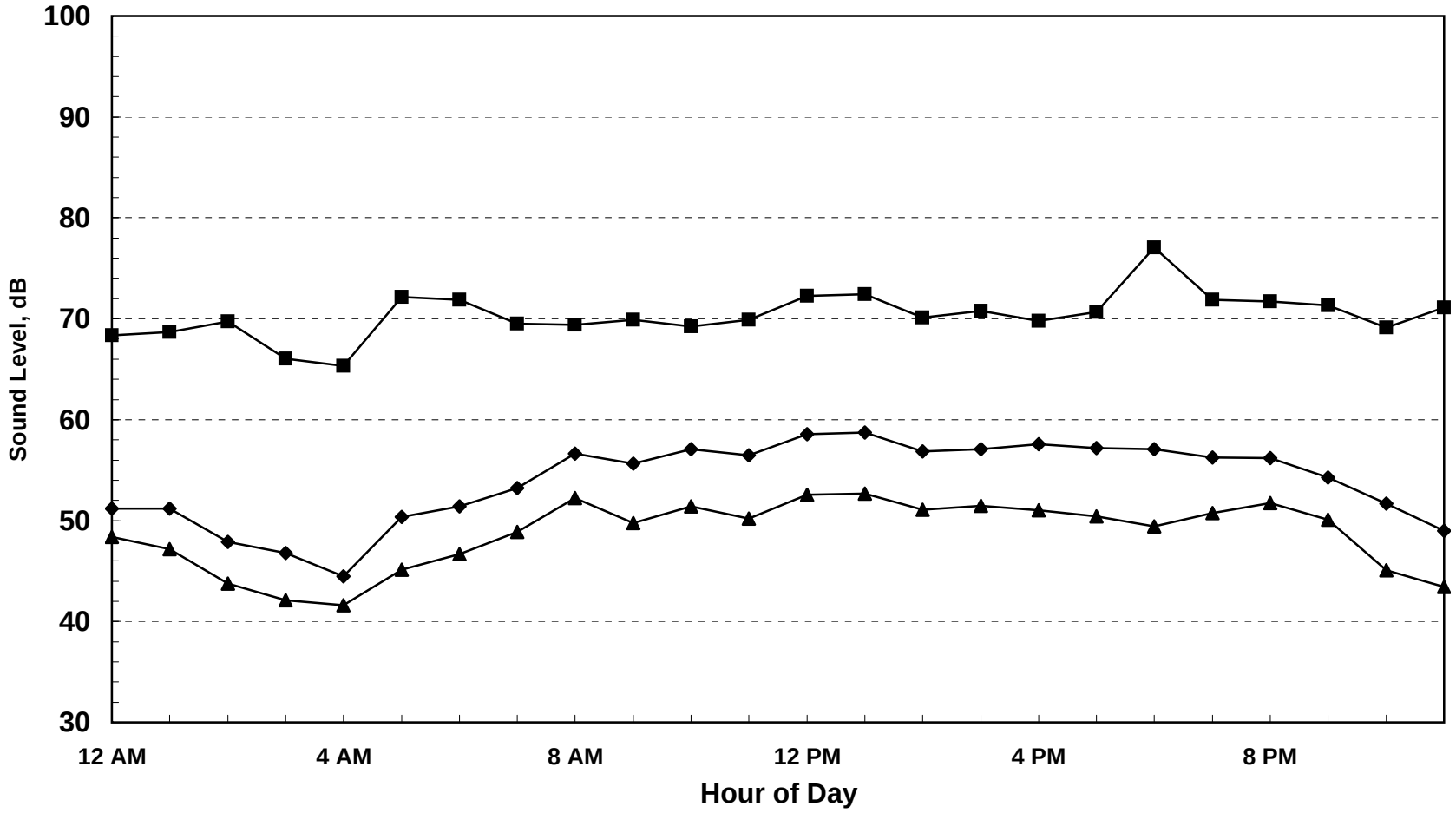
Appendix B
2014-150 Russell Ranch EIR
24hr Continuous Noise Monitoring - Site C
Sunday, August 03, 2014



Ldn = 58.2 dB

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150 Russell Ranch EIR
Description: Existing Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	8,320	85		15	2	1	45	90	0
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	14,030	85		15	2	1	45	120	-5
3	Iron Point Rd.	West of Broadstone Pkwy.	17,820	85		15	2	1	45	90	0
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	12,240	85		15	2	1	45	100	0
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	10,120	85		15	2	1	45	100	-5
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	7,840	85		15	2	1	45	100	-5
7	Iron Point Rd.	East of Empire Ranch Rd.	1,820	85		15	2	1	45	90	-5
8	White Rock Rd.	Scott Rd. to Placerville Rd.	7,490	85		15	2	1	55	400	0
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	10,690	85		15	2	1	50	75	-5
10	White Rock Rd.	East of Latrobe Rd.	13,860	85		15	2	1	45	50	0
11	Scott Rd.	North of White Rock Rd.	9,310	85		15	2	1	55	100	0
12	Empire Ranch Rd.	North of Broadstone Pkwy.	6,870	85		15	2	1	45	100	-5
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	5,430	85		15	2	1	45	100	-5
14	Empire Ranch Rd.	South of Iron Point Rd.	N/A	85		15	2	1	45	100	-5
15	El Dorado Hills Blvd.	North of U.S. 50	25,900	85		15	2	1	45	100	0
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	40,940	85		15	2	1	45	100	0
17	Latrobe Rd.	South of White Rock Rd.	21,030	85		15	2	1	55	90	-5

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2014-150 Russell Ranch EIR
Description: Existing Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	61.4	52.8	54.2	62.6
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	56.8	48.2	49.6	58.0
3	Iron Point Rd.	West of Broadstone Pkwy.	64.7	56.1	57.6	65.9
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	62.4	53.8	55.2	63.6
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	56.5	47.9	49.4	57.8
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	55.4	46.8	48.3	56.7
7	Iron Point Rd.	East of Empire Ranch Rd.	49.8	41.2	42.6	51.0
8	White Rock Rd.	Scott Rd. to Placerville Rd.	53.7	43.9	44.9	54.6
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	60.0	50.8	51.9	61.0
10	White Rock Rd.	East of Latrobe Rd.	67.4	58.8	60.3	68.7
11	Scott Rd.	North of White Rock Rd.	63.7	53.9	54.9	64.6
12	Empire Ranch Rd.	North of Broadstone Pkwy.	54.8	46.2	47.7	56.1
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	53.8	45.2	46.7	55.1
14	Empire Ranch Rd.	South of Iron Point Rd.	#VALUE!	#VALUE!	#VALUE!	#VALUE!
15	El Dorado Hills Blvd.	North of U.S. 50	65.6	57.0	58.5	66.9
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	67.6	59.0	60.5	68.8
17	Latrobe Rd.	South of White Rock Rd.	62.9	53.1	54.1	63.8

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2014-150 Russell Ranch EIR
Description: Existing Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment	75	70	65	60	55
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	13	29	62	134	290
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	9	19	41	88	190
3	Iron Point Rd.	West of Broadstone Pkwy.	22	48	104	223	481
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	17	37	81	174	375
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	7	15	33	71	153
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	6	13	28	60	129
7	Iron Point Rd.	East of Empire Ranch Rd.	2	5	11	23	49
8	White Rock Rd.	Scott Rd. to Placerville Rd.	18	38	81	175	378
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	9	19	41	88	189
10	White Rock Rd.	East of Latrobe Rd.	19	41	88	189	407
11	Scott Rd.	North of White Rock Rd.	20	44	94	203	437
12	Empire Ranch Rd.	North of Broadstone Pkwy.	5	12	25	55	118
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	5	10	22	47	101
14	Empire Ranch Rd.	South of Iron Point Rd.	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
15	El Dorado Hills Blvd	North of U.S. 50	29	62	133	287	617
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	39	84	180	389	838
17	Latrobe Rd.	South of White Rock Rd.	16	35	75	162	349

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150 Russell Ranch EIR
Description: Existing + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	8,600	85		15	2	1	45	90	0
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	14,300	85		15	2	1	45	120	-5
3	Iron Point Rd.	West of Broadstone Pkwy.	18,300	85		15	2	1	45	90	0
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	12,900	85		15	2	1	45	100	0
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	10,700	85		15	2	1	45	100	-5
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	8,400	85		15	2	1	45	100	-5
7	Iron Point Rd.	East of Empire Ranch Rd.	2,000	85		15	2	1	45	90	-5
8	White Rock Rd.	Scott Rd. to Placerville Rd.	7,700	85		15	2	1	55	400	0
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	11,700	85		15	2	1	50	75	-5
10	White Rock Rd.	East of Latrobe Rd.	14,500	85		15	2	1	45	50	0
11	Scott Rd.	North of White Rock Rd.	9,500	85		15	2	1	55	100	0
12	Empire Ranch Rd.	North of Broadstone Pkwy.	7,300	85		15	2	1	45	100	-5
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	5,700	85		15	2	1	45	100	-5
14	Empire Ranch Rd.	South of Iron Point Rd.	N/A	85		15	2	1	45	100	-5
15	El Dorado Hills Blvd.	North of U.S. 50	26,300	85		15	2	1	45	100	0
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	41,600	85		15	2	1	45	100	0
17	Latrobe Rd.	South of White Rock Rd.	21,700	85		15	2	1	55	90	-5

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2014-150 Russell Ranch EIR
Description: Existing + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	61.5	52.9	54.4	62.8
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	56.8	48.2	49.7	58.1
3	Iron Point Rd.	West of Broadstone Pkwy.	64.8	56.2	57.7	66.0
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	62.6	54.0	55.5	63.8
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	56.8	48.2	49.7	58.0
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	55.7	47.1	48.6	57.0
7	Iron Point Rd.	East of Empire Ranch Rd.	50.2	41.6	43.1	51.4
8	White Rock Rd.	Scott Rd. to Placerville Rd.	53.8	44.1	45.0	54.7
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	60.4	51.1	52.3	61.4
10	White Rock Rd.	East of Latrobe Rd.	67.6	59.0	60.5	68.9
11	Scott Rd.	North of White Rock Rd.	63.8	54.0	54.9	64.7
12	Empire Ranch Rd.	North of Broadstone Pkwy.	55.1	46.5	48.0	56.4
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	54.0	45.4	46.9	55.3
14	Empire Ranch Rd.	South of Iron Point Rd.	#VALUE!	#VALUE!	#VALUE!	#VALUE!
15	El Dorado Hills Blvd.	North of U.S. 50	65.7	57.1	58.6	66.9
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	67.7	59.1	60.6	68.9
17	Latrobe Rd.	South of White Rock Rd.	63.0	53.3	54.2	64.0

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2014-150 Russell Ranch EIR
Description: Existing + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment	75	70	65	60	55
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	14	30	64	137	296
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	9	19	42	90	193
3	Iron Point Rd.	West of Broadstone Pkwy.	23	49	106	227	490
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	18	39	84	180	388
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	7	16	34	74	159
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	6	14	29	63	135
7	Iron Point Rd.	East of Empire Ranch Rd.	2	5	11	24	52
8	White Rock Rd.	Scott Rd. to Placerville Rd.	18	38	83	179	385
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	9	20	43	93	201
10	White Rock Rd.	East of Latrobe Rd.	19	42	90	195	419
11	Scott Rd.	North of White Rock Rd.	21	44	95	205	443
12	Empire Ranch Rd.	North of Broadstone Pkwy.	6	12	27	57	123
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	5	10	23	48	104
14	Empire Ranch Rd.	South of Iron Point Rd.	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
15	El Dorado Hills Blvd	North of U.S. 50	29	62	134	289	624
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	39	85	182	393	847
17	Latrobe Rd.	South of White Rock Rd.	17	36	77	165	356

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	10,900	85		15	2	1	45	90	0
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	21,300	85		15	2	1	45	120	-5
3	Iron Point Rd.	West of Broadstone Pkwy.	30,600	85		15	2	1	45	90	0
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	20,300	85		15	2	1	45	100	0
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	27,200	85		15	2	1	45	100	-5
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	24,900	85		15	2	1	45	100	-5
7	Iron Point Rd.	East of Empire Ranch Rd.	20,800	85		15	2	1	45	90	-5
8	White Rock Rd.	Scott Rd. to Placerville Rd.	19,600	85		15	2	1	55	400	0
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	29,200	85		15	2	1	50	75	-5
10	White Rock Rd.	East of Latrobe Rd.	14,700	85		15	2	1	45	50	0
11	Scott Rd.	North of White Rock Rd.	12,960	85		15	2	1	55	100	0
12	Empire Ranch Rd.	North of Broadstone Pkwy.	21,200	85		15	2	1	45	100	-5
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	21,500	85		15	2	1	45	100	-5
14	Empire Ranch Rd.	South of Iron Point Rd.	30,000	85		15	2	1	45	100	-5
15	El Dorado Hills Blvd.	North of U.S. 50	35,900	85		15	2	1	45	100	0
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	48,700	85		15	2	1	45	100	0
17	Latrobe Rd.	South of White Rock Rd.	30,300	85		15	2	1	55	90	-5

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	62.5	53.9	55.4	63.8
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	58.6	50.0	51.5	59.8
3	Iron Point Rd.	West of Broadstone Pkwy.	67.0	58.4	59.9	68.3
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	64.6	55.9	57.4	65.8
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	60.8	52.2	53.7	62.1
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	60.4	51.8	53.3	61.7
7	Iron Point Rd.	East of Empire Ranch Rd.	60.3	51.7	53.2	61.6
8	White Rock Rd.	Scott Rd. to Placerville Rd.	57.9	48.1	49.1	58.8
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	64.3	55.1	56.3	65.4
10	White Rock Rd.	East of Latrobe Rd.	67.7	59.1	60.5	68.9
11	Scott Rd.	North of White Rock Rd.	65.1	55.4	56.3	66.0
12	Empire Ranch Rd.	North of Broadstone Pkwy.	59.7	51.1	52.6	61.0
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	59.8	51.2	52.7	61.0
14	Empire Ranch Rd.	South of Iron Point Rd.	61.3	52.6	54.1	62.5
15	El Dorado Hills Blvd.	North of U.S. 50	67.0	58.4	59.9	68.3
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	68.4	59.7	61.2	69.6
17	Latrobe Rd.	South of White Rock Rd.	64.5	54.7	55.7	65.4

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment	75	70	65	60	55
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	16	35	75	161	347
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	12	25	54	117	252
3	Iron Point Rd.	West of Broadstone Pkwy.	32	69	149	320	690
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	24	52	113	244	525
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	14	30	64	137	296
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	13	28	60	130	279
7	Iron Point Rd.	East of Empire Ranch Rd.	11	25	53	115	248
8	White Rock Rd.	Scott Rd. to Placerville Rd.	33	72	155	333	717
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	17	37	80	172	370
10	White Rock Rd.	East of Latrobe Rd.	20	42	91	196	423
11	Scott Rd.	North of White Rock Rd.	25	54	117	253	544
12	Empire Ranch Rd.	North of Broadstone Pkwy.	12	25	54	116	251
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	12	25	55	117	253
14	Empire Ranch Rd.	South of Iron Point Rd.	15	32	68	147	316
15	El Dorado Hills Blvd	North of U.S. 50	36	77	165	356	767
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	44	94	203	437	940
17	Latrobe Rd.	South of White Rock Rd.	21	45	96	207	445

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	10,450	85		15	2	1	45	90	0
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	21,150	85		15	2	1	45	120	-5
3	Iron Point Rd.	West of Broadstone Pkwy.	30,600	85		15	2	1	45	90	0
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	20,300	85		15	2	1	45	100	0
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	27,400	85		15	2	1	45	100	-5
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	25,100	85		15	2	1	45	100	-5
7	Iron Point Rd.	East of Empire Ranch Rd.	20,400	85		15	2	1	45	90	-5
8	White Rock Rd.	Scott Rd. to Placerville Rd.	20,500	85		15	2	1	55	400	0
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	30,600	85		15	2	1	50	75	-5
10	White Rock Rd.	East of Latrobe Rd.	14,700	85		15	2	1	45	50	0
11	Scott Rd.	North of White Rock Rd.	16,700	85		15	2	1	55	100	0
12	Empire Ranch Rd.	North of Broadstone Pkwy.	21,200	85		15	2	1	45	100	-5
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	21,500	85		15	2	1	45	100	-5
14	Empire Ranch Rd.	South of Iron Point Rd.	30,500	85		15	2	1	45	100	-5
15	El Dorado Hills Blvd.	North of U.S. 50	35,700	85		15	2	1	45	100	0
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	48,500	85		15	2	1	45	100	0
17	Latrobe Rd.	South of White Rock Rd.	30,100	85		15	2	1	55	90	-5

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	62.4	53.8	55.2	63.6
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	58.5	49.9	51.4	59.8
3	Iron Point Rd.	West of Broadstone Pkwy.	67.0	58.4	59.9	68.3
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	64.6	55.9	57.4	65.8
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	60.9	52.3	53.7	62.1
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	60.5	51.9	53.4	61.7
7	Iron Point Rd.	East of Empire Ranch Rd.	60.3	51.7	53.1	61.5
8	White Rock Rd.	Scott Rd. to Placerville Rd.	58.1	48.3	49.2	59.0
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	64.5	55.3	56.5	65.6
10	White Rock Rd.	East of Latrobe Rd.	67.7	59.1	60.5	68.9
11	Scott Rd.	North of White Rock Rd.	66.2	56.5	57.4	67.1
12	Empire Ranch Rd.	North of Broadstone Pkwy.	59.7	51.1	52.6	61.0
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	59.8	51.2	52.7	61.0
14	Empire Ranch Rd.	South of Iron Point Rd.	61.3	52.7	54.2	62.6
15	El Dorado Hills Blvd.	North of U.S. 50	67.0	58.4	59.9	68.3
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	68.3	59.7	61.2	69.6
17	Latrobe Rd.	South of White Rock Rd.	64.5	54.7	55.6	65.4

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2014-150 Russell Ranch EIR
Description: Cumulative + Project Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment	75	70	65	60	55
1	Broadstone Pkwy.	Iron Point to E. Bidwell St.	16	34	73	156	337
2	Broadstone Pkwy.	E. Bidwell St. to Empire Ranch Rd.	12	25	54	116	250
3	Iron Point Rd.	West of Broadstone Pkwy.	32	69	149	320	690
4	Iron Point Rd.	Broadstone Pkwy. To E. Bidwell Rd.	24	52	113	244	525
5	Iron Point Rd.	E. Bidwell St. to Serpa Way	14	30	64	138	297
6	Iron Point Rd.	Serpa Way to Empire Ranch Rd.	13	28	60	130	281
7	Iron Point Rd.	East of Empire Ranch Rd.	11	24	53	113	244
8	White Rock Rd.	Scott Rd. to Placerville Rd.	34	74	159	343	739
9	White Rock Rd.	Placerville Rd. to Latrobe Rd.	18	38	82	177	381
10	White Rock Rd.	East of Latrobe Rd.	20	42	91	196	423
11	Scott Rd.	North of White Rock Rd.	30	64	139	299	645
12	Empire Ranch Rd.	North of Broadstone Pkwy.	12	25	54	116	251
13	Empire Ranch Rd.	Broadstone Pkwy. To Iron Point Rd.	12	25	55	117	253
14	Empire Ranch Rd.	South of Iron Point Rd.	15	32	69	148	320
15	El Dorado Hills Blvd	North of U.S. 50	35	76	165	355	765
16	Latrobe Rd.	U.S. 50 to White Rock Rd.	44	94	202	435	938
17	Latrobe Rd.	South of White Rock Rd.	21	44	95	206	443

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150 Russell Ranch
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Empire Ranch Road	Lots 88-89	27,100	85		15	2	1	45	390	
2	Empire Ranch Road	Townhomes	25,000	85		15	2	1	45	285	
3	Empire Ranch Road	Lots 164-184, 261-265	24,200	85		15	2	1	45	115	
4	Empire Ranch Road	Lots 1-13, 144-159	24,200	85		15	2	1	45	300	
5	Eaton Valley Parkway	West of "C" Drive	4,600	85		15	2	1	45	120	
6	Eaton Valley Parkway	"C" Drive to "D" Drive	800	85		15	2	1	45	105	
7	Eaton Valley Parkway	"D" Drive to Placerville Road	700	85		15	2	1	45	105	
8	White Rock Road	Lot 184	30,600	85		15	2	1	45	120	
9	White Rock Road	Lots 185, 193-194, 213-214, 243-244	30,600	85		15	2	1	45	210	
10	Placerville Road	Lots 4-24, 216-246	12,400	85		15	2	1	45	175	
11	Highway 50	Lots 100-137	115,830	81		19	2	4	60	200	-2

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2014-150 Russell Ranch
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	Empire Ranch Road	Lots 88-89	57	48	50	58
2	Empire Ranch Road	Townhomes	59	50	52	60
3	Empire Ranch Road	Lots 164-184, 261-265	64	56	57	66
4	Empire Ranch Road	Lots 1-13, 144-159	58	50	51	59
5	Eaton Valley Parkway	West of "C" Drive	57	48	50	58
6	Eaton Valley Parkway	"C" Drive to "D" Drive	50	42	43	51
7	Eaton Valley Parkway	"D" Drive to Placerville Road	50	41	42	51
8	White Rock Road	Lot 184	65	57	58	66
9	White Rock Road	Lots 185, 193-194, 213-214, 243-244	62	53	54	63
10	Placerville Road	Lots 4-24, 216-246	59	50	52	60
11	Highway 50	Lots 100-137	70	60	66	72

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FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2014-150 Russell Ranch
Description Cumulative Plus Project
Roadway Name: Empire Ranch Road
Location(s): 3

Noise Level Data:

Year: Cumulative Plus Project
Auto L_{dn}, dB: 64
Medium Truck L_{dn}, dB: 56
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: Lots 164-184, 261-265
Centerline to Barrier Distance (C_1): 90
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	L_{dn}, dB Medium Trucks	L_{dn}, dB Heavy Trucks	L_{dn}, dB Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	**6**	**58**	**50**	**52**	**60**	**Yes**	**Yes**	**Yes**
7	7	58	49	52	**59**	Yes	Yes	Yes
8	8	56	48	51	**58**	Yes	Yes	Yes
9	9	55	47	50	**57**	Yes	Yes	Yes
10	10	54	46	49	**56**	Yes	Yes	Yes
11	11	54	46	48	**55**	Yes	Yes	Yes
12	12	53	45	47	**54**	Yes	Yes	Yes
13	13	52	44	46	**54**	Yes	Yes	Yes
14	14	52	43	46	**53**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2014-150 Russell Ranch
Description Cumulative Plus Project
Roadway Name: White Rock Road
Location(s): 8

Noise Level Data:

Year: Cumulative Plus Project
Auto L_{dn}, dB: 65
Medium Truck L_{dn}, dB: 57
Heavy Truck L_{dn}, dB: 58

Site Geometry:

Receiver Description: Lot 184
Centerline to Barrier Distance (C_1): 95
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	51	53	**61**	Yes	Yes	Yes
7	**7**	**58**	**50**	**53**	**60**	**Yes**	**Yes**	**Yes**
8	8	57	49	52	**59**	Yes	Yes	Yes
9	9	56	48	51	**58**	Yes	Yes	Yes
10	10	55	47	50	**57**	Yes	Yes	Yes
11	11	54	46	49	**56**	Yes	Yes	Yes
12	12	54	45	48	**55**	Yes	Yes	Yes
13	13	53	45	47	**55**	Yes	Yes	Yes
14	14	52	44	47	**54**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2014-150 Russell Ranch
Description Cumulative Plus Project
Roadway Name: White Rock Road
Location(s): 9

Noise Level Data:

Year: Cumulative Plus Project
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 54

Site Geometry:

Receiver Description: Lots 185, 193-194, 213-214, 243-244
Centerline to Barrier Distance (C_1): 185
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	L_{dn}, dB Medium Trucks	L_{dn}, dB Heavy Trucks	L_{dn}, dB Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	**6**	**56**	**47**	**49**	**57**	**Yes**	**Yes**	**Yes**
7	7	55	47	49	**57**	Yes	Yes	Yes
8	8	54	46	48	**56**	Yes	Yes	Yes
9	9	53	45	47	**55**	Yes	Yes	Yes
10	10	52	44	46	**54**	Yes	Yes	Yes
11	11	51	43	45	**53**	Yes	Yes	Yes
12	12	51	42	44	**52**	Yes	Yes	Yes
13	13	50	42	44	**51**	Yes	Yes	Yes
14	14	49	41	43	**51**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2014-150
Description: Russell Ranch - Highway 50 24-hour Calibration
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	adway Na	Segment Description	ADT	Day % ⁄e	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Hwy 50	Existing - Project Site (Measured 73 dB)	101,000	81	19	3	5	60	150	-2

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2014-150
Description: Russell Ranch - Highway 50 24-hour Calibration
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Hwy 50	Existing - Project Site (Measured 73 dB)	71	63	69	73

Appendix E - Railroad Data

Project: Russell Ranch EIR
Railroad Line: PSVRR
Location: Monitoring Site ST-1 - White Rock Road & Placerville Road

Date:		
Measured SEL:	95	dBA
# Trains / day:	13	
Neq:	13	Daytime Only Operations
Ldn:	57	dBA
Ref. Distance:	75	feet
60 dB Contour:	45	feet
65 dB Contour:	21	feet
70 dB Contour:	10	feet

Photo of PSVRR crossing at White Rock Road and Placerville Road

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