

10 REPORT PREPARERS AND CONTRIBUTORS

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**RIVERSIDE REGIONAL WATER QUALITY CONTROL PLANT
LEVEE REHABILITATION PROJECT**
Initial Study and Mitigated Negative Declaration (IS/MND)

APPENDIX 1: CALEEMOD EMISSIONS CALCULATIONS

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

Riverside RWQCP Levee Rehab

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	180.10	1000sqft	4.13	180,100.00	0
Other Asphalt Surfaces	28.86	1000sqft	0.66	28,863.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2018
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MW hr)	1325.65	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

Project Characteristics -

Land Use -

Construction Phase - Project Specific Schedule

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Trips and VMT - On-site stockpile within 1/4 mile

Grading - On-site stockpile

Site prep, Acres graded = total acres =4.1

Grading, Acres graded = total acres * two passes =8.2

Architectural Coating -

Construction Off-road Equipment Mitigation - As required by AQMD Rule 403

Area Mitigation -

Demolition -

Vehicle Trips -

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	100	0
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	7.00
tblConstructionPhase	NumDays	8.00	30.00
tblConstructionPhase	NumDays	18.00	24.00
tblConstructionPhase	PhaseEndDate	5/31/2017	6/9/2017
tblConstructionPhase	PhaseEndDate	7/21/2017	7/28/2017
tblConstructionPhase	PhaseEndDate	6/9/2017	6/16/2017
tblConstructionPhase	PhaseStartDate	6/10/2017	6/19/2017
tblConstructionPhase	PhaseStartDate	7/22/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	6/1/2017	6/12/2017
tblGrading	MaterialExported	0.00	24,000.00
tblTripsAndVMT	HaulingTripLength	20.00	0.25
tblTripsAndVMT	HaulingTripNumber	0.00	2,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	145.00

2.0 Emissions Summary

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1623	1.6551	1.0601	2.1400e-003	0.0427	0.0815	0.1242	7.8300e-003	0.0766	0.0844	0.0000	194.8442	194.8442	0.0459	0.0000	195.9909
Maximum	0.1623	1.6551	1.0601	2.1400e-003	0.0427	0.0815	0.1242	7.8300e-003	0.0766	0.0844	0.0000	194.8442	194.8442	0.0459	0.0000	195.9909

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	0.1623	1.5933	1.0601	2.1400e-003	0.0271	0.0815	0.1086	5.6100e-003	0.0766	0.0822	0.0000	194.8440	194.8440	0.0459	0.0000	195.9907
Maximum	0.1623	1.5933	1.0601	2.1400e-003	0.0271	0.0815	0.1086	5.6100e-003	0.0766	0.0822	0.0000	194.8440	194.8440	0.0459	0.0000	195.9907

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	3.73	0.00	0.00	36.70	0.00	12.61	28.35	0.00	2.62	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2017	8-31-2017	1.6972	1.6397
		Highest	1.6972	1.6397

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	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003
Energy	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	1,432.6985	1,432.6985	0.0305	0.0108	1,436.6808
Mobile	0.4312	3.6810	6.0697	0.0221	1.6034	0.0262	1.6296	0.4297	0.0248	0.4545	0.0000	2,040.7654	2,040.7654	0.1043	0.0000	2,043.3720
Waste						0.0000	0.0000		0.0000	0.0000	45.3319	0.0000	45.3319	2.6790	0.0000	112.3080
Water						0.0000	0.0000		0.0000	0.0000	13.2130	326.0877	339.3007	1.3642	0.0335	383.3957
Total	1.1992	3.9685	6.3139	0.0238	1.6034	0.0481	1.6515	0.4297	0.0467	0.4764	58.5450	3,799.5567	3,858.1017	4.1780	0.0443	3,975.7619

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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	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003
Energy	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	1,432.6985	1,432.6985	0.0305	0.0108	1,436.6808
Mobile	0.4312	3.6810	6.0697	0.0221	1.6034	0.0262	1.6296	0.4297	0.0248	0.4545	0.0000	2,040.7654	2,040.7654	0.1043	0.0000	2,043.3720
Waste						0.0000	0.0000		0.0000	0.0000	45.3319	0.0000	45.3319	2.6790	0.0000	112.3080
Water						0.0000	0.0000		0.0000	0.0000	13.2130	326.0877	339.3007	1.3642	0.0335	383.3957
Total	1.1992	3.9685	6.3139	0.0238	1.6034	0.0481	1.6515	0.4297	0.0467	0.4764	58.5450	3,799.5567	3,858.1017	4.1780	0.0443	3,975.7619

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

3.0 Construction Detail**Construction Phase**

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	6/9/2017	5	7	
2	Site Preparation	Site Preparation	6/12/2017	6/16/2017	5	5	
3	Grading	Grading	6/19/2017	7/28/2017	5	30	
4	Building Construction	Building Construction	7/22/2017	7/21/2017	5	0	
5	Paving	Paving	7/31/2017	8/31/2017	5	24	
6	Architectural Coating	Architectural Coating	9/1/2017	8/31/2017	5	0	

Acres of Grading (Site Preparation Phase): 4.1

Acres of Grading (Grading Phase): 8.2

Acres of Paving: 0.66

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 270,150; Non-Residential Outdoor: 90,050; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	7.00	231	0.29
Demolition	Dumpers/Tenders	4	8.00	16	0.38
Demolition	Excavators	2	8.00	158	0.38
Demolition	Generator Sets	2	7.00	84	0.74
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Site Preparation	Cranes	1	7.00	231	0.29
Site Preparation	Dumpers/Tenders	4	8.00	16	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Generator Sets	2	7.00	84	0.74

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Site Preparation	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Grading	Cranes	1	7.00	231	0.29
Grading	Dumpers/Tenders	4	8.00	16	0.38
Grading	Excavators	2	8.00	158	0.38
Grading	Generator Sets	2	7.00	84	0.74
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Dumpers/Tenders	4	8.00	16	0.38
Building Construction	Excavators	2	8.00	158	0.38
Building Construction	Generator Sets	2	7.00	84	0.74
Building Construction	Off-Highway Trucks	1	8.00	402	0.38
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Paving	Cranes	1	7.00	231	0.29
Paving	Dumpers/Tenders	4	8.00	16	0.38
Paving	Excavators	2	8.00	158	0.38
Paving	Generator Sets	2	7.00	84	0.74
Paving	Off-Highway Trucks	1	8.00	402	0.38
Paving	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Architectural Coating	Cranes	1	7.00	231	0.29
Architectural Coating	Dumpers/Tenders	4	8.00	16	0.38
Architectural Coating	Excavators	2	8.00	158	0.38
Architectural Coating	Generator Sets	2	7.00	84	0.74
Architectural Coating	Off-Highway Trucks	1	8.00	402	0.38
Architectural Coating	Tractors/Loaders/Backhoes	4	7.00	97	0.37

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	14	35.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	14	35.00	0.00	2,400.00	14.70	6.90	0.25	LD_Mix	HDT_Mix	HHDT
Building Construction	14	76.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	35.00	0.00	145.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	14	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 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					0.0205	0.0000	0.0205	3.1000e-003	0.0000	3.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1573	0.1044	1.9000e-004		8.6100e-003	8.6100e-003		8.0900e-003	8.0900e-003	0.0000	17.0538	17.0538	4.2900e-003	0.0000	17.1611
Total	0.0160	0.1573	0.1044	1.9000e-004	0.0205	8.6100e-003	0.0291	3.1000e-003	8.0900e-003	0.0112	0.0000	17.0538	17.0538	4.2900e-003	0.0000	17.1611

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3.2 Demolition - 2017**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.8000e-004	5.9100e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2351	1.2351	4.0000e-005	0.0000	1.2361
Total	7.4000e-004	5.8000e-004	5.9100e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2351	1.2351	4.0000e-005	0.0000	1.2361

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					9.2000e-003	0.0000	9.2000e-003	1.3900e-003	0.0000	1.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1507	0.1044	1.9000e-004		8.6100e-003	8.6100e-003		8.0900e-003	8.0900e-003	0.0000	17.0538	17.0538	4.2900e-003	0.0000	17.1611
Total	0.0160	0.1507	0.1044	1.9000e-004	9.2000e-003	8.6100e-003	0.0178	1.3900e-003	8.0900e-003	9.4800e-003	0.0000	17.0538	17.0538	4.2900e-003	0.0000	17.1611

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3.2 Demolition - 2017**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.8000e-004	5.9100e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2351	1.2351	4.0000e-005	0.0000	1.2361
Total	7.4000e-004	5.8000e-004	5.9100e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2351	1.2351	4.0000e-005	0.0000	1.2361

3.3 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					2.1700e-003	0.0000	2.1700e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1123	0.0746	1.3000e-004		6.1500e-003	6.1500e-003		5.7800e-003	5.7800e-003	0.0000	12.1813	12.1813	3.0700e-003	0.0000	12.2580
Total	0.0114	0.1123	0.0746	1.3000e-004	2.1700e-003	6.1500e-003	8.3200e-003	2.3000e-004	5.7800e-003	6.0100e-003	0.0000	12.1813	12.1813	3.0700e-003	0.0000	12.2580

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3.3 Site Preparation - 2017**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.1000e-004	4.2200e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8822	0.8822	3.0000e-005	0.0000	0.8829
Total	5.3000e-004	4.1000e-004	4.2200e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8822	0.8822	3.0000e-005	0.0000	0.8829

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					9.8000e-004	0.0000	9.8000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1077	0.0746	1.3000e-004		6.1500e-003	6.1500e-003		5.7800e-003	5.7800e-003	0.0000	12.1813	12.1813	3.0700e-003	0.0000	12.2579
Total	0.0114	0.1077	0.0746	1.3000e-004	9.8000e-004	6.1500e-003	7.1300e-003	1.1000e-004	5.7800e-003	5.8900e-003	0.0000	12.1813	12.1813	3.0700e-003	0.0000	12.2579

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3.3 Site Preparation - 2017**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.1000e-004	4.2200e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8822	0.8822	3.0000e-005	0.0000	0.8829
Total	5.3000e-004	4.1000e-004	4.2200e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8822	0.8822	3.0000e-005	0.0000	0.8829

3.4 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					5.8700e-003	0.0000	5.8700e-003	7.0000e-004	0.0000	7.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0685	0.6740	0.4475	8.1000e-004		0.0369	0.0369		0.0347	0.0347	0.0000	73.0878	73.0878	0.0184	0.0000	73.5477
Total	0.0685	0.6740	0.4475	8.1000e-004	5.8700e-003	0.0369	0.0428	7.0000e-004	0.0347	0.0354	0.0000	73.0878	73.0878	0.0184	0.0000	73.5477

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3.4 Grading - 2017**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	3.3600e-003	0.1446	0.0172	1.8000e-004	2.8000e-004	1.6000e-004	4.4000e-004	8.0000e-005	1.5000e-004	2.3000e-004	0.0000	17.0080	17.0080	4.6400e-003	0.0000	17.1240
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1700e-003	2.4700e-003	0.0253	6.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	5.2933	5.2933	1.7000e-004	0.0000	5.2977
Total	6.5300e-003	0.1471	0.0425	2.4000e-004	6.0500e-003	2.0000e-004	6.2500e-003	1.6100e-003	1.8000e-004	1.8000e-003	0.0000	22.3013	22.3013	4.8100e-003	0.0000	22.4217

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					2.6400e-003	0.0000	2.6400e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0685	0.6460	0.4475	8.1000e-004		0.0369	0.0369		0.0347	0.0347	0.0000	73.0877	73.0877	0.0184	0.0000	73.5476
Total	0.0685	0.6460	0.4475	8.1000e-004	2.6400e-003	0.0369	0.0395	3.1000e-004	0.0347	0.0350	0.0000	73.0877	73.0877	0.0184	0.0000	73.5476

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3.4 Grading - 2017

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	3.3600e-003	0.1446	0.0172	1.8000e-004	2.8000e-004	1.6000e-004	4.4000e-004	8.0000e-005	1.5000e-004	2.3000e-004	0.0000	17.0080	17.0080	4.6400e-003	0.0000	17.1240
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1700e-003	2.4700e-003	0.0253	6.0000e-005	5.7700e-003	4.0000e-005	5.8100e-003	1.5300e-003	3.0000e-005	1.5700e-003	0.0000	5.2933	5.2933	1.7000e-004	0.0000	5.2977
Total	6.5300e-003	0.1471	0.0425	2.4000e-004	6.0500e-003	2.0000e-004	6.2500e-003	1.6100e-003	1.8000e-004	1.8000e-003	0.0000	22.3013	22.3013	4.8100e-003	0.0000	22.4217

3.5 Building Construction - 2017

Unmitigated Construction On-Site

[illegible]

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3.5 Building Construction - 2017

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

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3.5 Building Construction - 2017**Mitigated Construction Off-Site**

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

3.6 Paving - 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	0.0548	0.5392	0.3580	6.5000e-004		0.0295	0.0295		0.0277	0.0277	0.0000	58.4703	58.4703	0.0147	0.0000	58.8381
Paving	8.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0556	0.5392	0.3580	6.5000e-004		0.0295	0.0295		0.0277	0.0277	0.0000	58.4703	58.4703	0.0147	0.0000	58.8381

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3.6 Paving - 2017**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	5.1000e-004	0.0221	2.7500e-003	6.0000e-005	1.2500e-003	1.2000e-004	1.3700e-003	3.4000e-004	1.1000e-004	4.5000e-004	0.0000	5.3978	5.3978	3.7000e-004	0.0000	5.4072
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	1.9700e-003	0.0203	5.0000e-005	4.6200e-003	3.0000e-005	4.6500e-003	1.2300e-003	3.0000e-005	1.2500e-003	0.0000	4.2346	4.2346	1.4000e-004	0.0000	4.2381
Total	3.0500e-003	0.0241	0.0230	1.1000e-004	5.8700e-003	1.5000e-004	6.0200e-003	1.5700e-003	1.4000e-004	1.7000e-003	0.0000	9.6324	9.6324	5.1000e-004	0.0000	9.6453

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	0.0548	0.5168	0.3580	6.5000e-004		0.0295	0.0295		0.0277	0.0277	0.0000	58.4702	58.4702	0.0147	0.0000	58.8381
Paving	8.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0556	0.5168	0.3580	6.5000e-004		0.0295	0.0295		0.0277	0.0277	0.0000	58.4702	58.4702	0.0147	0.0000	58.8381

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3.6 Paving - 2017

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	5.1000e-004	0.0221	2.7500e-003	6.0000e-005	1.2500e-003	1.2000e-004	1.3700e-003	3.4000e-004	1.1000e-004	4.5000e-004	0.0000	5.3978	5.3978	3.7000e-004	0.0000	5.4072
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	1.9700e-003	0.0203	5.0000e-005	4.6200e-003	3.0000e-005	4.6500e-003	1.2300e-003	3.0000e-005	1.2500e-003	0.0000	4.2346	4.2346	1.4000e-004	0.0000	4.2381
Total	3.0500e-003	0.0241	0.0230	1.1000e-004	5.8700e-003	1.5000e-004	6.0200e-003	1.5700e-003	1.4000e-004	1.7000e-003	0.0000	9.6324	9.6324	5.1000e-004	0.0000	9.6453

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

[illegible]

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3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

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3.7 Architectural Coating - 2017**Mitigated Construction Off-Site**

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

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

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	ROG	NOx	CO	SO2	Fugitive 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	0.4312	3.6810	6.0697	0.0221	1.6034	0.0262	1.6296	0.4297	0.0248	0.4545	0.0000	2,040.765 4	2,040.765 4	0.1043	0.0000	2,043.372 0
Unmitigated	0.4312	3.6810	6.0697	0.0221	1.6034	0.0262	1.6296	0.4297	0.0248	0.4545	0.0000	2,040.765 4	2,040.765 4	0.1043	0.0000	2,043.372 0

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1,255.30	237.73	122.47	4,198,440	4,198,440
Total	1,255.30	237.73	122.47	4,198,440	4,198,440

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Other Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

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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	1,119.7701	1,119.7701	0.0245	5.0700e-003	1,121.8928
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,119.7701	1,119.7701	0.0245	5.0700e-003	1,121.8928
NaturalGas Mitigated	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879
NaturalGas Unmitigated	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879

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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					
General Light Industry	5.86406e+006	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879
Total		0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879

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					
General Light Industry	5.86406e+006	0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879
Total		0.0316	0.2875	0.2415	1.7200e-003		0.0219	0.0219		0.0219	0.0219	0.0000	312.9284	312.9284	6.0000e-003	5.7400e-003	314.7879

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.86223e+006	1,119.7701	0.0245	5.0700e-003	1,121.8928
Total		1,119.7701	0.0245	5.0700e-003	1,121.8928

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.86223e+006	1,119.7701	0.0245	5.0700e-003	1,121.8928
Total		1,119.7701	0.0245	5.0700e-003	1,121.8928

6.0 Area Detail**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive 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	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003
Unmitigated	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003
Total	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003

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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	0.0835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003
Total	0.7364	3.0000e-005	2.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1900e-003	5.1900e-003	1.0000e-005	0.0000	5.5400e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	339.3007	1.3642	0.0335	383.3957
Unmitigated	339.3007	1.3642	0.0335	383.3957

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	41.6481 / 0	339.3007	1.3642	0.0335	383.3957
Total		339.3007	1.3642	0.0335	383.3957

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	41.6481 / 0	339.3007	1.3642	0.0335	383.3957
Total		339.3007	1.3642	0.0335	383.3957

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

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	45.3319	2.6790	0.0000	112.3080
Unmitigated	45.3319	2.6790	0.0000	112.3080

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	223.32	45.3319	2.6790	0.0000	112.3080
Total		45.3319	2.6790	0.0000	112.3080

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	223.32	45.3319	2.6790	0.0000	112.3080
Total		45.3319	2.6790	0.0000	112.3080

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Riverside RWQCP Levee Rehab - Riverside-South Coast County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Riverside RWQCP Levee Rehab

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	180.10	1000sqft	4.13	180,100.00	0
Other Asphalt Surfaces	28.86	1000sqft	0.66	28,863.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2018
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MW hr)	1325.65	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Project Characteristics -

Land Use -

Construction Phase - Project Specific Schedule

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Off-road Equipment - Project Specific Equipent List

Trips and VMT - On-site stockpile within 1/4 mile

Grading - On-site stockpile

Site prep, Acres graded = total acres =4.1

Grading, Acres graded = total acres * two passes =8.2

Architectural Coating -

Construction Off-road Equipment Mitigation - As required by AQMD Rule 403

Area Mitigation -

Demolition -

Vehicle Trips -

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	100	0
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	7.00
tblConstructionPhase	NumDays	8.00	30.00
tblConstructionPhase	NumDays	18.00	24.00
tblConstructionPhase	PhaseEndDate	5/31/2017	6/9/2017
tblConstructionPhase	PhaseEndDate	7/21/2017	7/28/2017
tblConstructionPhase	PhaseEndDate	6/9/2017	6/16/2017
tblConstructionPhase	PhaseStartDate	6/10/2017	6/19/2017
tblConstructionPhase	PhaseStartDate	7/22/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	6/1/2017	6/12/2017
tblGrading	MaterialExported	0.00	24,000.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	0.25
tblTripsAndVMT	HaulingTripNumber	0.00	95.00
tblTripsAndVMT	HaulingTripNumber	0.00	2,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	145.00

2.0 Emissions Summary

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	5.0103	54.8942	32.7313	0.0707	6.2949	4.9634	8.7633	1.0050	4.6636	3.3240	0.0000	7,110.2815	7,110.2815	1.6895	0.0000	7,152.5190
Maximum	5.0103	54.8942	32.7313	0.0707	6.2949	4.9634	8.7633	1.0050	4.6636	3.3240	0.0000	7,110.2815	7,110.2815	1.6895	0.0000	7,152.5190

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	5.0103	53.0232	32.7313	0.0707	3.0807	4.9634	5.5490	0.5183	4.6636	2.8374	0.0000	7,110.2815	7,110.2815	1.6895	0.0000	7,152.5190
Maximum	5.0103	53.0232	32.7313	0.0707	3.0807	4.9634	5.5490	0.5183	4.6636	2.8374	0.0000	7,110.2815	7,110.2815	1.6895	0.0000	7,152.5190

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	3.41	0.00	0.00	51.06	0.00	36.68	48.43	0.00	14.64	0.00	0.00	0.00	0.00	0.00	0.00

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489
Energy	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387
Mobile	3.6351	25.9963	49.9738	0.1708	11.8580	0.1902	12.0482	3.1737	0.1800	3.3537		17,359.4331	17,359.4331	0.8471		17,380.6099
Total	7.8441	27.5716	51.3185	0.1803	11.8580	0.3100	12.1680	3.1737	0.2998	3.4735		19,249.5855	19,249.5855	0.8834	0.0347	19,281.9974

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	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489
Energy	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387
Mobile	3.6351	25.9963	49.9738	0.1708	11.8580	0.1902	12.0482	3.1737	0.1800	3.3537		17,359.4331	17,359.4331	0.8471		17,380.6099
Total	7.8441	27.5716	51.3185	0.1803	11.8580	0.3100	12.1680	3.1737	0.2998	3.4735		19,249.5855	19,249.5855	0.8834	0.0347	19,281.9974

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	6/9/2017	5	7	
2	Site Preparation	Site Preparation	6/12/2017	6/16/2017	5	5	
3	Grading	Grading	6/19/2017	7/28/2017	5	30	
4	Building Construction	Building Construction	7/22/2017	7/21/2017	5	0	
5	Paving	Paving	7/31/2017	8/31/2017	5	24	
6	Architectural Coating	Architectural Coating	9/1/2017	8/31/2017	5	0	

Acres of Grading (Site Preparation Phase): 4.1

Acres of Grading (Grading Phase): 8.2

Acres of Paving: 0.66

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 270,150; Non-Residential Outdoor: 90,050; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	7.00	231	0.29
Demolition	Dumpers/Tenders	4	8.00	16	0.38
Demolition	Excavators	2	8.00	158	0.38
Demolition	Generator Sets	2	7.00	84	0.74

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Demolition	Off-Highway Trucks	1	8.00	402	0.38
Demolition	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Site Preparation	Cranes	1	7.00	231	0.29
Site Preparation	Dumpers/Tenders	4	8.00	16	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Generator Sets	2	7.00	84	0.74
Site Preparation	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Grading	Cranes	1	7.00	231	0.29
Grading	Dumpers/Tenders	4	8.00	16	0.38
Grading	Excavators	2	8.00	158	0.38
Grading	Generator Sets	2	7.00	84	0.74
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Dumpers/Tenders	4	8.00	16	0.38
Building Construction	Excavators	2	8.00	158	0.38
Building Construction	Generator Sets	2	7.00	84	0.74
Building Construction	Off-Highway Trucks	1	8.00	402	0.38
Building Construction	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Paving	Cranes	1	7.00	231	0.29
Paving	Dumpers/Tenders	4	8.00	16	0.38
Paving	Excavators	2	8.00	158	0.38
Paving	Generator Sets	2	7.00	84	0.74
Paving	Off-Highway Trucks	1	8.00	402	0.38
Paving	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Architectural Coating	Cranes	1	7.00	231	0.29

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Architectural Coating	Dumpers/Tenders	4	8.00	16	0.38
Architectural Coating	Excavators	2	8.00	158	0.38
Architectural Coating	Generator Sets	2	7.00	84	0.74
Architectural Coating	Off-Highway Trucks	1	8.00	402	0.38
Architectural Coating	Tractors/Loaders/Backhoes	4	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	14	35.00	0.00	95.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	14	35.00	0.00	2,400.00	14.70	6.90	0.25	LD_Mix	HDT_Mix	HHDT
Building Construction	14	76.00	30.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	35.00	0.00	145.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	14	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.2 Demolition - 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					5.8441	0.0000	5.8441	0.8849	0.0000	0.8849			0.0000			0.0000
Off-Road	4.5635	44.9360	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106		5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	44.9360	29.8329	0.0540	5.8441	2.4594	8.3035	0.8849	2.3106	3.1954		5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0500	2.2329	0.2357	4.1600e-003	0.0596	6.4700e-003	0.0661	0.0164	6.1900e-003	0.0225		440.2374	440.2374	0.0596		441.7269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2841	2.3863	2.2004	8.4100e-003	0.4508	8.9800e-003	0.4598	0.1201	8.5000e-003	0.1286		862.8528	862.8528	0.0738		864.6970

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.2 Demolition - 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					2.6299	0.0000	2.6299	0.3982	0.0000	0.3982			0.0000			0.0000
Off-Road	4.5635	43.0650	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	43.0650	29.8329	0.0540	2.6299	2.4594	5.0892	0.3982	2.3106	2.7087	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0500	2.2329	0.2357	4.1600e-003	0.0596	6.4700e-003	0.0661	0.0164	6.1900e-003	0.0225		440.2374	440.2374	0.0596		441.7269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2841	2.3863	2.2004	8.4100e-003	0.4508	8.9800e-003	0.4598	0.1201	8.5000e-003	0.1286		862.8528	862.8528	0.0738		864.6970

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.3 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					0.8696	0.0000	0.8696	0.0939	0.0000	0.0939			0.0000			0.0000
Off-Road	4.5635	44.9360	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106		5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	44.9360	29.8329	0.0540	0.8696	2.4594	3.3290	0.0939	2.3106	2.4045		5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.3 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					0.3913	0.0000	0.3913	0.0423	0.0000	0.0423			0.0000			0.0000
Off-Road	4.5635	43.0650	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	43.0650	29.8329	0.0540	0.3913	2.4594	2.8507	0.0423	2.3106	2.3528	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.4 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					0.3912	0.0000	0.3912	0.0466	0.0000	0.0466			0.0000			0.0000
Off-Road	4.5635	44.9360	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106		5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	44.9360	29.8329	0.0540	0.3912	2.4594	2.8506	0.0466	2.3106	2.3572		5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2128	9.8047	0.9337	0.0125	0.0192	9.8200e-003	0.0290	5.4100e-003	9.3900e-003	0.0148		1,316.631 1	1,316.631 1	0.3236		1,324.719 8
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.4468	9.9581	2.8984	0.0167	0.4104	0.0123	0.4227	0.1092	0.0117	0.1209		1,739.246 4	1,739.246 4	0.3377		1,747.689 8

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.4 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					0.1760	0.0000	0.1760	0.0210	0.0000	0.0210			0.0000			0.0000
Off-Road	4.5635	43.0650	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Total	4.5635	43.0650	29.8329	0.0540	0.1760	2.4594	2.6354	0.0210	2.3106	2.3315	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2128	9.8047	0.9337	0.0125	0.0192	9.8200e-003	0.0290	5.4100e-003	9.3900e-003	0.0148		1,316.631 1	1,316.631 1	0.3236		1,324.719 8
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.4468	9.9581	2.8984	0.0167	0.4104	0.0123	0.4227	0.1092	0.0117	0.1209		1,739.246 4	1,739.246 4	0.3377		1,747.689 8

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.5 Building Construction - 2017

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.5 Building Construction - 2017

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.6 Paving - 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	4.5635	44.9360	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106		5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Paving	0.0721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	4.6356	44.9360	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106		5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0419	1.7947	0.2136	4.7300e-003	0.1057	9.6300e-003	0.1154	0.0290	9.2100e-003	0.0382		500.8771	500.8771	0.0331		501.7051
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2759	1.9481	2.1783	8.9800e-003	0.4969	0.0121	0.5091	0.1327	0.0115	0.1443		923.4924	923.4924	0.0473		924.6751

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.6 Paving - 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	4.5635	43.0650	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2
Paving	0.0721					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	4.6356	43.0650	29.8329	0.0540		2.4594	2.4594		2.3106	2.3106	0.0000	5,371.035 1	5,371.035 1	1.3518		5,404.829 2

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0419	1.7947	0.2136	4.7300e-003	0.1057	9.6300e-003	0.1154	0.0290	9.2100e-003	0.0382		500.8771	500.8771	0.0331		501.7051
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2340	0.1534	1.9647	4.2500e-003	0.3912	2.5100e-003	0.3937	0.1038	2.3100e-003	0.1061		422.6154	422.6154	0.0142		422.9701
Total	0.2759	1.9481	2.1783	8.9800e-003	0.4969	0.0121	0.5091	0.1327	0.0115	0.1443		923.4924	923.4924	0.0473		924.6751

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

3.7 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.6351	25.9963	49.9738	0.1708	11.8580	0.1902	12.0482	3.1737	0.1800	3.3537		17,359.43 31	17,359.43 31	0.8471		17,380.60 99
Unmitigated	3.6351	25.9963	49.9738	0.1708	11.8580	0.1902	12.0482	3.1737	0.1800	3.3537		17,359.43 31	17,359.43 31	0.8471		17,380.60 99

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1,255.30	237.73	122.47	4,198,440	4,198,440
Total	1,255.30	237.73	122.47	4,198,440	4,198,440

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Other Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

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	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387
NaturalGas Unmitigated	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

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

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	16065.9	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387
Total		0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387

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					
General Light Industry	16.0659	0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387
Total		0.1733	1.5751	1.3231	9.4500e-003		0.1197	0.1197		0.1197	0.1197		1,890.1067	1,890.1067	0.0362	0.0347	1,901.3387

6.0 Area Detail**6.1 Mitigation Measures Area**

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489
Unmitigated	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489

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	0.4574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0700e-003	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489
Total	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5762					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0700e-003	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489
Total	4.0357	2.0000e-004	0.0216	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0457	0.0457	1.3000e-004		0.0489

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

Riverside RWQCP Levee Rehab - Riverside-South Coast County, Summer

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

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

Equipment Type	Number
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11.0 Vegetation

**RIVERSIDE REGIONAL WATER QUALITY CONTROL PLANT
LEVEE REHABILITATION PROJECT**

Initial Study and Mitigated Negative Declaration (IS/MND)

**APPENDIX 2: HYDROLOGY AND HYDRAULICS TECHNICAL
MEMORANDUM**

Channel Hydraulics for Riverside Regional Water Quality Control Plant Levee Rehabilitation

The Riverside Regional Water Quality Control Plant (RWQCP) Levee Rehabilitation reach adjacent to the Santa Ana River is divided into four reaches (Figure 1) for comparing the pre- and post-project conditions as follows:

- Upper Restriction Reach
- Middle Transition Reach
- Lower Expansion Reach
- Downstream of Van Buren Boulevard

Channel hydraulics (i.e., water surface elevation, channel top width, and channel average flow velocity) for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events were analyzed for the four reaches mentioned. Table 1 lists the water surface elevations of the 2-, 5-, 10-, and 25-year storm events under the pre- and post-project conditions and shows no differences in the computed water surface elevations between the pre- and post-project conditions. Therefore, the existing RWQCP levee is able to convey the more frequent storm events (i.e., 2-, 5-, 10-, and 25-year storm events).

Table 1. Computed Water Surface Elevations for 2-, 5-, 10-, and 25-Year Storm Events

HEC-RAS Station ID	Channel Thalweg (ft)	Top of Levee ¹ (ft)		Water Surface Elevation (ft)							
				2-year (Peak Flow = 1,700 cfs)		5-year (Peak Flow = 8,200 cfs)		10-year (Peak Flow = 19,230 cfs)		25-year (Peak Flow = 47,570 cfs)	
		E ²	P ³	E ²	P ³	E ²	P ³	E ²	P ³	E ²	P ³
Upper Restriction Reach											
23 ⁴	688.00	-	-	691.70	691.70	694.56	694.56	697.81	697.83	703.62	703.66
22	687.00	708.00	719.71	691.08	691.08	694.03	694.03	697.22	697.25	702.81	702.87
21	687.00	706.00	717.90	690.17	690.17	693.32	693.32	696.46	696.50	701.76	701.83
20	685.00	705.00	716.53	689.37	689.37	692.85	692.86	695.93	695.96	701.04	701.10
19	685.00	705.00	715.04	688.60	688.60	691.78	691.78	694.58	694.66	699.44	699.57
18	684.00	703.00	711.16	687.67	687.67	691.10	691.10	693.79	693.78	698.28	698.26
Middle Transition Reach											
17	683.00	703.00	710.35	686.79	686.79	690.12	690.12	692.34	692.34	696.36	696.36
16	682.00	702.00	705.30	685.91	685.91	689.50	689.50	691.30	691.30	693.95	693.96
15	681.00	702.00	701.93	685.11	685.11	688.35	688.35	689.94	689.94	692.21	692.21
14	681.00	702.00	702.14	684.39	684.39	687.21	687.21	688.83	688.83	691.56	691.56
Lower Expansion Reach											
13	678.00	701.00	701.74	683.94	683.94	686.66	686.66	688.35	688.35	691.17	691.17
12	678.00	702.00	701.14	682.82	682.82	686.10	686.10	687.73	687.73	690.51	690.51
11	678.00	702.00	700.30	682.24	682.24	685.61	685.61	687.15	687.15	689.86	689.86
10	676.00	701.00	699.87	681.85	681.85	685.02	685.02	686.59	686.59	689.37	689.37
9 ⁴	674.00	-	-	680.67	680.67	684.36	684.36	686.00	686.00	688.55	688.55
Downstream of Van Buren Boulevard											
8	674.00	-	-	679.39	679.39	682.53	682.53	684.03	684.03	686.37	686.37
7	674.00	-	-	678.57	678.57	681.30	681.30	682.89	682.89	685.35	685.35

HEC-RAS Station ID	Channel Thalweg (ft)	Top of Levee ¹ (ft)		Water Surface Elevation (ft)							
				2-year (Peak Flow = 1,700 cfs)		5-year (Peak Flow = 8,200 cfs)		10-year (Peak Flow = 19,230 cfs)		25-year (Peak Flow = 47,570 cfs)	
		E ²	P ³	E ²	P ³	E ²	P ³	E ²	P ³	E ²	P ³
6	673.00	-	-	678.06	678.06	680.38	680.38	681.77	681.77	683.86	683.86
5	674.00	-	-	677.58	677.58	680.07	680.07	681.47	681.47	683.78	683.78

1. Existing conditions obtained from HEC-RAS sections; proposed conditions obtained from "Riverside Regional Water Quality Control Plant Levee Rehabilitation, 100% Design Report (Tetra 2016). 2. Existing conditions. 3. Proposed conditions. 4. Project levee reach is between Station ID 23 and Station ID 9.

Computed channel hydraulics for the 50- and 100-year storm events under pre- and post-project conditions are presented in Table 2 and Table 3, respectively. Table 2 shows that most of the upper restriction reach and most upstream of the middle transition reach under the pre-project conditions are overtopped by the 50-year storm event. Table 3 shows that all the upper restriction reach and upstream half of the middle transition reach under the pre-project conditions are overtopped by the 100-year storm event.

Table 2. Computed Water Surface Elevations for 50-Year Storm Event

HEC-RAS Station ID	Channel Thalweg (ft)	Top of Levee (ft)		50-year (Peak Flow = 83,000 cfs)					
				Water Surface Elevation (ft)		Channel Top Width (ft)		Average Flow Velocity (ft/sec)	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
41 ¹	704.00	-	-	718.76	718.75	842.26	842.26	9.7	9.7
Upper Restriction Reach									
23 ²	688.00	-	-	708.65	709.08	653.21	655.44	9.3	9.1
22	687.00	708.00	719.71	707.42 ³	707.95	525.76	533.53	12.4	12.0
21	687.00	706.00	717.90	706.07 ³	706.60	777.59	433.65	13.5	13.4
20	685.00	705.00	716.53	705.88 ³	705.62	881.26	431.10	13.1	14.9
19	685.00	705.00	715.04	705.76 ³	704.20	1060.98	491.42	12.5	17.1
18	684.00	703.00	711.16	703.34 ³	702.02	1136.39	424.87	11.3	18.0
Middle Transition Reach									
17	683.00	703.00	710.35	703.08 ³	700.95	1375.70	658.29	10.2	16.9
16	682.00	702.00	705.30	696.99	696.99	443.75	443.74	18.7	18.7
15	681.00	702.00	701.93	694.52	694.51	865.54	865.49	16.1	16.1
14	681.00	702.00	702.14	694.07	694.07	1192.19	1192.19	11.2	11.2
Lower Expansion Reach									
13	678.00	701.00	701.74	693.76	693.77	1323.27	1323.28	8.3	8.3
12	678.00	702.00	701.14	693.15	693.16	1440.14	1440.16	9.2	9.2
11	678.00	702.00	700.30	692.42	692.42	1401.51	1401.52	9.3	9.3
10	676.00	701.00	699.87	692.06	692.06	1338.13	1338.13	7.4	7.4
9 ²	674.00	-	-	690.94	690.94	2034.33	2034.33	9.3	9.3
Downstream of Van Buren Boulevard									
8	674.00	-	-	688.42	688.42	1718.45	1718.45	12.0	12.0
7	674.00	-	-	687.42	687.42	1640.23	1640.23	11.3	11.3

HEC-RAS Station ID	Channel Thalweg (ft)	Top of Levee (ft)		50-year (Peak Flow = 83,000 cfs)					
				Water Surface Elevation (ft)		Channel Top Width (ft)		Average Flow Velocity (ft/sec)	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
6	673.00	-	-	685.79	685.79	1665.26	1665.26	12.7	12.7
5	674.00	-	-	685.92	685.92	1675.17	1675.17	8.6	8.6
1. HEC-RAS Station ID 41 is approximately 0.97 miles upstream of Station ID 23. 2. Project levee reach is between Station ID 23 and Station ID 9. 3. Flow overtopping existing RWQCP levee.									

Table 3. Computed Water Surface Elevations for 100-Year Storm Event

HEC-RAS Station ID	Channel Thalweg (ft)	Top of Levee (ft)		50-year (Peak Flow = 144,300 cfs)					
				Water Surface Elevation (ft)		Channel Top Width (ft)		Average Flow Velocity (ft/sec)	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
50 ¹	720.00	-	-	732.02	732.08	4169.93	4172.16	6.9	6.9
Upper Restriction Reach									
23 ²	688.00	-	-	714.08	716.75	809.34	686.03	11.9	10.8
22	687.00	708.00	719.71	712.29	715.25	776.81	561.46	15.9	14.5
21	687.00	706.00	717.90	709.57	713.40	788.04	445.59	18.2	16.4
20	685.00	705.00	716.53	708.04	712.16	890.67	437.92	19.3	18.5
19	685.00	705.00	715.04	705.43	710.87	1058.54	513.68	22.3	20.2
18	684.00	703.00	711.16	705.54	706.71	1172.67	433.16	16.4	23.5
Middle Transition Reach									
17	683.00	703.00	710.35	705.02	707.08	1447.73	858.34	15.0	19.6
16	682.00	702.00	705.30	704.40	702.27	1424.28	594.49	12.6	21.4
15	681.00	702.00	701.93	698.13	698.14	978.54	978.57	18.7	18.7
14	681.00	702.00	702.14	697.61	697.60	1210.37	1210.36	13.7	13.7
Lower Expansion Reach									
13	678.00	701.00	701.74	697.46	697.46	1338.81	1338.81	10.3	10.3
12	678.00	702.00	701.14	696.94	696.94	1454.84	1454.84	11.0	11.0
11	678.00	702.00	700.30	696.14	696.14	1526.31	1526.31	11.3	11.3
10	676.00	701.00	699.87	695.95	695.95	1368.39	1368.39	8.9	8.9
9 ²	674.00	-	-	694.33	694.33	2179.30	2179.30	11.7	11.7
Downstream of Van Buren Boulevard									
8	674.00	-	-	691.02	691.02	1726.55	1726.55	15.4	15.4
7	674.00	-	-	690.05	690.05	1693.42	1693.42	14.5	14.5
6	673.00	-	-	688.53	688.53	1718.50	1718.50	15.0	15.0
5	674.00	-	-	688.87	688.87	1682.17	1682.17	10.8	10.8
1. HEC-RAS Station ID 50 is approximately 1.95 miles upstream of Station ID 23. 2. Project levee reach is between Station ID 23 and Station ID 9. 3. Flow overtopping existing RWQCP levee									

Changes of channel hydraulics for the 50- and 100-year storm events between the pre- and post-project conditions are summarized in Table 4. Table 4 shows that the maximum change in water surface elevation is 5.4 feet in the upper restriction reach and a maximum flood limit extends 16 feet to the right bank (proposed RWQCP levee is located on the left bank) at the upstream half of the middle transition reach. It

should be noted that the right bank is high and steep with rock outcrop in the upper and middle transition reaches while the left bank is protected by the proposed RWQCP levee, therefore, the 50- and 100-year flows are contained within this portion of the channel. The maximum change in average flow velocity is 8.7 ft/sec along the upstream half of the middle transition reach. The proposed RWQCP levee is designed with adequate toe down depth (Tetra Tech 2016¹) that will prevent the levee toe scour from the maximum average flow velocity of 23.5 feet/sec.

Table 4. Changes in Channel Hydraulics between Pre- and Post- Project Conditions

HEC-RAS Station ID	Changes in Water Surface Elevation ¹ (ft)		Changes in Channel Top Width ^{1,2} (ft)		Changes Average Flow Velocity ¹ (ft/sec)	
	50-year	100-year	50-year	100-year	50-year	100-year
50 ³	0.0	0.1	0.0	2.2	0.0	0.0
41 ⁴	0.0	0.5	0.0	22.2	0.0	-0.4
Upper Restriction Reach						
23 ⁵	0.4	2.7	1.3	7.2	-0.2	-1.1
22	0.5	3.0	4.8	6.7	-0.4	-1.4
21	0.5	3.8	0.3	10.0	-0.1	-1.8
20	-0.3	4.1	-0.3	4.3	1.8	-0.9
19	-1.6	5.4	-7.0	15.4	4.6	-2.1
18	-1.3	1.2	-2.3	1.2	6.7	7.1
Middle Transition Reach						
17	-2.1	2.1	-40.5	15.8	6.7	4.6
16	0.0	-2.1	0.0	-6.1	0.0	8.7
15	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0
Lower Expansion Reach						
13	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0
9 ⁵	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of Van Buren Boulevard						
8	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0
1. Post-project value – Pre-project value (rounded to 1 decimal place). 2. Difference in the rightmost station where water intersects the ground between post- and pre-project values. 3. HEC-RAS Station ID 50 is approximately 1.95 miles upstream of Station ID 23. 4. HEC-RAS Station ID 41 is approximately 0.97 miles upstream of Station ID 23. 5. Project levee reach is between Station ID 23 and Station ID 9.						

¹ Riverside Regional Water Quality Control Plant Levee Rehabilitation, 100% Design Report. Prepared by Tetra Tech for City of Riverside, California, March 2016.

The computed difference in channel hydraulics between the post- and pre-project conditions would diminish approximately 1 mile (for the 50-year flood) and 2 miles (for the 100-year flood) upstream of the project site (Figure 2). This change in the channel hydraulics has no impact to any inhabitable structures because the flow is contained within the natural water course.

It should be noted that the computed channel hydraulics downstream of Van Buren Boulevard are not changed for the post-project conditions. However, the high flow velocity of more than 10 ft/sec during the 50- and 100-year storm events would be a concern along the left bank and possibly the right bank if the river returns to its historical flow path. It should be noted that the major cause of the high flow velocity is not due to the proposed RWQCP levee. It is mainly due to the construction of the new Van Buren Boulevard bridge and the Santa Ana River channel migration from its historical location (near right bank) to its current location (near left bank) (Figure 3).

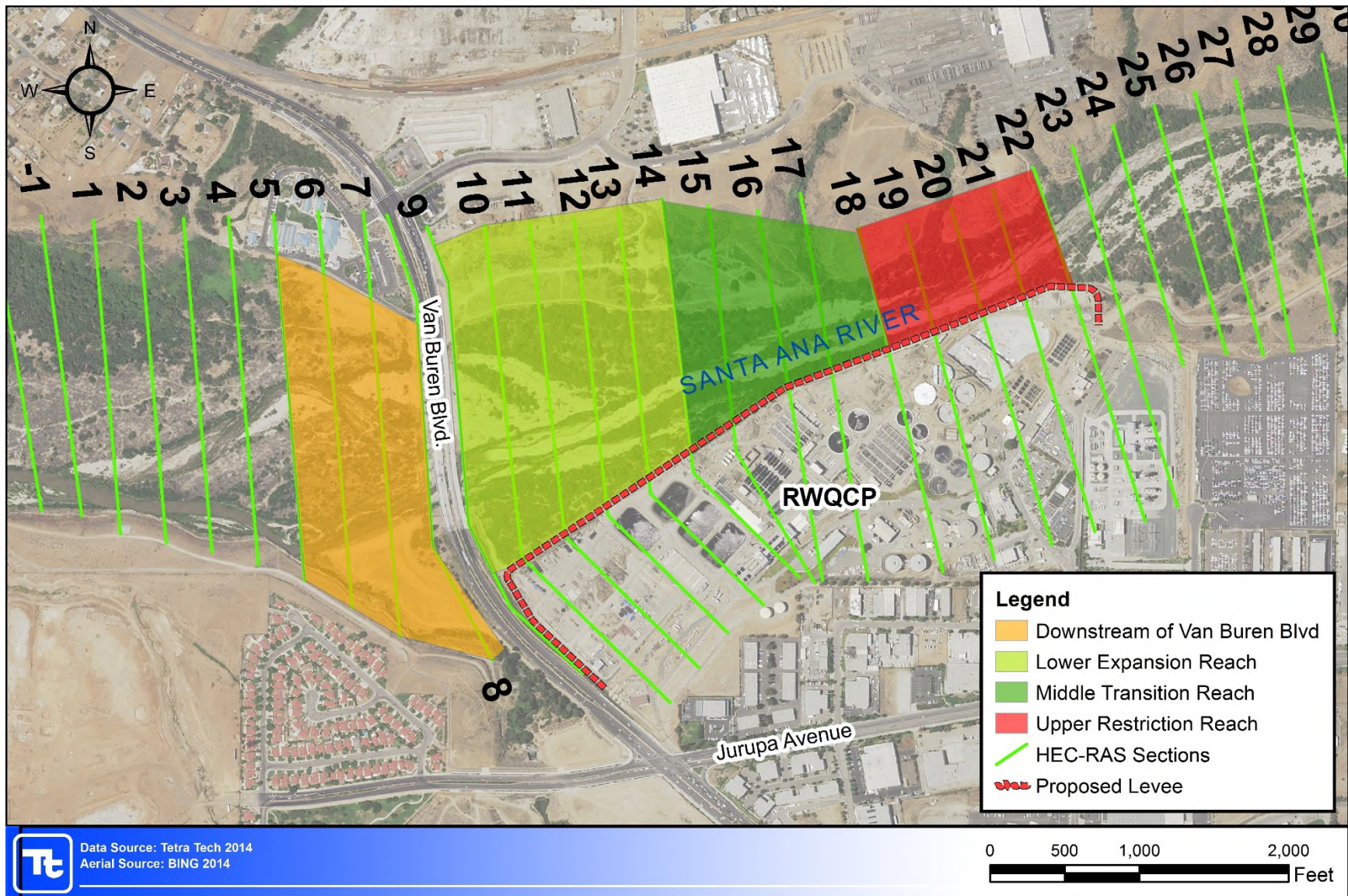


Figure 1. Santa Ana River Channel Reaches in the Vicinity of RWQCP Levee

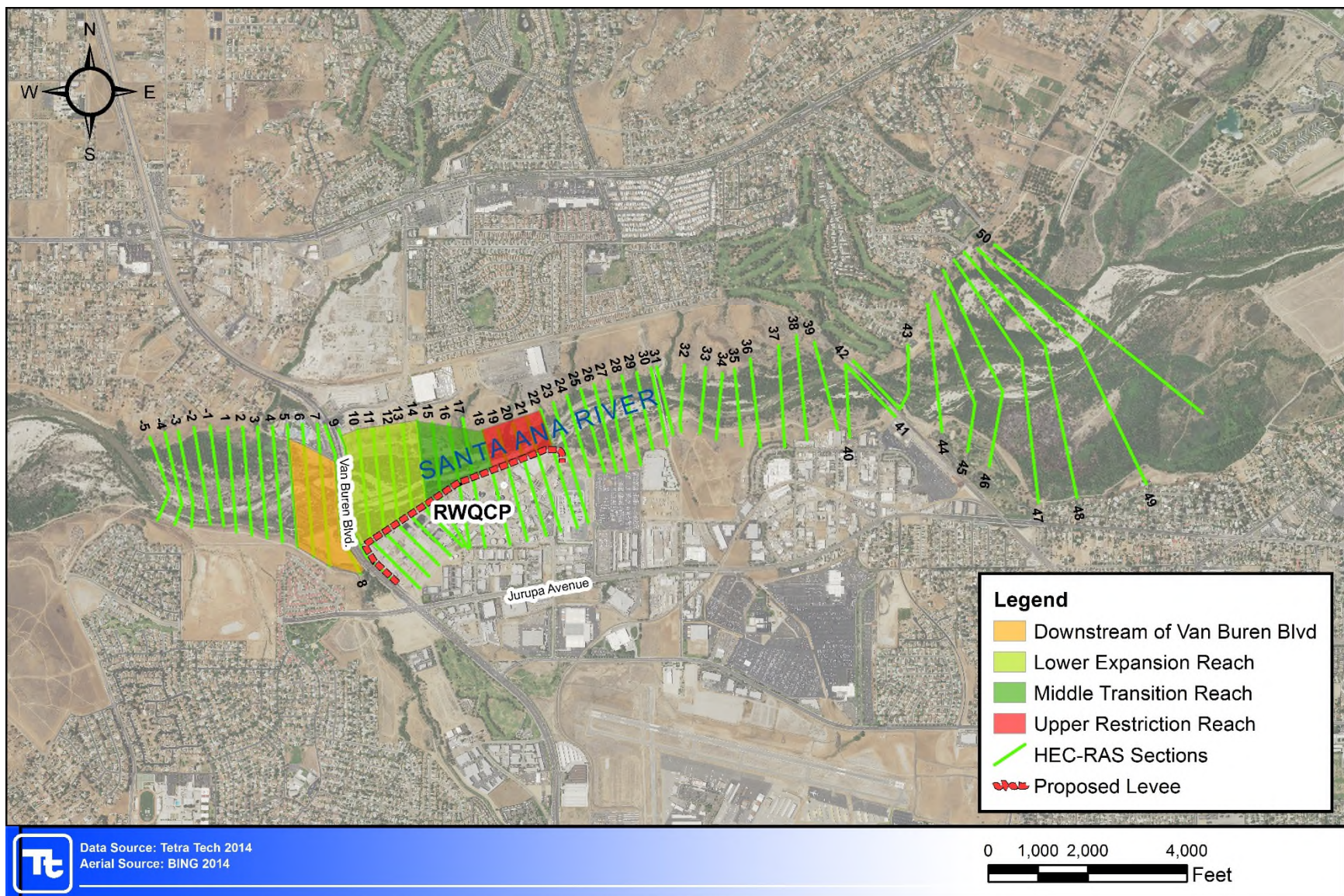


Figure 2. HEC-RAS Cross Section Location Map



Figure 3. Historical Santa Ana River Channel Flow Lines

**RIVERSIDE REGIONAL WATER QUALITY CONTROL PLANT
LEVEE REHABILITATION PROJECT**
Initial Study and Mitigated Negative Declaration (IS/MND)

APPENDIX 3: TRIBAL OUTREACH LETTER



January 6, 2017

Pauma Band of Luiseno Indians
Mr. Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303
Pauma Valley, CA 92061

Subject: Riverside Regional Water Quality Control Plant Levee Rehabilitation Project,
Informational Outreach Letter

Dear Mr. Aguilar:

The City of Riverside Regional Water Quality Control Plant (RWQCP) is constructing the Plant Rehabilitation/Expansion Project. The RWQCP's National Pollutant Discharge Elimination System permit requires that the levee on the north side of the plant, which borders the Santa Ana River, provide the plant protection for a 100-year storm event. A levee-deficiency analysis report completed for the City indicated the levee is deficient in freeboard and embankment protection, per Federal Emergency Management Agency and standard flood control engineering design requirements.

The City of Riverside Public Works Department is proposing to address these deficiencies through the Levee Rehabilitation Project. The project would raise the levee at the top of the southern embankment of the Santa Ana River and provide additional scour protection to the river side of the levee. The proposed project consists of raising the levee up to 6 feet and installing a maximum 4-foot high floodwall on the plant side of the newly raised levee (north side of plant facility). No activities would occur at the toe-of-slope or across the active floodplain areas of the Santa Ana River. The project area is located on the USGS 7.5' quadrangle Riverside West and is adjacent to the southern (left) bank of the Santa Ana River and the existing RWQCP facility, northeast of Van Buren Boulevard and north of Jurupa Ave in the City of Riverside, Riverside County, California. The Project Area of Potential Effect (APE) is a total of 11.54 acres and is relatively flat with surface elevations ranging from approximately 700 to 706 feet above mean sea level.

The project is subject to the requirements of the California Environmental Quality Act (CEQA), and the City of Riverside is the lead agency for CEQA. As part of the Initial Study, a literature and records search was conducted of the cultural resource site and project file collection at the Eastern Information Center (EIC) of the California Historical Resources Information System, at the California State University, Riverside, California (IC File Number EIC-RIV-ST-#3914, December 13, 2016). The records search revealed that a total of 40 previous cultural resources investigations have been conducted within the Project study area (the Project APE for Direct Effects and a 1-mile radius). Of these surveys, 12 investigations have been conducted within the proposed project's APE. In addition, the project APE was previously monitored for cultural resources as part of the *Archaeological Monitoring for the Riverside Regional Water Quality Control Plant Phase I Expansion Project* (Report Number-RI-

9268, George 2014) project. The result of the monitoring did not identify any cultural resources. The EIC search also revealed 39 previously recorded sites within the study area. Of these, two previously recorded historic archaeological sites are within/adjacent to the APE, site P33-16848 (Santa Ana River Trunk Sewer) and site P33-022304 (Santa Ana River Trail Road). Both sites were found not eligible for listing to the California Register of Historic Resources/National Register of Historic Resources. An archeological survey has not been conducted at this time as the entire Project APE is underlain with 19 to 24 feet of fill and the native ground surface is not visible.

Based on previous geotechnical studies (CHJ 2011¹, Tetra Tech 2015²), the likelihood of encountering intact archaeological and paleontological resources in the Project APE is considered low because the Project APE has been extensively altered by previous ground disturbance. Within the Project APE, the 1978 record drawings of the RWQCP levee indicate that the slope was armored with ungrouted riprap with thickness ranging 3 to 6 feet. In addition, the entire project area was previously graded and filled with imported levee fill soils that are comprised of silty sands with gravel inclusions and range in depth from approximately 19 to 24 feet below the RWQCP Levee crest (CHJ 2011, Tetra Tech 2015). Below the levee fill is alluvium to depths of 48 to 64 feet to bedrock. Ground disturbing subsurface construction activities for the project will extend to a depth of approximately 3-5 feet below surface grade (within the levee fill). If project designs change and construction ground disturbance depths range within native soils, there is a potential to impact previously unrecorded subsurface cultural resources. Therefore, worker cultural resource training and a stop-work mitigation plan will be implemented.

The Native American Heritage Commission (NAHC) was contacted by email on November 14, 2016 to request a sacred lands file search. The NAHC responded on November 15, 2016 that no Native American tribal cultural resources were identified by their search as within the proposed Project APE or study area. The NAHC provided a list of Native American individuals and organizations that may have knowledge of cultural resources in the Project area. Your name was included on the NAHC list and we are contacting you as part of our outreach efforts to identify any known tribal cultural resources within the project study area, or if you have any other questions or interest in the project.

We understand that under AB 52, the lead State/public agency is responsible for formal government-to-government consultation with Native American tribes for this project. This letter does not take the place of nor is it intended to serve as official government-to-government consultation.

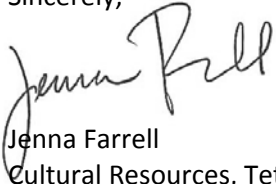
¹ C.H.J. Incorporated (CHJ) 2011. Geotechnical Investigation, Proposed Riverside Regional Water Quality Control Plant Levee, Van Buren Boulevard, Riverside County, California, Project No. 11708-3.

² Tetra Tech 2015. Geotechnical Engineering Report Levee and Floodwall Evaluation Riverside Water Quality Control Plant City of Riverside, California. Prepared for the City of Riverside Water Quality Control Plant, Riverside, California

Pauma Band of Luiseno Indians
Mr. Aguilar, Chairperson
Page 3

I hope this information on the proposed project has been helpful. If you require any additional details, copies of maps, or other data regarding the Project, please feel free to contact me. Please reference "Riverside Regional Water Quality Control Plant Levee Rehabilitation Project" in your correspondence, and send any comments or questions to my attention at Tetra Tech, Inc., 2969 Prospect Park Dr. #100, Rancho Cordova, CA 95670, or call 916-853-4575, or email me at jenna.farrell@tetrattech.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Jenna Farrell". The signature is fluid and cursive, with the first name "Jenna" written in a larger, more prominent script than the last name "Farrell".

Jenna Farrell
Cultural Resources, Tetra Tech

Cc: NAHC Native American Contact List
Attachment A: Project Maps

NAHC Native American Contact List

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Serrano

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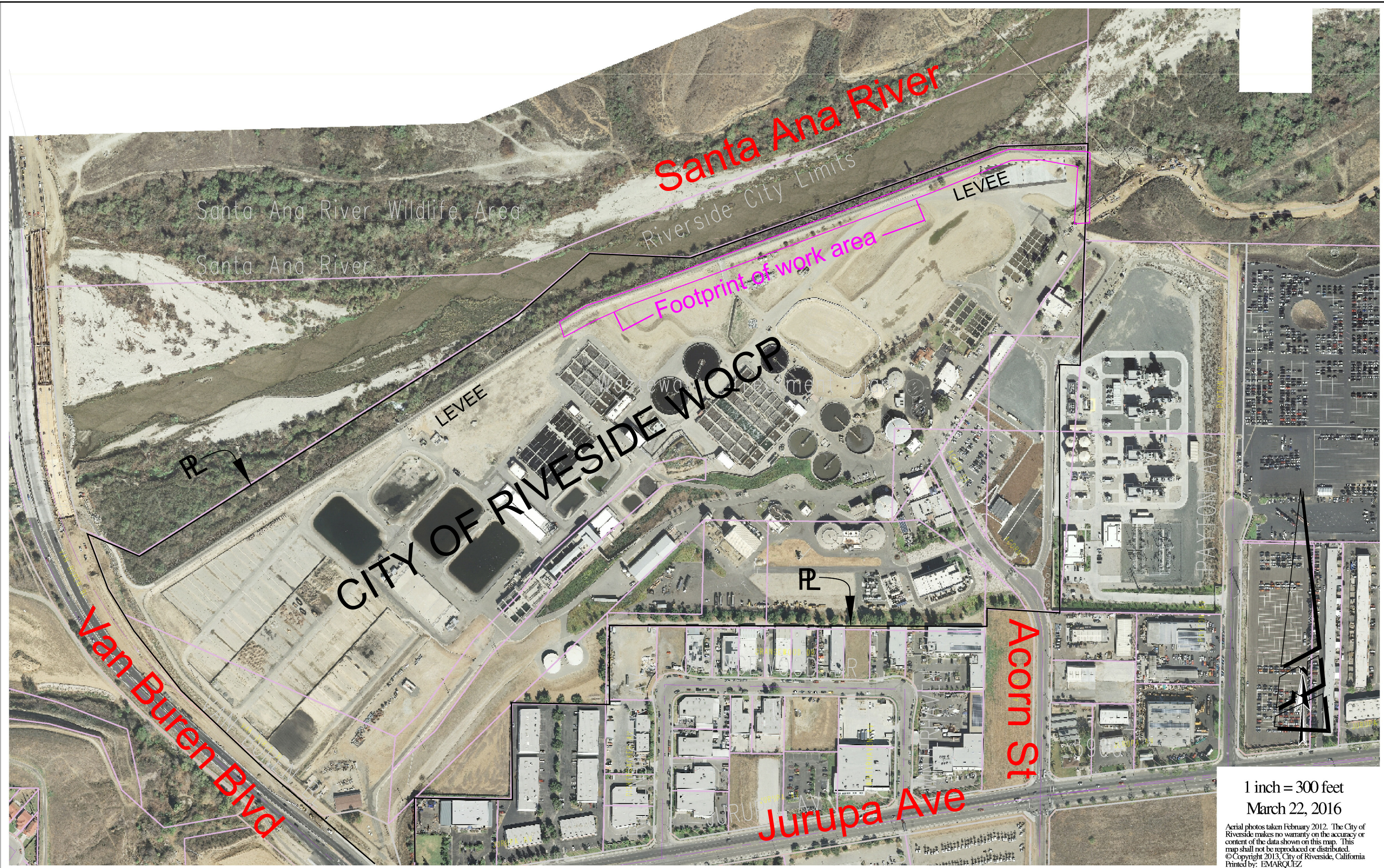


**Riverside Regional Water Quality Control Plant
Initial Study Negative Declaration**

**FIGURE X.X-X
REGIONAL LOCATION
OF PROJECT SITE**

Legend

- Project Site (Riverside Water Quality Control Plant)
- Project Vicinity



1 inch = 300 feet
March 22, 2016

Aerial photos taken February 2012. The City of Riverside makes no warranty on the accuracy or content of the data shown on this map. This map shall not be reproduced or distributed.
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**RIVERSIDE REGIONAL WATER QUALITY CONTROL PLANT
LEVEE REHABILITATION PROJECT**

Initial Study and Mitigated Negative Declaration (IS/MND)

APPENDIX 4: HAZMAT SURVEY EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

5950 ACORN ST
RIVERSIDE, CA 92504

COORDINATES

Latitude (North):	33.9657110 - 33° 57' 56.55"
Longitude (West):	117.4552880 - 117° 27' 19.03"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	457937.1
UTM Y (Meters):	3758253.0
Elevation:	689 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641332 RIVERSIDE WEST, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
5950 ACORN ST
RIVERSIDE, CA 92504

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	RIVERSIDE REGIONAL W	5950 ACORN STREET	RMP		TP
A2		5950 ACORN ST.	CHMIRS		TP
A3	CITY OF RIVERSIDE/WA	5950 ACORN STREET	HAZNET		TP
A4	CITY OF RIVERSIDE/WA	5950 ACORN STREET	ICIS, US AIRS, FINDS, ECHO		TP
A5		5950 ACORN STREET, W	CHMIRS		TP
A6	RIVERSIDE, CITY OF -	5950	RGA LUST		TP
A7		5950 ACORN STREET, R	CHMIRS		TP
A8	CITY OF RIVERSIDE/WA	5950 ACORN STREET	RCRA-LQG		TP
A9	RIVERSIDE REGIONAL W	5950 ACORN ST	ICIS, FINDS, ECHO		TP
A10		5950 ACRON ST.	ERNS		TP
A11	RIVERSIDE CITY, WATE	5950 ACORN ST	LUST, HIST UST, CHMIRS, EMI, ENF, NPDES		TP
A12		5950 ACORN STREET	HMIRS		TP
A13	RIVERSIDE, CITY OF -	5950 ACORN ST	RGA LUST		TP
A14	RIVERSIDE, CITY OF -	5950 ACORN ST	LUST		TP
A15		5950 ACORN STREET	ERNS		TP
A16	RIVERSIDE, CITY OF -	5950 ACORN ST	RGA LUST		TP
A17	1X THE SEWER TREATME	5950 ACORN ST.	HAZNET		TP
A18	WATER RECLAMATION PL	5950 ACORN ST	HAZNET		TP
A19		5950 ACORN STREET	CHMIRS		TP
A20		5950 ACORN STREET	CHMIRS		TP
A21	RIVERSIDE CITY WATER	5950 ACORN ST	AST		TP
A22	WATER QUALITY CONTRO	5950 ACORN ST	SWEEPS UST, CA FID UST, HIST CORTESE		TP
A23	STP	5950 ACORN ST	WDS		TP
A24		5950 ACORN STREET	ERNS		TP
A25	RIVERSIDE CITY WQCP	5950 ACORN STREET	RGA LUST		TP
A26	RVSD CITY WQCP	5950 ACORN ST	RGA LUST		TP
A27	CITY OF RIVERSIDE SE	5950 ACORN STREET	HAZNET		TP
A28	RIVERSIDE, CITY OF -	5950 ACORN STREET	RGA LUST		TP
29	PRIVATE RESIDENCE	PRIVATE RESIDENCE	LUST	Higher	2157, 0.409, SSE
30	PEDLEY	JURUPA AND VAN BUREN	SWF/LF	Higher	2421, 0.459, SW
B31	FLEETWOOD HOMES OF C	7007	HIST CORTESE	Higher	2460, 0.466, SE
32	KOLMAR LABORATORIES	5950 WILDERNESS AVE	LUST, HIST UST, RCRA NonGen / NLR, FINDS, EMI,...	Higher	2477, 0.469, ESE
B33	FLEETWOOD HOMES OF C	7007 JURUPA AV	LUST, HIST UST, EMI, NPDES	Higher	2515, 0.476, SE
B34	FLEETWOOD HOMES OF C	7007 JURUPA AVE	LUST, EMI	Higher	2515, 0.476, SE
35	UNITED CONCRETE PIPE	6501 CLAY ST	ENVIROSTOR, SWEEPS UST, HIST UST, CA FID UST, RCRA.	Higher	3055, 0.579, WNW
36	RIVERSIDE AGRICULTUR	7020 CREST AVENUE	ENVIROSTOR, VCP	Higher	4849, 0.918, WSW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
RIVERSIDE REGIONAL W 5950 ACORN STREET RIVERSIDE, CA 92504	RMP	N/A
5950 ACORN ST. 5950 ACORN ST. RIVERSIDE, CA 92504	CHMIRS OES Incident Number: 13-3017 OES Incident Number: 3-3942	N/A
CITY OF RIVERSIDE/WA 5950 ACORN STREET RIVERSIDE, CA 92504	HAZNET GEPAID: CAL000125170	N/A
CITY OF RIVERSIDE/WA 5950 ACORN STREET RIVERSIDE, CA 92504	ICIS FRS ID:: 110022399956 US AIRS Database: US AIRS MINOR, Date of Government Version: 06/30/2016 EPA plant ID:: 110000861470 FINDS Registry ID:: 110055161177 ECHO	N/A
5950 ACORN STREET, W 5950 ACORN STREET, W RIVERSIDE, CA 92504	CHMIRS OES Incident Number: 12-6800	N/A
RIVERSIDE, CITY OF - 5950 RIVERSIDE, CA	RGA LUST	N/A
5950 ACORN STREET, R 5950 ACORN STREET, R RIVERSIDE, CA 92504	CHMIRS OES Incident Number: 12-6690	N/A
CITY OF RIVERSIDE/WA 5950 ACORN STREET RIVERSIDE, CA 92504	RCRA-LQG EPA ID:: CAL000125170	CAL000125170
RIVERSIDE REGIONAL W 5950 ACORN ST RIVERSIDE, CA 92504	ICIS	N/A

EXECUTIVE SUMMARY

	FRS ID:: 110022399956	
	FINDS	
	Registry ID:: 110022399956	
	ECHO	
5950 ACRON ST. 5950 ACRON ST. RIVERSIDE, CA 92504	ERNS EDR ID:: 920652	N/A
RIVERSIDE CITY, WATE 5950 ACORN ST RIVERSIDE, CA 92504	LUST Database: LUST, Date of Government Version: 11/01/2016 Database: RIVERSIDE CO. LUST, Date of Government Version: 10/20/2016 Facility Id: 94159 Global Id: T0606500367 Facility Status: 9 Status: Completed - Case Closed HIST UST Facility Id: 00000030902 CHMIRS OES Incident Number: 15-3162 OES Incident Number: 8-0173 OES Incident Number: 7-2658 OES Incident Number: 9-0107 OES Incident Number: 4-3650 EMI Facility Id: 9961 ENF Status: Historical Status: Archived Facility Id: 259150 NPDES Facility Status: Historical Facility Status: Active	N/A
5950 ACORN STREET 5950 ACORN STREET RIVERSIDE, CA	HMIRS	N/A
RIVERSIDE, CITY OF - 5950 ACORN ST RIVERSIDE, CA	RGA LUST	N/A
RIVERSIDE, CITY OF - 5950 ACORN ST RIVERSIDE, CA 92504	LUST Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0606500367	N/A
5950 ACORN STREET 5950 ACORN STREET RIVERSIDE, CA	ERNS	N/A

EXECUTIVE SUMMARY

EDR ID:: 1118796

RIVERSIDE, CITY OF -
5950 ACORN ST
RIVERSIDE, CA

RGA LUST

N/A

1X THE SEWER TREATME
5950 ACORN ST.
RIVERSIDE, CA 92504

HAZNET
GEPAID: CAC000844600

N/A

WATER RECLAMATION PL
5950 ACORN ST
RIVERSIDE, CA 92504

HAZNET
GEPAID: CAC001017688

N/A

5950 ACORN STREET
5950 ACORN STREET
RIVERSIDE, CA 92504

CHMIRS
OES Incident Number: 099121
OES Incident Number: 13-1326
OES Incident Number: 12-6923
OES Incident Number: 7-3463
OES Incident Number: 08-9049
Date Completed: 11-APR-90

N/A

5950 ACORN STREET
5950 ACORN STREET
RIVERSIDE, CA 92504

CHMIRS
OES Incident Number: 15-6503

N/A

RIVERSIDE CITY WATER
5950 ACORN ST
RIVERSIDE, CA 92504

AST

N/A

WATER QUALITY CONTRO
5950 ACORN ST
RIVERSIDE, CA 92503

SWEEPS UST
Status: A
Tank Status: A
Comp Number: 30902

N/A

CA FID UST
Facility Id: 33001248
Status: A

HIST CORTESE
Reg Id: 083302410T

STP
5950 ACORN ST
RIVERSIDE, CA 92504

WDS
Facility Status: A

N/A

EXECUTIVE SUMMARY

Facility Id: 8 330117003
Facility Id: 8 330117P03

5950 ACORN STREET 5950 ACORN STREET RIVERSIDE, CA	ERNS EDR ID:: 1132488	N/A
RIVERSIDE CITY WQCP 5950 ACORN STREET RIVERSIDE, CA	RGA LUST	N/A
RVSD CITY WQCP 5950 ACORN ST RIVERSIDE, CA	RGA LUST	N/A
CITY OF RIVERSIDE SE 5950 ACORN STREET RIVERSIDE, CA 92504	HAZNET GEPAID: CAC001049344	N/A
RIVERSIDE, CITY OF - 5950 ACORN STREET RIVERSIDE, CA	RGA LUST	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing

EXECUTIVE SUMMARY

SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-SQG..... RCRA - Small Quantity Generators

RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing

UST..... Active UST Facilities

INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfields Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT.....	Waste Management Unit Database
SWRCY.....	Recycler Database
HAULERS.....	Registered Waste Tire Haulers Listing
INDIAN ODI.....	Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9.....	Torres Martinez Reservation Illegal Dump Site Locations
ODI.....	Open Dump Inventory
IHS OPEN DUMPS.....	Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL.....	Delisted National Clandestine Laboratory Register
HIST Cal-Sites.....	Historical Calsites Database
SCH.....	School Property Evaluation Program
CDL.....	Clandestine Drug Labs
Toxic Pits.....	Toxic Pits Cleanup Act Sites
US CDL.....	National Clandestine Laboratory Register

Local Land Records

LIENS.....	Environmental Liens Listing
LIENS 2.....	CERCLA Lien Information
DEED.....	Deed Restriction Listing

Records of Emergency Release Reports

LDS.....	Land Disposal Sites Listing
MCS.....	Military Cleanup Sites Listing
SPILLS 90.....	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR.....	RCRA - Non Generators / No Longer Regulated
FUDS.....	Formerly Used Defense Sites
DOD.....	Department of Defense Sites
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR.....	Financial Assurance Information
EPA WATCH LIST.....	EPA WATCH LIST
2020 COR ACTION.....	2020 Corrective Action Program List
TSCA.....	Toxic Substances Control Act
TRIS.....	Toxic Chemical Release Inventory System
SSTS.....	Section 7 Tracking Systems
ROD.....	Records Of Decision
RAATS.....	RCRA Administrative Action Tracking System
PRP.....	Potentially Responsible Parties
PADS.....	PCB Activity Database System
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS.....	Material Licensing Tracking System
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database
RADINFO.....	Radiation Information Database

EXECUTIVE SUMMARY

HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS.....	Incident and Accident Data
CONSENT.....	Superfund (CERCLA) Consent Decrees
INDIAN RESERV.....	Indian Reservations
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US MINES.....	Mines Master Index File
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
UXO.....	Unexploded Ordnance Sites
CA BOND EXP. PLAN.....	Bond Expenditure Plan
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings.....	CUPA Resources List
DRYCLEANERS.....	Cleaner Facilities
Financial Assurance.....	Financial Assurance Information Listing
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
Notify 65.....	Proposition 65 Records
UIC.....	UIC Listing
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WIP.....	Well Investigation Program Case List
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
ABANDONED MINES.....	Abandoned Mines
ICE.....	ICE

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner.....	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
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SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/01/2016 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
UNITED CONCRETE PIPE Facility Id: 33330021 Status: Refer: RWQCB	6501 CLAY ST	WNW 1/2 - 1 (0.579 mi.)	35	137
RIVERSIDE AGRICULTUR Facility Id: 33490087 Status: Certified	7020 CREST AVENUE	WSW 1/2 - 1 (0.918 mi.)	36	141

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
PEDLEY Database: SWF/LF (SWIS), Date of Government Version: 08/15/2016 Facility ID: 33-CR-0014	JURUPA AND VAN BUREN	SW 1/4 - 1/2 (0.459 mi.)	30	111

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 4 LUST sites within

EXECUTIVE SUMMARY

approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
PRIVATE RESIDENCE Database: LUST, Date of Government Version: 11/01/2016 Global Id: T0606554617 Status: Completed - Case Closed	PRIVATE RESIDENCE	SSE 1/4 - 1/2 (0.409 mi.)	29	109
KOLMAR LABORATORIES Database: LUST, Date of Government Version: 11/01/2016 Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global Id: T0606500030 Global ID: T0606500030 Status: Completed - Case Closed	5950 WILDERNESS AVE	ESE 1/4 - 1/2 (0.469 mi.)	32	112
FLEETWOOD HOMES OF C Database: LUST, Date of Government Version: 11/01/2016 Database: RIVERSIDE CO. LUST, Date of Government Version: 10/20/2016 Facility Id: 89205 Global Id: T0606500024 Facility Status: 9 Status: Completed - Case Closed	7007 JURUPA AV	SE 1/4 - 1/2 (0.476 mi.)	B33	117
FLEETWOOD HOMES OF C Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Remedial action (cleanup) Underway Global ID: T0606500024	7007 JURUPA AVE	SE 1/4 - 1/2 (0.476 mi.)	B34	134

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FLEETWOOD HOMES OF C Reg Id: 083300158T	7007	SE 1/4 - 1/2 (0.466 mi.)	B31	112
KOLMAR LABORATORIES Reg Id: 083300217T	5950 WILDERNESS AVE	ESE 1/4 - 1/2 (0.469 mi.)	32	112

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

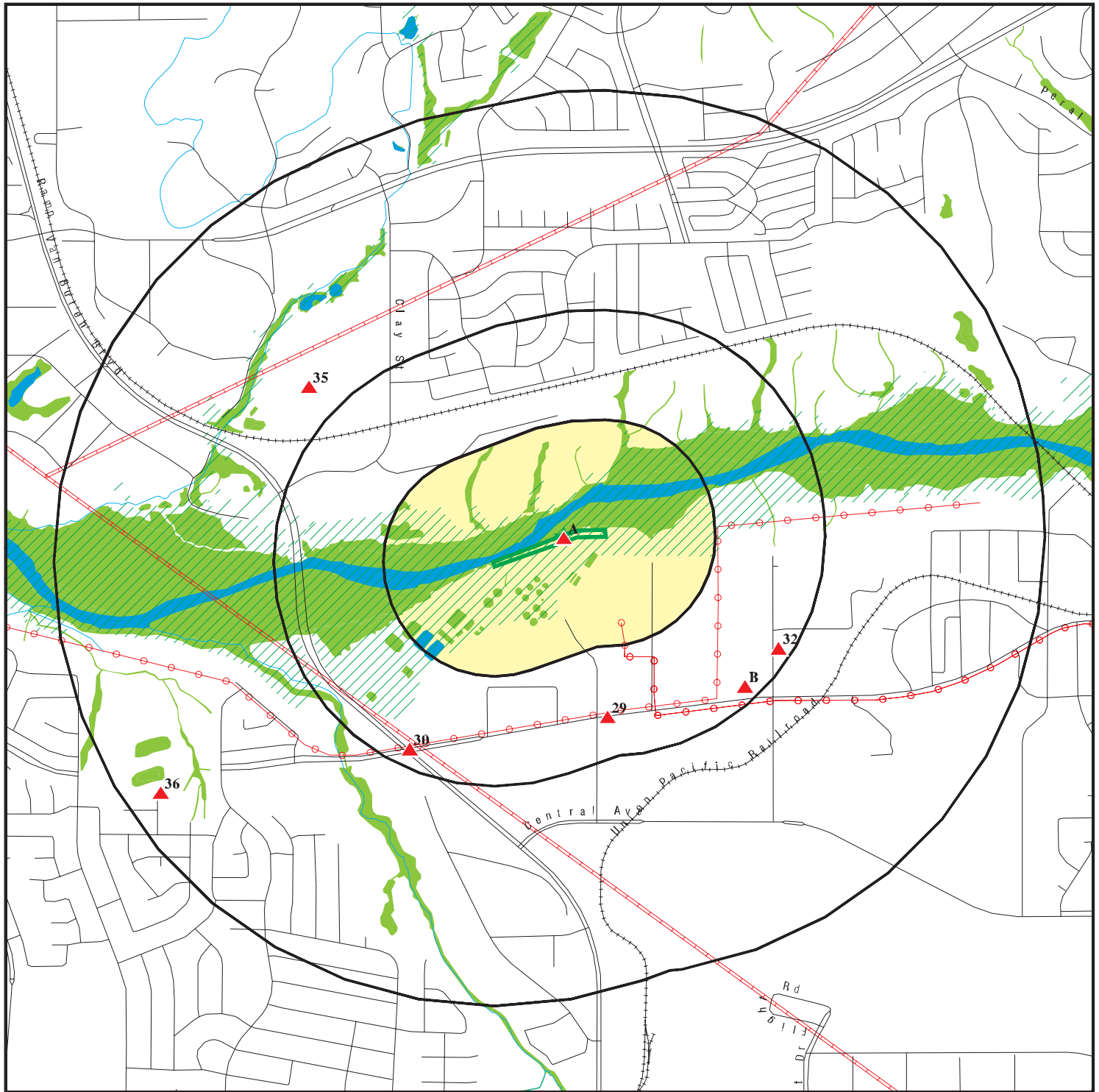
Site Name

INTERMEDIATE SCHOOL NO. 4

Database(s)

ENVIROSTOR, SCH

OVERVIEW MAP - 4808710.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

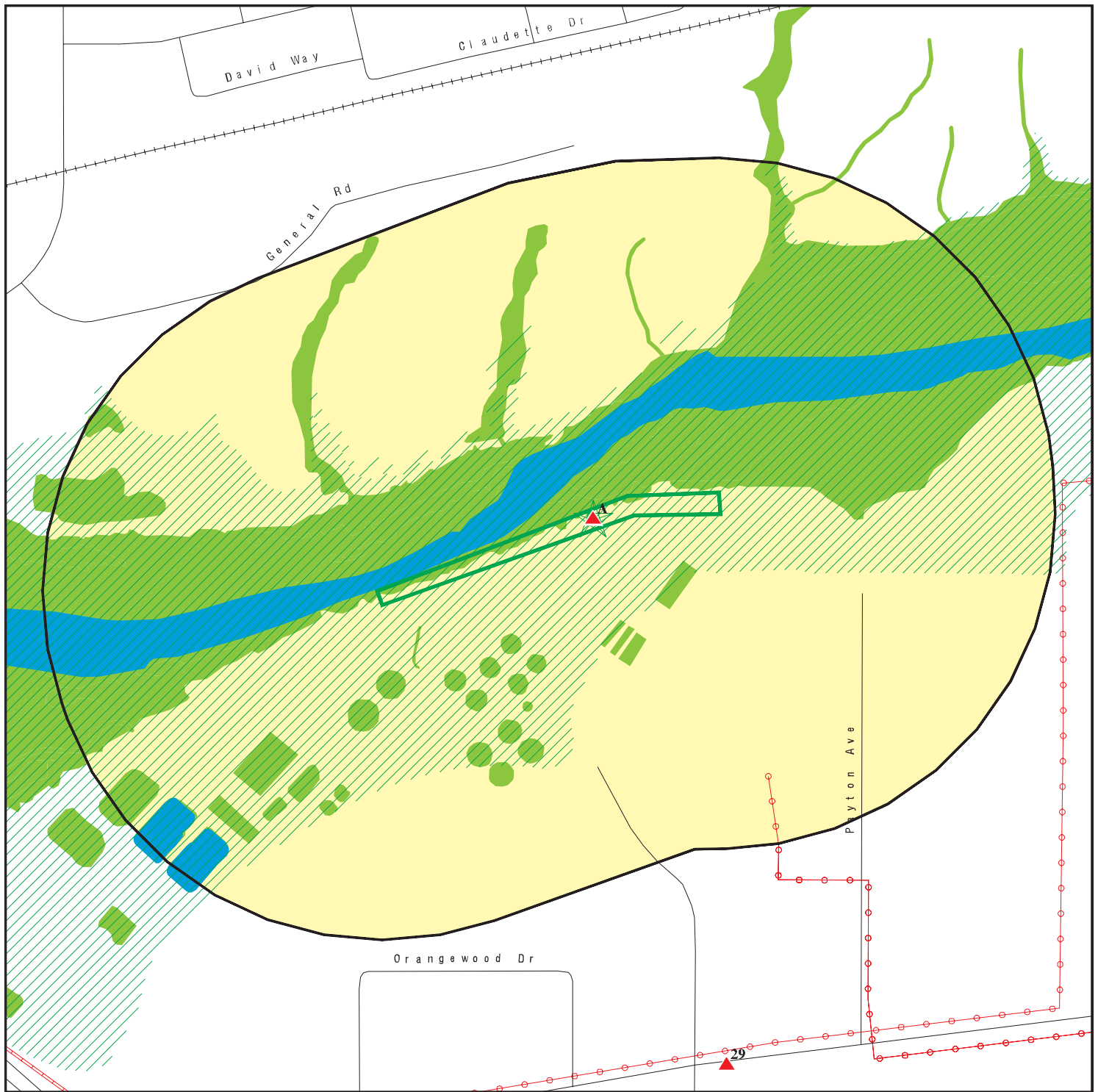
0 1/4 1/2 1 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Riverside WQCP
ADDRESS: 5950 Acorn St
Riverside CA 92504
LAT/LONG: 33.965711 / 117.455288

CLIENT: Tetra Tech
CONTACT: Emmy Andrews
INQUIRY #: 4808710.2s
DATE: December 16, 2016 5:30 pm

DETAIL MAP - 4808710.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

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