

Appendix B

Air Quality Calculations

B.1 Air Quality Construction Emission Estimates
Assumptions/Methods for Thousand Palms Flood Control
Project

Thousand Palms Flood Control Project

Construction Emission Estimate Assumptions/Methods

General Assumptions

- 1) Work occurs 5 days a week, 8 hours per day.
- 2) Construction schedule, equipment needs, material use for trip estimates, provided by Parsons Brinkerhoff for the District.

Onroad Equipment Emission Calculations Assumptions

- 1) CARB EMFAC2014 model emission factors for Salton Sea Air Basin are used to estimate on-road emissions. All passenger vehicles are assumed to be gasoline-fueled and all delivery and heavy heavy duty trucks are assumed to be diesel-fueled. Emission factor for each of three classes is weight-averaged emission factor based on the total miles traveled by each EMFAC 2011 vehicle class and total emissions.
- 2) Trip estimates are based on raw material import/export quantities, and worker data provided by WSP Parsons Brinckerhoff.
- 3) Trip distance assumptions determined based on likely material sources and waste disposal locations for heavy truck trips, and 30 miles/round trip for construction worker vehicles, and crew trucks.
- 4) Unpaved distance per trip determined based on type of trip/use of vehicle and expected trip routes.

Offroad Equipment Emission Calculation Assumptions

- 1) CARB OFFROAD model emission factors for Salton Sea Air Basin are used to estimate ROG, NOx, and PM emissions for off-road equipment. SOx determined using sulfur content mass balance based on OFFROAD fuel use estimates.
- 2) SCAQMD CEQA website emission factors are used for CO for all offroad equipment.

Fugitive Dust Emission Calculations Assumptions

- 1) Earthmoving emission factors are calculated using the recent version of USEPA AP-42 Section 11.9 for Dozing, Grading, and Scraper loading/unloading, and Section 13.2.4 for soil handling (drop emissions).
- 2) Paved road emission factors are calculated using the most current version of USEPA AP-42 Section 13.2.1 and use the following assumptions:
 - A) Silt loading is assumed to be 0.06 g/m² for 5,000<ADT<10,0000 of Table 13.2.1-2; B) average vehicle weight is calculated on VMT average basis.
- 3) Unpaved road emission factors are calculated using the most current version of USEPA AP-42 Section 13.2.2 and use the following assumptions:
 - A) Silt content is 5% for unpaved roads in this sandy project area; B) average vehicle weight is calculated on VMT average basis. Scrapers unpaved road dust is estimated separately.
- 4) For windblown emissions, emission factor of 0.38 tons/disturbed acres/year is used (AP-42 Section 11.9).
- 5) Fugitive dust emissions factors from electrical powered batch plant are from the controlled bases of AP-42 Section 11.12.

**Thousand Palms Flood Control Project
Construction Emissions - Summary**

Proposed Project

Maximum Daily Emissions (lbs/day)

	VOC	CO	NOx	PM10	PM2.5	SOx
Onroad	2.77	15.90	57.57	1.74	0.84	0.20
Offroad	19.37	165.79	260.41	11.30	10.39	0.34
Fugitive Dust	---	---	---	807.80	101.41	---
Total	22.14	181.69	317.98	820.83	112.64	0.53

Total Emissions (tons)

	VOC	CO	NOx	PM10	PM2.5	SOx
Onroad	0.48	3.07	5.13	0.19	0.09	0.02
Offroad	1.43	11.35	19.51	0.83	0.76	0.02
Fugitive Dust	---	---	---	66.69	9.58	---
Total	1.91	14.42	24.63	67.70	10.42	0.04

Total GHG Emissions (Tons)

	CO2e
Onroad	3,099
Offroad	2,704
Water Use	719
Electricity Use	156
Total	6,678

**Thousand Palms Flood Control Project
Operation Emissions - Summary**

Proposed Project

Maximum Daily Emissions (lbs/day)

	VOC	CO	NOx	PM10	PM2.5	SOx
Onroad	0.19	0.86	7.10	0.19	0.09	0.02
Offroad	0.90	5.93	11.35	0.44	0.41	0.02
Fugitive Dust	---	---	---	30.16	3.57	---
Total	1.09	6.78	18.45	30.79	4.07	0.04

Annual Emissions (tons)

	VOC	CO	NOx	PM10	PM2.5	SOx
Onroad	0.01	0.05	0.20	0.01	0.00	0.00
Offroad	0.03	0.22	0.43	0.02	0.02	0.00
Fugitive Dust	---	---	---	0.82	0.10	---
Total	0.04	0.27	0.63	0.85	0.11	0.00

Annual GHG Emissions (Tons)

	CO2e
Onroad	75
Offroad	67
Water Use	8
Total	150

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Thousand Palms Flood Control Project					542	9/19/2018	11/15/2020
Construction					140	9/19/2018	3/31/2019
Stake Levee and Channel Work Area					10	9/19/2018	9/30/2018
Survey Crew			1		80		
Pickup Ford F-150	385	Gasoline	1		80		
Install BMPs					10	10/3/2018	10/14/2018
Laborer			4		320		
Operator			0.5		40		
Foreman			0.25		20		
Pickup Ford F-150	385	Gasoline	1		80		
Medium Truck Ford F-350	255	Gasoline	1		80		
Backhoe Cat 450F	127	Diesel	0.5		40		
Relocate Fences					10	10/3/2018	10/14/2018
Laborer			2		160		
Teamster			0.5		40		
Pickup Ford F-150	385	Gasoline	1		80		
Flatbed Peterbilt 330	280	Diesel	0.5		40		
Erect Soil Cement Batch Plant					20	10/17/2018	11/11/2018
Laborer			6		960		
Operator			0.5		80		
Teamster			0.5		80		
Foreman			1		160		
Pickup Ford F-150	385	Gasoline	2		320		
Medium Truck Ford F-350	255	Gasoline	1		160		
Flatbed Peterbilt 330	280	Diesel	0.5		80		
Water Pull Caterpillar 613C WW	187	Diesel	0.5		80		
Trial Soil Cement Mixes					60	11/14/2018	2/3/2019
Laborer			0.25		120		
Pickup Ford F-150	385	Gasoline	0.25		120		
Relocate Desert Moon Drive Utilities					40	10/17/2018	12/9/2018
Laborer			4		1280		
Operator			0.25		80		
Teamster			0.25		80		
Foreman			0.5		160		
Pickup Ford F-150	385	Gasoline	2		640		
Medium Truck Ford F-350	255	Gasoline	0.5		160		
Flatbed Peterbilt 330	280	Diesel	0.25		80		
Excavator Cat 352	396	Diesel	0.25		80		
Backhoe Cat 450F	127	Diesel	0.25		80		
Small Compactor Cat CB24B	36	Diesel	0.25		80		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		80		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Relocate Via Las Palmas Utilities				40		10/17/2018	12/9/2018
<i>Laborer</i>			4		1280		
<i>Operator</i>			0.25				
<i>Teamster</i>			0.25		80		
<i>Foreman</i>			0.5		160		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		320		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		160		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.25		80		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		80		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		80		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.25		80		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		80		
Relocate CCGC Utilities				40			
<i>Laborer</i>			4		1280		
<i>Operator</i>			0.25		80		
<i>Teamster</i>			0.25		80		
<i>Foreman</i>			0.5		160		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		320		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		160		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.25		80		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		80		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		80		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.25		80		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		80		
Relocate Avenue 38 Sewer				120		10/17/2018	3/31/2019
<i>Laborer</i>			4		3840		
<i>Operator</i>			0.25		240		
<i>Teamster</i>			0.25		240		
<i>Foreman</i>			0.5		480		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		960		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		480		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.25		240		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		240		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		240		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.25		240		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		240		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Haul Road Construction			0.25	15		10/17/2018	11/4/2018
<i>Laborer</i>			1		120		
<i>Operator</i>			0.75		90		
<i>Foreman</i>			0.1		12		
<i>Pickup Ford F-150</i>	385	Gasoline	1		120		
<i>Loader Cat 988</i>	541	Diesel	0.25		30		
<i>Grader Cat 140M2</i>	193	Diesel	0.25		30		
<i>Dozer Cat D-6</i>	150	Diesel	0.25		30		
Haul Road Signage				2		11/7/2018	11/8/2018
<i>Laborer</i>			2		32		
<i>Medium Truck Ford F-350</i>	255	Gasoline	1		16		
<i>Backhoe Cat 450F</i>	127	Diesel	0.5		8		
Washington Street Crossing (WSC)				263		10/17/2018	10/18/2019
Remove Well Site Wall				2		10/17/2018	10/18/2018
<i>Laborer</i>			2		32		
<i>Operator</i>			0.5		8		
<i>Teamster</i>			0.5		8		
<i>Foreman</i>			0.1		1.6		
<i>Pickup Ford F-150</i>	385	Gasoline	1		16		
<i>Dump Peterbilt 348</i>	350	Diesel	0.5		8		
<i>Backhoe Cat 450F</i>	127	Diesel	0.5		8		
Erect Temporary Fencing				2		10/19/2018	10/20/2018
<i>Laborer</i>			3		48		
<i>Foreman</i>			0.1		1.6		
<i>Pickup Ford F-150</i>	385	Gasoline	1		16		
<i>Medium Truck Ford F-350</i>	255	Gasoline	0.5		8		
Construct Detour				10		10/21/2018	11/3/2018
<i>Laborer</i>			4		320		
<i>Operator</i>			1.75		140		
<i>Teamster</i>			0.5		40		
<i>Foreman</i>			0.25		20		
<i>Pickup Ford F-150</i>	385	Gasoline	2		160		
<i>Dump Peterbilt 348</i>	350	Diesel	0.5		40		
<i>Compactor Cat CP74B</i>	174	Diesel	0.5		40		
<i>Grader Cat 140M2</i>	193	Diesel	0.5		40		
<i>Dozer Cat D-6</i>	150	Diesel	0.25		20		
<i>Asphalt Paver Cat AP655D</i>	174	Diesel	0.25		20		
<i>Water Pull Caterpillar 613C WW</i>	187	Diesel	0.25		20		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Detour Signing and Striping				2		11/4/2018	11/7/2018
<i>Laborer</i>			2		32		
<i>Operator</i>			0.25		4		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		16		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		8		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		4		
Detour Traffic				231		11/8/2018	9/26/2019
Excavation				30		11/8/2018	12/19/2018
<i>Laborer</i>			4		960		
<i>Operator</i>			2.25		540		
<i>Teamster</i>			2		480		
<i>Foreman</i>			0.5		120		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		480		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		240		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	2		480		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.5		120		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		120		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		120		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		60		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		120		
Construct WSC				180			
<i>Laborer</i>			8		11520		
<i>Operator</i>			1.75		2520		
<i>Teamster</i>			7		10080		
<i>Foreman</i>			1		1440		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	4		5760		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		1440		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	2		2880		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	4		5760		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		360		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		720		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.25		360		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		720		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		360		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Storm Drains Ave 38 to Collection Basin					10	12/20/2018	1/2/2019
<i>Laborer</i>			3		240		
<i>Operator</i>			2.1		168		
<i>Teamster</i>			1.1		88		
<i>Foreman</i>			0.25		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		80		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		80		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		40		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	0.1		8		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	1		80		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	1		80		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.1		8		
Restore Roadway					20		
<i>Laborer</i>			4		640		
<i>Operator</i>			2		320		
<i>Teamster</i>			1.5		240		
<i>Foreman</i>			0.5		80		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		320		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		160		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.5		80		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	0.5		80		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		40		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.25		40		
<i>Asphalt Paver Cat AP655D</i>	174	<i>Diesel</i>	0.5		80		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		80		
Restore Sidewalks and Landscaping					20	8/29/2019	9/25/2019
<i>Laborer</i>			3		480		
<i>Operator</i>			1.25		200		
<i>Teamster</i>			1		160		
<i>Foreman</i>			0.25		40		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		160		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	0.5		80		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		160		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	0.5		80		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		80		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		80		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		40		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Open Washington Street and Existing Ave 38 to Traffic					1	9/27/2019	9/27/2019
Remove Detour					5	9/28/2019	10/4/2019
<i>Laborer</i>			4		160		
<i>Operator</i>			1.25		50		
<i>Teamster</i>			1		40		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		80		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		40		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		20		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.25		10		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		10		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		10		
Restore Well Site Wall					10	10/5/2019	10/18/2019
<i>Laborer</i>			3		240		
<i>Operator</i>			0.85		68		
<i>Teamster</i>			0.6		48		
<i>Foreman</i>			0.25		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		80		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		40		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.5		40		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	0.1		8		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		40		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.25		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.1		8		
CCGC Culvert					207	12/12/2018	9/26/2019
Construction Staking					2	12/12/2018	12/13/2018
<i>Survey Crew</i>			1		16		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		16		
Clear and Grub					3	12/14/2018	12/16/2018
<i>Laborer</i>			2		48		
<i>Operator</i>			1.5		36		
<i>Teamster</i>			2		48		
<i>Foreman</i>			0.1		2.4		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		24		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	2		48		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		12		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.5		12		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		12		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Strip					1	12/19/2018	12/19/2018
<i>Laborer</i>			2		16		
<i>Operator</i>			2.25		18		
<i>Teamster</i>			2		16		
<i>Foreman</i>			0.1		0.8		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		8		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	2		16		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	1		8		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	1		8		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		2		
Construct Detour					10		
<i>Laborer</i>			4		320		
<i>Operator</i>			1.75		140		
<i>Teamster</i>			0.5		40		
<i>Foreman</i>			0.25		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		160		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	0.5		40		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	0.5		40		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.5		40		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		20		
<i>Asphalt Paver Cat AP655D</i>	174	<i>Diesel</i>	0.25		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		20		
Detour Signing and Striping					1	1/3/2019	1/3/2019
<i>Laborer</i>			2		16		
<i>Operator</i>			0.25		2		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		8		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		4		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		2		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Culvert				180		1/4/2019	9/12/2019
<i>Laborer</i>			8		11520		
<i>Operator</i>			1.75		2520		
<i>Teamster</i>			7		10080		
<i>Foreman</i>			1		1440		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	4		5760		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		1440		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	2		2880		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	4		5760		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		360		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		720		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.25		360		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		720		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		360		
Remove Detour				5		9/13/2019	9/19/2019
<i>Laborer</i>			4		160		
<i>Operator</i>			1.25		50		
<i>Teamster</i>			1		40		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		80		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		40		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		20		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.25		10		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		10		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		10		
Tie in Channel				5			
<i>Laborer</i>			2		80		
<i>Operator</i>			2.5		100		
<i>Teamster</i>			6		240		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		40		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		240		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		40		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		20		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		20		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Via Las Palmas Culvert					212	12/12/2018	10/3/2019
Construction Staking					2	12/12/2018	12/13/2018
Survey Crew			1		16		
Pickup Ford F-150	385		1		16		
Clear and Grub					3	12/14/2018	12/16/2018
Laborer			2		48		
Operator			1.5		36		
Teamster			2		48		
Foreman			0.1		2.4		
Pickup Ford F-150	385	Gasoline	1		24		
Dump Peterbilt 348	350	Diesel	2		48		
Loader Cat 988	541	Diesel	0.5		12		
Dozer Cat D-6	150	Diesel	0.5		12		
Water Pull Caterpillar 613C WW	187	Diesel	0.5		12		
Strip					1	12/19/2018	12/19/2018
Laborer			2		16		
Operator			2.25		18		
Teamster			2		16		
Foreman			0.1		0.8		
Pickup Ford F-150	385	Gasoline	1		8		
Dump Peterbilt 348	350	Diesel	2		16		
Loader Cat 988	541	Diesel	1		8		
Dozer Cat D-6	150	Diesel	1		8		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		2		
Construct Detour					15	12/20/2018	1/9/2019
Laborer			4		480		
Operator			1.75		210		
Teamster			0.5		60		
Foreman			0.25		30		
Pickup Ford F-150	385	Gasoline	2		240		
Dump Peterbilt 348	350	Diesel	0.5		60		
Compactor Cat CP74B	174	Diesel	0.5		60		
Grader Cat 140M2	193	Diesel	0.5		60		
Dozer Cat D-6	150	Diesel	0.25		30		
Asphalt Paver Cat AP655D	174	Diesel	0.25		30		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		30		
Detour Signing and Striping					1	1/10/2019	1/10/2019
Laborer			2		16		
Operator			0.25		2		
Pickup Ford F-150	385	Gasoline	1		8		
Medium Truck Ford F-350	255	Gasoline	0.5		4		
Backhoe Cat 450F	127	Diesel	0.25		2		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Culvert				180		1/11/2019	9/19/2019
<i>Laborer</i>			8		11520		
<i>Operator</i>			1.75		2520		
<i>Teamster</i>			7		10080		
<i>Foreman</i>			1		1440		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	4		5760		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		1440		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	2		2880		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	4		5760		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		360		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		720		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.25		360		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		720		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		360		
Remove Detour				5		9/20/2019	9/26/2019
<i>Laborer</i>			4		160		
<i>Operator</i>			1.25		50		
<i>Teamster</i>			1		40		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		80		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		40		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		20		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.25		10		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		10		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		10		
Tie in Levees				5		9/27/2019	10/3/2019
<i>Laborer</i>			2		80		
<i>Operator</i>			2.5		100		
<i>Teamster</i>			6		240		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		40		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		240		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		40		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		20		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		20		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Desert Moon Drive Culvert					207	12/12/2018	9/26/2019
Construction Staking					2	12/12/2018	12/13/2018
Survey Crew			1		16		
Pickup Ford F-150	385	Gasoline	1		16		
Clear and Grub					3	12/14/2018	12/16/2018
Laborer			2		48		
Operator			1.5		36		
Teamster			2		48		
Foreman			0.1		2.4		
Pickup Ford F-150	385	Gasoline	1		24		
Dump Peterbilt 348	350	Diesel	2		48		
Loader Cat 988	541	Diesel	0.5		12		
Dozer Cat D-6	150	Diesel	0.5		12		
Water Pull Caterpillar 613C WW	187	Diesel	0.5		12		
Strip					1	12/19/2018	12/19/2018
Laborer			2		16		
Operator			2.25		18		
Teamster			2		16		
Foreman			0.1		0.8		
Pickup Ford F-150	385	Gasoline	1		8		
Dump Peterbilt 348	350	Diesel	2		16		
Loader Cat 988	541	Diesel	1		8		
Dozer Cat D-6	150	Diesel	1		8		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		2		
Construct Detour					10	12/20/2018	1/2/2019
Laborer			4		320		
Operator			1.5		120		
Teamster			0.5		40		
Foreman			0.25		20		
Pickup Ford F-150	385	Gasoline	2		160		
Dump Peterbilt 348	350	Diesel	0.5		40		
Compactor Cat CP74B	174	Diesel	0.5		40		
Grader Cat 140M2	193	Diesel	0.5		40		
Dozer Cat D-6	150	Diesel	0.25		20		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		20		
Detour Signing and Striping					1	1/3/2019	1/3/2019
Laborer			2		16		
Operator			0.25		2		
Pickup Ford F-150	385	Gasoline	1		8		
Medium Truck Ford F-350	255	Gasoline	0.5		4		
Backhoe Cat 450F	127	Diesel	0.25		2		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Culvert					180	1/4/2019	9/12/2019
<i>Laborer</i>			8		11520		
<i>Operator</i>			1.75		2520		
<i>Teamster</i>			7		10080		
<i>Foreman</i>			1		1440		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	4		5760		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		1440		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	2		2880		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	4		5760		
<i>Excavator Cat 352</i>	396	<i>Diesel</i>	0.25		360		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		720		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.25		360		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		720		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		360		
Remove Detour					5		
<i>Laborer</i>			4		160		
<i>Operator</i>			1.25		50		
<i>Teamster</i>			1		40		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		80		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		40		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		20		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.25		10		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	0.25		10		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		10		
Tie in Levees					5	9/20/2019	9/26/2019
<i>Laborer</i>			2		80		
<i>Operator</i>			2.5		100		
<i>Teamster</i>			6		240		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		40		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		240		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		40		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		20		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		20		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
FTL Closed Period Reach 4					153	4/1/2019	10/31/2019
Reach 4 Channel					137	11/1/2019	5/9/2020
Clear and Grub					5	11/1/2019	11/7/2019
Laborer			4		160		
Operator			3		120		
Teamster			6		240		
Concrete Truck Peterbilt 365	455	Diesel	6		240		
Loader Cat 988	541	Diesel	2		80		
Dozer Cat D-6	150	Diesel	1		40		
Water Pull Caterpillar 613C WW	187	Diesel	1		40		
Strip					5	11/8/2019	11/14/2019
Laborer			2		80		
Operator			2		80		
Teamster			4		160		
Foreman			0.25		10		
Pickup Ford F-150	385	Gasoline	1		40		
Scraper Cat 657	600 Tractor/45 Diesel		4		160		
Loader Cat 988	541	Diesel	1		40		
Water Pull Caterpillar 613C WW	187	Diesel	1		40		
Excavate Channel					110	11/15/2019	4/16/2020
Laborer			2		1760		
Operator			7		6160		
Teamster			1		880		
Foreman			0.25		220		
Pickup Ford F-150	385	Gasoline	1		880		
Dump Peterbilt 348	350	Diesel	1		880		
Scraper Cat 657	600 Tractor/45 Diesel		5		4400		
Loader Cat 988	541	Diesel	2		1760		
Water Pull Caterpillar 613C WW	187	Diesel	1		880		
Construct Soil Cement Lining					120	11/17/2019	5/2/2020
Laborer			2		1920		
Operator			5		4800		
Teamster			26		24960		
Foreman			0.25		240		
Pickup Ford F-150	385	Gasoline	1		960		
Dump Peterbilt 348	350	Diesel	26		24960		
Compactor Cat CP74B	174	Diesel	2		1920		
Grader Cat 140M2	193	Diesel	1		960		
Dozer Cat D-6	150	Diesel	1		960		
Water Pull Caterpillar 613C WW	187	Diesel	1		960		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Tie In Channel to WSC					5	5/3/2020	5/9/2020
<i>Laborer</i>			2		80		
<i>Operator</i>			2.5		100		
<i>Teamster</i>			6		240		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		40		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		240		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		40		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		20		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		20		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20		
Reach 3 Channel					55		
Construct CCGC Outlet Structure					30	5/3/2020	
<i>Laborer</i>			2		480		
<i>Operator</i>			2.5		600		
<i>Teamster</i>			6		1440		
<i>Foreman</i>			0.5		120		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		240		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		240		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		240		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		120		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		120		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		120		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		120		
Construct CCGC Inlet Structure					30	5/3/2020	6/13/2020
<i>Laborer</i>			2		480		
<i>Operator</i>			2.5		600		
<i>Teamster</i>			6		1440		
<i>Foreman</i>			0.5		120		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		240		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		1440		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		240		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	1		240		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		120		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		120		
<i>Compact Loader Cat 279D</i>	73	<i>Diesel</i>	0.5		120		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		120		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Clear and Grub					2	4/26/2020	4/29/2020
Laborer			4		64		
Operator			3		48		
Teamster			6		96		
Concrete Truck Peterbilt 365	455	Diesel	6		96		
Loader Cat 988	541	Diesel	2		32		
Dozer Cat D-6	150	Diesel	1		16		
Water Pull Caterpillar 613C WW	187	Diesel	1		16		
Strip					2		
Laborer			2		32		
Operator			2		32		
Teamster			4		64		
Foreman			0.25		4		
Pickup Ford F-150	385	Gasoline	1		16		
Scraper Cat 657	600 Tractor/45 Diesel		4		64		
Loader Cat 988	541	Diesel	1		16		
Water Pull Caterpillar 613C WW	187	Diesel	1		16		
Excavate Channel					50	5/2/2020	7/10/2020
Laborer			0.5		200		
Operator			8.5		3400		
Teamster			4		1600		
Foreman			0.25		100		
Pickup Ford F-150	385	Gasoline	1		400		
Dump Peterbilt 348	350	Diesel	4		1600		
Scraper Cat 657	600 Tractor/45 Diesel		4		1600		
Loader Cat 988	541	Diesel	4		1600		
Water Pull Caterpillar 613C WW	187	Diesel	0.5		200		
Construct Soil Cement Lining					50	5/3/2020	7/11/2020
Laborer			2		800		
Operator			5		2000		
Teamster			26		10400		
Foreman			0.25		100		
Pickup Ford F-150	385	Gasoline	1		400		
Dump Peterbilt 348	350	Diesel	26		10400		
Compactor Cat CP74B	174	Diesel	2		800		
Grader Cat 140M2	193	Diesel	1		400		
Dozer Cat D-6	150	Diesel	1		400		
Water Pull Caterpillar 613C WW	187	Diesel	1		400		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Construct Reach 3 Transition Structure					30	5/3/2020	6/13/2020		
Laborer			2		480				
Operator			2.5		600				
Teamster			0.5		120				
Foreman			0.5		120				
Pickup Ford F-150	385	Gasoline	1		240				
Dump Peterbilt 348	350	Diesel	0.5		120				
Medium Truck Ford F-350	255	Gasoline	1		240				
Compactor Cat CP74B	174	Diesel	1		240				
Backhoe Cat 450F	127	Diesel	0.5		120				
Small Compactor Cat CB24B	36	Diesel	0.5		120				
Compact Loader Cat 279D	73	Diesel	0.5		120				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		120				
Reach 3 Levee					34			7/5/2020	8/21/2020
Clear and Grub					2	7/5/2020	7/8/2020		
Laborer			4		64				
Operator			2		32				
Teamster			6		96				
Dump Peterbilt 348	350	Diesel	6		96				
Loader Cat 988	541	Diesel	1		16				
Dozer Cat D-6	150	Diesel	1		16				
Water Pull Caterpillar 613C WW	187	Diesel	1		16				
Strip					2			7/9/2020	7/10/2020
Laborer			2		32				
Operator			2		32				
Teamster			2		32				
Foreman			0.25		4				
Pickup Ford F-150	385	Gasoline	1		16				
Scraper Cat 657	600 Tractor/45 Diesel		2		32				
Loader Cat 988	541	Diesel	1		16				
Water Pull Caterpillar 613C WW	187	Diesel	1		16				
Excavate Soil Cement Trench					28	7/11/2020	8/19/2020		
Laborer			2		448				
Operator			4		896				
Foreman			0.25		56				
Pickup Ford F-150	385	Gasoline	1		224				
Scraper Cat 657	600 Tractor/45 Diesel		2		448				
Loader Cat 988	541	Diesel	1		224				
Water Pull Caterpillar 613C WW	187	Diesel	1		224				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Construct Soil Cement Toedown and Backfill Trench					28	7/12/2020	8/20/2020		
Laborer			2		448				
Operator			5		1120				
Teamster			26		5824				
Foreman			0.25		56				
Pickup Ford F-150	385	Gasoline	1		224				
Dump Peterbilt 348	350	Diesel	26		5824				
Compactor Cat CP74B	174	Diesel	2		448				
Grader Cat 140M2	193	Diesel	1		224				
Dozer Cat D-6	150	Diesel	1		224				
Water Pull Caterpillar 613C WW	187	Diesel	1		224				
Construct Above-Ground Soil Cement and Embankment					28			7/12/2020	8/20/2020
Laborer			2		448				
Operator			5		1120				
Teamster			26		5824				
Foreman			0.25		56				
Pickup Ford F-150	385	Gasoline	1		224				
Dump Peterbilt 348	350	Diesel	26		5824				
Compactor Cat CP74B	174	Diesel	2		448				
Grader Cat 140M2	193	Diesel	1		224				
Dozer Cat D-6	150	Diesel	1		224				
Water Pull Caterpillar 613C WW	187	Diesel	1		224				
Apply Palliative					1	8/21/2020	8/21/2020		
Laborer			1		8				
Teamster			1		8				
Foreman			0.1		0.8				
Pickup Ford F-150	385	Gasoline	1		8				
Flatbed Peterbilt 330	280	Diesel	1		8				
Reach 2 Levee					18	8/7/2020	8/30/2020		
Clear and Grub					1			8/7/2020	8/7/2020
Laborer			2		16				
Operator			3		24				
Teamster			2		16				
Dump Peterbilt 348	350	Diesel	2		16				
Loader Cat 988	541	Diesel	2		16				
Dozer Cat D-6	150	Diesel	1		8				
Water Pull Caterpillar 613C WW	187	Diesel	1		8				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Strip					1	8/8/2020	8/8/2020		
Laborer			2		16				
Operator			2		16				
Teamster			1		8				
Foreman			0.25		2				
Pickup Ford F-150	385	Gasoline	1		8				
Scraper Cat 657	600 Tractor/45 Diesel		1		8				
Loader Cat 988	541	Diesel	1		8				
Water Pull Caterpillar 613C WW	187	Diesel	1		8				
Excavate Soil Cement Trench					7			8/20/2020	8/28/2020
Laborer			2		112				
Operator			3		168				
Foreman			0.25		14				
Pickup Ford F-150	385	Gasoline	1		56				
Scraper Cat 657	600 Tractor/45 Diesel		2		112				
Loader Cat 988	541	Diesel	1		56				
Water Pull Caterpillar 613C WW	187	Diesel	1		56				
Construct Soil Cement Toedown and Backfill Trench					7	8/21/2020	8/29/2020		
Laborer			2		112				
Operator			5		280				
Teamster			26		1456				
Foreman			0.25		14				
Pickup Ford F-150	385	Gasoline	1		56				
Dump Peterbilt 348	350	Diesel	26		1456				
Compactor Cat CP74B	174	Diesel	2		112				
Grader Cat 140M2	193	Diesel	1		56				
Dozer Cat D-6	150	Diesel	1		56				
Water Pull Caterpillar 613C WW	187	Diesel	1		56				
Construct Above-Ground Soil Cement and Embankment					7			8/21/2020	8/29/2020
Laborer			2		112				
Operator			5		280				
Teamster			26		1456				
Foreman			0.25		14				
Pickup Ford F-150	385	Gasoline	1		56				
Dump Peterbilt 348	350	Diesel	26		1456				
Compactor Cat CP74B	174	Diesel	2		112				
Grader Cat 140M2	193	Diesel	1		56				
Dozer Cat D-6	150	Diesel	1		56				
Water Pull Caterpillar 613C WW	187	Diesel	1		56				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Apply Palliative					1	8/30/2020	8/30/2020
<i>Laborer</i>			1		8		
<i>Teamster</i>			1		8		
<i>Foreman</i>			0.1		0.8		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		8		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	1		8		
Reach 1 Levee Downstream of Desert Moon					26	8/21/2020	10/16/2020
Clear and Grub					3	8/21/2020	8/23/2020
<i>Laborer</i>			4		96	8/26/2020	8/28/2020
<i>Operator</i>			3		72		
<i>Teamster</i>			6		144		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	6		144		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	2		48		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	1		24		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	1		24		
Strip					3		
<i>Laborer</i>			2		48		
<i>Operator</i>			2		48		
<i>Teamster</i>			2		48		
<i>Foreman</i>			0.25		6		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		24		
<i>Scraper Cat 657</i>	600 Tractor/45 Diesel		2		48		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	1		24		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	1		24		
Excavate Soil Cement Trench					18	8/29/2020	9/23/2020
<i>Laborer</i>			2		528		
<i>Operator</i>			3		792		
<i>Foreman</i>			0.25		66		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		264		
<i>Scraper Cat 657</i>	600 Tractor/45 Diesel		2		528		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		132		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		132		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Construct Soil Cement Toedown and Backfill Trench					18	8/30/2020	9/24/2020		
Laborer			2		528				
Operator			4		1056				
Teamster			26		6864				
Foreman			0.25		66				
Pickup Ford F-150	385	Gasoline	1		264				
Dump Peterbilt 348	350	Diesel	26		6864				
Compactor Cat CP74B	174	Diesel	2		528				
Grader Cat 140M2	193	Diesel	0.5		132				
Dozer Cat D-6	150	Diesel	1		264				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		132				
Construct Above-Ground Soil Cement and Embankment					18			8/30/2020	9/24/2020
Laborer			2		528				
Operator			3.5		924				
Teamster			26		6864				
Foreman			0.25		66				
Pickup Ford F-150	385	Gasoline	1		264				
Dump Peterbilt 348	350	Diesel	26		6864				
Compactor Cat CP74B	174	Diesel	2		528				
Grader Cat 140M2	193	Diesel	0.5		132				
Dozer Cat D-6	150	Diesel	0.5		132				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		132				
Apply Palliative					1	9/25/2020	9/25/2020		
Laborer			1		8				
Teamster			1		8				
Foreman			0.1		0.8				
Pickup Ford F-150	385	Gasoline	1		8				
Flatbed Peterbilt 330	280	Diesel	1		8				
Reach 1 Levee Upstream of Desert Moon Clear and Grub					45	9/16/2020	11/15/2020		
					3			9/16/2020	9/18/2020
Laborer			4		96				
Operator			3		72				
Teamster			6		144				
Dump Peterbilt 348	350	Diesel	6		144				
Loader Cat 988	541	Diesel	2		48				
Dozer Cat D-6	150	Diesel	1		24				
Water Pull Caterpillar 613C WW	187	Diesel	1		24				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Strip					3	9/19/2020	9/23/2020		
Laborer			2		48				
Operator			2		48				
Teamster			2		48				
Foreman			0.25		6				
Pickup Ford F-150	385	Gasoline	1		24				
Scraper Cat 657	600 Tractor/45	Diesel	2		48				
Loader Cat 988	541	Diesel	1		24				
Water Pull Caterpillar 613C WW	187	Diesel	1		24				
Excavate Soil Cement Trench					37			9/24/2020	11/13/2020
Laborer			2		352				
Operator			3		528				
Foreman			0.25		44				
Pickup Ford F-150	385	Gasoline	1		176				
Scraper Cat 657	600 Tractor/45	Diesel	2		352				
Loader Cat 988	541	Diesel	0.5		88				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		88				
Construct Soil Cement Toedown and Backfill Trench					37	9/25/2020	11/14/2020		
Laborer			2		352				
Operator			3.5		616				
Teamster			26		4576				
Foreman			0.25		44				
Pickup Ford F-150	385	Gasoline	1		176				
Dump Peterbilt 348	350	Diesel	26		4576				
Compactor Cat CP74B	174	Diesel	2		352				
Grader Cat 140M2	193	Diesel	0.5		88				
Dozer Cat D-6	150	Diesel	0.5		88				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		88				
Construct Above-Ground Soil Cement and Embankment					37			9/25/2020	11/14/2020
Laborer			2		352				
Operator			3.5		616				
Teamster			26		4576				
Foreman			0.25		44				
Pickup Ford F-150	385	Gasoline	1		176				
Dump Peterbilt 348	350	Diesel	26		4576				
Compactor Cat CP74B	174	Diesel	2		352				
Grader Cat 140M2	193	Diesel	0.5		88				
Dozer Cat D-6	150	Diesel	0.5		88				
Water Pull Caterpillar 613C WW	187	Diesel	0.5		88				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish		
Apply Palliative					1	11/15/2020	11/15/2020		
<i>Laborer</i>			1		8				
<i>Teamster</i>			1		8				
<i>Foreman</i>			0.1		0.8				
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		8				
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	1		8				
Avenue 38 Relocation					49	1/11/2020	3/19/2020		
Construction Staking					3	1/11/2020	1/15/2020		
<i>Survey Crew</i>			1		24				
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		24				
Abandon Water Wells					5	1/16/2020	1/22/2020		
<i>Laborer</i>			2		80				
<i>Operator</i>			0.25		10				
<i>Teamster</i>			0.25		10				
<i>Foreman</i>			0.1		4				
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	0.25		10				
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		10				
Clear and Grub Avenue 38					5	1/16/2020	1/22/2020		
<i>Laborer</i>			2		80				
<i>Operator</i>			3		120				
<i>Teamster</i>			3		120				
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	3		120				
<i>Loader Cat 988</i>	541	<i>Diesel</i>	2		80				
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	1		40				
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	1		40				
Strip Avenue 38					5			1/23/2020	1/29/2020
<i>Laborer</i>			2		80				
<i>Operator</i>			1		40				
<i>Teamster</i>			1		40				
<i>Foreman</i>			0.25		10				
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		40				
<i>Scraper Cat 657</i>	600 Tractor/45 Diesel		1		40				
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		20				
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20				

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Grade Avenue 38					10	1/30/2020	2/12/2020
Survey Crew			1		80		
Laborer			2		160		
Operator			1		80		
Teamster			1		80		
Foreman			0.5		40		
Pickup Ford F-150	385	Gasoline	2		160		
Dump Peterbilt 348	350	Diesel	1		80		
Medium Truck Ford F-350	255	Gasoline	1		80		
Loader Cat 988	541	Diesel	0.25		20		
Grader Cat 140M2	193	Diesel	0.5		40		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		20		
Construct Curb, Gutter and Sidewalk					10	2/13/2020	2/26/2020
Laborer			4		320		
Foreman			0.5		40		
Pickup Ford F-150	385	Gasoline	2		160		
Medium Truck Ford F-350	255	Gasoline	1		80		
Concrete Truck Peterbilt 365	455	Diesel	4		320		
Backhoe Cat 450F	127	Diesel	0.5		40		
Small Compactor Cat CB24B	36	Diesel	0.5		40		
Water Pull Caterpillar 613C WW	187	Diesel	0.5		40		
Pave Avenue 38					10	2/27/2020	3/11/2020
Laborer			2		160		
Operator			1.75		140		
Teamster			4		320		
Foreman			1		80		
Pickup Ford F-150	385	Gasoline	2		160		
Dump Peterbilt 348	350	Diesel	4		320		
Medium Truck Ford F-350	255	Gasoline	1		80		
Compactor Cat CP74B	174	Diesel	0.5		40		
Asphalt Paver Cat AP655D	174	Diesel	1		80		
Water Pull Caterpillar 613C WW	187	Diesel	0.25		20		
Signing and Striping Avenue 38					5	3/12/2020	3/18/2020
Laborer			2		80		
Operator			0.25		10		
Teamster			0.5		20		
Foreman			1		40		
Pickup Ford F-150	385	Gasoline	2		80		
Flatbed Peterbilt 330	280	Diesel	0.5		20		
Backhoe Cat 450F	127	Diesel	0.25		10		
Open Ave 38 to Traffic					1	3/19/2020	3/19/2020

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Washington Street Widening (WSW)					18	8/29/2019	9/21/2019
WSW Traffic Control and Signage					2	8/29/2019	8/30/2019
<i>Laborer</i>			2		32		
<i>Operator</i>			0.5		8		
<i>Teamster</i>			1		16		
<i>Foreman</i>			0.5		8		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		16		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	0.5		8		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.5		8		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		8		
Clear and Grub WSW					2	8/31/2019	9/1/2019
<i>Laborer</i>			2		32		
<i>Operator</i>			3		48		
<i>Teamster</i>			3		48		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	3		48		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	2		32		
<i>Dozer Cat D-6</i>	150	<i>Diesel</i>	1		16		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	1		16		
Strip WSW					2	9/4/2019	9/5/2019
<i>Laborer</i>			2		32		
<i>Operator</i>			1		16		
<i>Teamster</i>			1		16		
<i>Foreman</i>			0.25		4		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	1		16		
<i>Scraper Cat 657</i>	600 Tractor/45 Diesel		1		16		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.5		8		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		8		
Grade WSW					2	9/6/2019	9/7/2019
<i>Survey Crew</i>			1		16		
<i>Laborer</i>			2		32		
<i>Operator</i>			1		16		
<i>Teamster</i>			1		16		
<i>Foreman</i>			0.5		8		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		32		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	1		16		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		16		
<i>Loader Cat 988</i>	541	<i>Diesel</i>	0.25		4		
<i>Grader Cat 140M2</i>	193	<i>Diesel</i>	0.5		8		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		4		

Thousand Palms Flood Control Project

Engineering Construction Schedule

Task Name	HP	Fuel	Number	Duration	Hours	Start	Finish
Construct Curb, Gutter and Sidewalk					5	9/8/2019	9/14/2019
<i>Laborer</i>			4		160		
<i>Foreman</i>			0.5		20		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		80		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		40		
<i>Concrete Truck Peterbilt 365</i>	455	<i>Diesel</i>	4		160		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.5		20		
<i>Small Compactor Cat CB24B</i>	36	<i>Diesel</i>	0.5		20		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.5		20		
Pave WSW					2		
<i>Laborer</i>			2		32		
<i>Operator</i>			1.75		28		
<i>Teamster</i>			4		64		
<i>Foreman</i>			1		16		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		32		
<i>Dump Peterbilt 348</i>	350	<i>Diesel</i>	4		64		
<i>Medium Truck Ford F-350</i>	255	<i>Gasoline</i>	1		16		
<i>Compactor Cat CP74B</i>	174	<i>Diesel</i>	0.5		8		
<i>Asphalt Paver Cat AP655D</i>	174	<i>Diesel</i>	1		16		
<i>Water Pull Caterpillar 613C WW</i>	187	<i>Diesel</i>	0.25		4		
Signing and Striping WSW					2	9/19/2019	9/20/2019
<i>Laborer</i>			2		32		
<i>Operator</i>			0.25		4		
<i>Teamster</i>			0.5		8		
<i>Foreman</i>			1		16		
<i>Pickup Ford F-150</i>	385	<i>Gasoline</i>	2		32		
<i>Flatbed Peterbilt 330</i>	280	<i>Diesel</i>	0.5		8		
<i>Backhoe Cat 450F</i>	127	<i>Diesel</i>	0.25		4		
Open WSW to Traffic					1	9/21/2019	9/21/2019

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

Assumptions:

- 1) Equipment emissions factors are used based on the year of the start date for each subtask.
- 2) Current version of CARB EMFAC model (EMFAC 2014), using fleet average Salton Sea Air Basin data, was used to determine the emissions factors.

Onroad Emission Factors - 2018 (pounds/mile)

	VOC	CO	NOx	PM10	PM2.5	SOx	Vehicle Class Assumption
Passenger	0.00062	0.00454	0.00048	0.00010	0.00004	0.00001	Weighted mix of LDA, LDT, LDT1, and MDV (Gasoline)
F-150 Pickup	0.00093	0.00665	0.00083	0.00010	0.00004	0.00001	MDV (Gasoline)
F-350 Pickup	0.00023	0.00146	0.00697	0.00027	0.00014	0.00001	LHDT2 (Diesel)
Fuel/Misc. Deliveries	0.00012	0.00038	0.00776	0.00037	0.00019	0.00002	T6 Instate Heavy (Diesel)
HD Trucks	0.00031	0.00107	0.01389	0.00033	0.00019	0.00003	T7 Tractor Construction (Diesel)

Onroad Emission Factors - 2019 (pounds/mile)

	VOC	CO	NOx	PM10	PM2.5	SOx	Vehicle Class Assumption
Passenger	0.00058	0.00419	0.00044	0.00010	0.00004	0.00001	Weighted mix of LDA, LDT, LDT1, and MDV (Gasoline)
F-150 Pickup	0.00090	0.00623	0.00076	0.00010	0.00004	0.00001	MDV (Gasoline)
F-350 Pickup	0.00021	0.00132	0.00607	0.00027	0.00013	0.00001	LHDT2 (Diesel)
Fuel/Misc. Deliveries	0.00012	0.00036	0.00709	0.00037	0.00018	0.00002	T6 Instate Heavy (Diesel)
HD Trucks	0.00028	0.00100	0.01277	0.00031	0.00017	0.00003	T7 Tractor Construction (Diesel)

Onroad Emission Factors - 2020 (pounds/mile)

	VOC	CO	NOx	PM10	PM2.5	SOx	Vehicle Class Assumption
Passenger	0.00054	0.00388	0.00040	0.00010	0.00004	0.00001	Weighted mix of LDA, LDT, LDT1, and MDV (Gasoline)
F-150 Pickup	0.00087	0.00579	0.00069	0.00010	0.00004	0.00001	MDV (Gasoline)
F-350 Pickup	0.00019	0.00120	0.00529	0.00026	0.00013	0.00001	LHDT2 (Diesel)
Fuel/Misc. Deliveries	0.00009	0.00029	0.00626	0.00035	0.00016	0.00002	T6 Instate Heavy (Diesel)
HD Trucks	0.00022	0.00080	0.01108	0.00028	0.00014	0.00003	T7 Tractor Construction (Diesel)

Emissions for Tasks Starting in 2018

		Daily Emissions lbs							Task Total Emissions lbs						
9/19/2018 9/30/2018		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
Stake Levee and Channel Work Area	Passenger	30	0.02	0.14	0.01	0.00	0.00	0.00	300	0.19	1.36	0.14	0.03	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	300	0.28	2.00	0.25	0.03	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.05	0.34	0.04	0.01	0.00	0.00	Totals	0.47	3.36	0.39	0.06	0.03	0.01

		Daily Emissions lbs							Task Total Emissions lbs						
10/3/2018 10/14/2018		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
Install BMPs	Passenger	180	0.11	0.82	0.09	0.02	0.01	0.00	1,800	1.12	8.18	0.87	0.19	0.08	0.02
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	300	0.28	2.00	0.25	0.03	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	300	0.07	0.44	2.09	0.08	0.04	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.15	1.06	0.32	0.03	0.01	0.00	Totals	1.47	10.62	3.21	0.30	0.13	0.03

		Daily Emissions lbs							Task Total Emissions lbs						
10/3/2018 10/14/2018		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
Relocate Fences	Passenger	90	0.06	0.41	0.04	0.01	0.00	0.00	900	0.56	4.09	0.43	0.09	0.04	0.01
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	300	0.28	2.00	0.25	0.03	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	100	0.03	0.11	1.39	0.03	0.02	0.00
	Totals		0.10	0.66	0.76	0.03	0.01	0.00	Totals	0.87	6.19	2.07	0.16	0.07	0.02

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

10/17/2018 11/1/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Erect Soil Cement Batch Plant	Passenger	270	0.17	1.23	0.13	0.03	0.01	0.00	5,400	3.37	24.54	2.61	0.56	0.23	0.06
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	1,200	1.11	7.98	1.00	0.12	0.05	0.01
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	600	0.14	0.88	4.18	0.16	0.08	0.01
	HD Trucks	500	0.15	0.53	6.94	0.16	0.09	0.02	1,000	0.31	1.07	13.89	0.33	0.19	0.03
Totals			0.38	2.20	7.33	0.21	0.11	0.02	Totals	4.93	34.47	21.68	1.17	0.56	0.11

11/14/2018 2/3/2019		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Trial Soil Cement Mixes	Passenger	30	0.02	0.14	0.01	0.00	0.00	0.00	1,800	1.12	8.18	0.87	0.19	0.08	0.02
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	1,800	1.67	11.98	1.50	0.19	0.08	0.02
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.05	0.34	0.04	0.01	0.00	0.00	Totals	2.79	20.16	2.37	0.37	0.16	0.04

9/19/2018 9/30/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Relocate Desert Moon Drive Utilities	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	8,400	5.25	38.18	4.06	0.87	0.36	0.09
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	2,400	2.22	15.97	2.00	0.25	0.10	0.03
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	1,200	0.28	1.76	8.36	0.33	0.17	0.01
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	250	0.08	0.27	3.47	0.08	0.05	0.01
Totals			0.21	1.45	1.05	0.05	0.03	0.00	Totals	7.83	56.17	17.89	1.52	0.68	0.14

10/17/2018 12/9/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Relocate Via Las Palmas Utilities	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	8,400	5.25	38.18	4.06	0.87	0.36	0.09
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	1,200	1.11	7.98	1.00	0.12	0.05	0.01
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	1,200	0.28	1.76	8.36	0.33	0.17	0.01
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	50	0.02	0.05	0.69	0.02	0.01	0.00
Totals			0.18	1.25	1.03	0.05	0.02	0.00	Totals	6.65	47.97	14.11	1.33	0.59	0.12

10/17/2018 12/9/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Relocate CCGC Utilities	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	8,400	5.25	38.18	4.06	0.87	0.36	0.09
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	1,200	1.11	7.98	1.00	0.12	0.05	0.01
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	1,200	0.28	1.76	8.36	0.33	0.17	0.01
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	250	0.08	0.27	3.47	0.08	0.05	0.01
Totals			0.18	1.25	1.03	0.05	0.02	0.00	Totals	6.72	48.19	16.89	1.40	0.63	0.13

10/17/2018 3/31/2019		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Relocate Avenue 38 Sewer	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	25,200	15.75	114.53	12.18	2.60	1.09	0.27
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	3,600	3.34	23.95	2.99	0.37	0.16	0.04
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	3,600	0.83	5.27	25.08	0.98	0.50	0.04
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	1,000	0.31	1.07	13.89	0.33	0.19	0.03
Totals			0.18	1.25	1.03	0.05	0.02	0.00	Totals	20.22	144.83	54.14	4.28	1.93	0.39

10/17/2018 11/4/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Haul Road Construction	Passenger	90	0.06	0.41	0.04	0.01	0.00	0.00	1,350	0.84	6.14	0.65	0.14	0.06	0.01
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	450	0.42	2.99	0.37	0.05	0.02	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.08	0.61	0.07	0.01	0.01	0.00	Totals	1.26	9.13	1.03	0.19	0.08	0.02

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

11/7/2018 11/8/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Haul Road Signage	Passenger	60	0.04	0.27	0.03	0.01	0.00	0.00	120	0.07	0.55	0.06	0.01	0.01	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	60	0.01	0.09	0.42	0.02	0.01	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.04	0.32	0.24	0.01	0.01	0.00	Totals	0.09	0.63	0.48	0.03	0.01	0.00

Washington Street Crossing (WSC)

10/17/2018 10/18/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Remove Well Site Wall	Passenger	150	0.09	0.68	0.07	0.02	0.01	0.00	300	0.19	1.36	0.14	0.03	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	60	0.06	0.40	0.05	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	100	0.03	0.11	1.39	0.03	0.02	0.00
Totals			0.14	0.93	0.79	0.04	0.02	0.00	Totals	0.27	1.87	1.58	0.07	0.03	0.01

10/19/2018 10/20/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Erect Temporary Fencing	Passenger	120	0.07	0.55	0.06	0.01	0.01	0.00	240	0.15	1.09	0.12	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	60	0.06	0.40	0.05	0.01	0.00	0.00
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	60	0.01	0.09	0.42	0.02	0.01	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.11	0.79	0.29	0.02	0.01	0.00	Totals	0.22	1.58	0.58	0.05	0.02	0.00

10/21/2018 11/3/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Detour	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	2,400	1.50	10.91	1.16	0.25	0.10	0.03
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	600	0.56	3.99	0.50	0.06	0.03	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	60	0.02	0.06	0.83	0.02	0.01	0.00	600	0.18	0.64	8.33	0.20	0.11	0.02
Totals			0.22	1.55	1.00	0.05	0.02	0.01	Totals	2.24	15.54	9.99	0.51	0.24	0.05

11/4/2018 11/7/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Detour Signing and Striping	Passenger	120	0.07	0.55	0.06	0.01	0.01	0.00	240	0.15	1.09	0.12	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	60	0.06	0.40	0.05	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.10	0.74	0.08	0.02	0.01	0.00	Totals	0.21	1.49	0.17	0.03	0.01	0.00

Detour Traffic

11/8/2018 12/19/2018		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavation	Passenger	300	0.19	1.36	0.14	0.03	0.01	0.00	9,000	5.62	40.90	4.35	0.93	0.39	0.10
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	1,800	1.67	11.98	1.50	0.19	0.08	0.02
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	900	0.21	1.32	6.27	0.24	0.12	0.01
	HD Trucks	165	0.05	0.18	2.29	0.05	0.03	0.01	3,214	0.98	3.43	44.64	1.05	0.60	0.11
Totals			0.30	1.98	2.70	0.10	0.05	0.01	Totals	8.48	57.63	56.76	2.42	1.19	0.24

12/20/2018 8/28/2019		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct WSC	Passenger	660	0.41	3.00	0.32	0.07	0.03	0.01	118,800	74.23	539.94	57.40	12.27	5.16	1.27
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	5,400	1.25	7.91	37.61	1.47	0.74	0.06
	HD Trucks	338	0.10	0.36	4.70	0.11	0.06	0.01	15,484	4.72	16.53	215.06	5.08	2.88	0.52
Totals			0.52	3.40	5.22	0.19	0.10	0.02	Totals	80.20	564.38	310.08	18.82	8.78	1.85

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

12/20/2018 1/2/2019		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Construct Storm Drains Ave 38 to Collection Basin	Passenger	270	0.17	1.23	0.13	0.03	0.01	0.00	2,700	1.69	12.27	1.30	0.28	0.12	0.03
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	300	0.28	2.00	0.25	0.03	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.21	0.01	0.00	0.00	300	0.07	0.44	2.09	0.08	0.04	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	1,000	0.31	1.07	13.89	0.33	0.19	0.03
Totals		0.23	1.58	1.75	0.07	0.04	0.01	Totals	2.34	15.77	17.53	0.72	0.36	0.07	

12/12/2018 12/13/2018		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Construction Staking	Passenger	60	0.04	0.27	0.03	0.01	0.00	0.00	120	0.07	0.55	0.06	0.01	0.01	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.04	0.27	0.03	0.01	0.00	0.00	Totals	0.07	0.55	0.06	0.01	0.01	0.00	

12/14/2018 12/16/2018		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Clear and Grub	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	630	0.39	2.86	0.30	0.07	0.03	0.01
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	90	0.08	0.60	0.07	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	300	0.09	0.32	4.17	0.10	0.06	0.01
Totals		0.19	1.26	1.52	0.06	0.03	0.01	Totals	0.57	3.78	4.55	0.17	0.09	0.02	

12/19/2018 12/19/2018		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Strip	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	240	0.15	1.09	0.12	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	30	0.03	0.20	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	100	0.03	0.11	1.39	0.03	0.02	0.00
Totals		0.21	1.40	1.53	0.06	0.03	0.01	Totals	0.21	1.40	1.53	0.06	0.03	0.01	

12/20/2018 1/2/2019		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Construct Detour	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	2,400	1.50	10.91	1.16	0.25	0.10	0.03
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	600	0.56	3.99	0.50	0.06	0.03	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	19	0.01	0.02	0.26	0.01	0.00	0.00	185	0.06	0.20	2.57	0.06	0.03	0.01
Totals		0.21	1.51	0.42	0.04	0.02	0.00	Totals	2.11	15.10	4.23	0.37	0.16	0.04	

12/12/2018 12/13/2018		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Construction Staking	Passenger	30	0.02	0.14	0.01	0.00	0.00	0.00	60	0.04	0.27	0.03	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	60	0.06	0.40	0.05	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.05	0.34	0.04	0.01	0.00	0.00	Totals	0.09	0.67	0.08	0.01	0.01	0.00	

12/14/2018 12/16/2018		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
Clear and Grub	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	630	0.39	2.86	0.30	0.07	0.03	0.01
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	90	0.08	0.60	0.07	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	300	0.09	0.32	4.17	0.10	0.06	0.01
Totals		0.19	1.26	1.52	0.06	0.03	0.01	Totals	0.57	3.78	4.55	0.17	0.09	0.02	

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	12/19/2018 12/19/2018														
	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	240	0.15	1.09	0.12	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	30	0.03	0.20	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	130	0.04	0.14	1.81	0.04	0.02	0.00	728	0.22	0.78	10.11	0.24	0.14	0.02
Totals			0.22	1.43	1.95	0.07	0.04	0.01	Totals	0.40	2.07	10.25	0.27	0.15	0.03

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Detour	12/20/2018 1/9/2019														
	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	3,600	2.25	16.36	1.74	0.37	0.16	0.04
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	900	0.83	5.99	0.75	0.09	0.04	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	361	0.11	0.39	5.01	0.12	0.07	0.01	5,163	1.58	5.51	71.70	1.69	0.96	0.17
Totals			0.32	1.88	5.18	0.15	0.08	0.02	Totals	4.66	27.86	74.19	2.16	1.15	0.22

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Desert Moon Drive Culvert Construction Staking	12/12/2018 12/13/2018														
	Passenger	30	0.02	0.14	0.01	0.00	0.00	0.00	60	0.04	0.27	0.03	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	60	0.06	0.40	0.05	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.05	0.34	0.04	0.01	0.00	0.00	Totals	0.09	0.67	0.08	0.01	0.01	0.00

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub	12/14/2018 12/16/2018														
	Passenger	210	0.13	0.95	0.10	0.02	0.01	0.00	630	0.39	2.86	0.30	0.07	0.03	0.01
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	90	0.08	0.60	0.07	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	300	0.09	0.32	4.17	0.10	0.06	0.01
Totals			0.19	1.26	1.52	0.06	0.03	0.01	Totals	0.57	3.78	4.55	0.17	0.09	0.02

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	12/19/2018 12/19/2018														
	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	240	0.15	1.09	0.12	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.20	0.02	0.00	0.00	0.00	30	0.03	0.20	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.03	0.11	1.39	0.03	0.02	0.00	100	0.03	0.11	1.39	0.03	0.02	0.00
Totals			0.21	1.40	1.53	0.06	0.03	0.01	Totals	0.21	1.40	1.53	0.06	0.03	0.01

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Detour	12/20/2018 1/2/2019														
	Passenger	240	0.15	1.09	0.12	0.02	0.01	0.00	2,400	1.50	10.91	1.16	0.25	0.10	0.03
	F-150 Pickup	60	0.06	0.40	0.05	0.01	0.00	0.00	600	0.56	3.99	0.50	0.06	0.03	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.02	0.05	0.69	0.02	0.01	0.00	396	0.12	0.42	5.50	0.13	0.07	0.01
Totals			0.22	1.54	0.85	0.05	0.02	0.00	Totals	2.18	15.32	7.16	0.44	0.20	0.05

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT						VMT							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Daily Needs	F-150 Pickup	300	0.28	2.00	0.25	0.03	0.01	0.00	21,000	19.46	139.72	17.47	2.17	0.92	0.26
	HD Trucks	748	0.23	0.80	10.39	0.25	0.14	0.02	12,200	3.72	13.02	169.45	4.00	2.27	0.41
	Delivery	60	0.01	0.02	0.47	0.02	0.01	0.00	4,200	0.52	1.59	32.60	1.57	0.78	0.10
	Totals			0.51	2.82	11.10	0.30	0.16	0.03	Totals	23.71	154.33	219.51	7.74	3.97

Thousand Palms Flood Control Project

Construction Emissions
Onroad Equipment Emissions

Emissions for Tasks Starting in 2019

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
8/29/2019 9/25/2019	Restore Roadway	Passenger	270	0.16	1.13	0.12	0.03	0.01	5,400	3.12	22.62	2.36	0.56	0.23	0.06
		F-150 Pickup	60	0.05	0.37	0.05	0.01	0.00	1,200	1.08	7.47	0.91	0.12	0.05	0.01
		F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
		HD Trucks	75	0.02	0.08	0.96	0.02	0.01	1,425	0.40	1.43	18.19	0.45	0.24	0.05
		Totals		0.23	1.58	1.12	0.06	0.03	0.01	Totals	4.61	31.52	21.46	1.13	0.53

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
8/29/2019 9/25/2019	Restore Sidewalks and Landscaping	Passenger	210	0.12	0.88	0.09	0.02	0.01	4,200	2.43	17.59	1.84	0.43	0.18	0.04
		F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	600	0.54	3.74	0.46	0.06	0.03	0.01
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	600	0.13	0.79	3.64	0.16	0.08	0.01
		HD Trucks	78	0.02	0.08	0.99	0.02	0.01	1,414	0.40	1.42	18.05	0.44	0.24	0.05
		Totals		0.18	1.18	1.29	0.06	0.03	0.01	Totals	3.50	23.54	23.99	1.10	0.53

		Daily Emissions lbs							Task Total Emissions lbs							
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx	
		Daily							Total							
9/28/2019 10/4/2019	Remove Detour	Passenger	240	0.14	1.01	0.10	0.02	0.01	1,200	0.69	5.03	0.52	0.12	0.05	0.01	
		F-150 Pickup	60	0.05	0.37	0.05	0.01	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00	
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00	
		HD Trucks	168	0.05	0.17	2.14	0.05	0.03	0.01	768	0.22	0.77	9.80	0.24	0.13	0.03
		Totals		0.25	1.59	2.48	0.09	0.05	0.01	Totals	1.21	7.86	11.47	0.44	0.22	0.04

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
10/5/2019 10/18/2019	Restore Well Site Wall	Passenger	180	0.10	0.75	0.08	0.02	0.01	1,800	1.04	7.54	0.79	0.19	0.08	0.02
		F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	300	0.06	0.40	1.82	0.08	0.04	0.00
		HD Trucks	64	0.02	0.06	0.81	0.02	0.01	188	0.05	0.19	2.40	0.06	0.03	0.01
		Totals		0.16	1.04	1.10	0.05	0.02	0.00	Totals	1.43	9.99	5.24	0.36	0.16

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
1/3/2019 1/3/2019	CCGC Culvert	Detour Signing and Striping	Passenger	90	0.05	0.38	0.04	0.01	90	0.05	0.38	0.04	0.01	0.00	0.00
		F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	30	0.03	0.19	0.02	0.00	0.00	0.00
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	30	0.01	0.04	0.18	0.01	0.00	0.00
		HD Trucks		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
		Totals		0.09	0.60	0.24	0.02	0.01	0.00	Totals	0.09	0.60	0.24	0.02	0.01

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
1/4/2019 9/12/2019	Construct Culvert	Passenger	540	0.31	2.26	0.24	0.06	0.02	97,200	56.21	407.13	42.51	10.05	4.23	1.01
		F-150 Pickup	120	0.11	0.75	0.09	0.01	0.01	21,600	19.45	134.47	16.42	2.24	0.94	0.26
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	5,400	1.14	7.13	32.80	1.45	0.72	0.06
		HD Trucks	256	0.07	0.26	3.27	0.08	0.04	2,305	0.65	2.31	29.42	0.72	0.39	0.08
		Totals		0.50	3.31	3.78	0.16	0.08	0.02	Totals	77.46	551.03	121.14	14.45	6.29

		Daily Emissions lbs							Task Total Emissions lbs						
		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	VMT	VOC	CO	NOx	PM10	PM2.5	SOx
		Daily							Total						
9/13/2019 9/19/2019	Remove Detour	Passenger	240	0.14	1.01	0.10	0.02	0.01	1,200	0.69	5.03	0.52	0.12	0.05	0.01
		F-150 Pickup	60	0.05	0.37	0.05	0.01	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00
		F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
		HD Trucks	50	0.01	0.05	0.64	0.02	0.01	250	0.07	0.25	3.19	0.08	0.04	0.01
		Totals		0.21	1.47	0.97	0.05	0.03	0.01	Totals	1.07	7.34	4.86	0.27	0.13

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

		Daily Emissions lbs							Task Total Emissions lbs						
9/20/2019 9/26/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Tie in Channel	Passenger	360	0.21	1.51	0.16	0.04	0.02	0.00	1,800	1.04	7.54	0.79	0.19	0.08	0.02
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	HD Trucks	300	0.09	0.30	3.83	0.09	0.05	0.01	1,500	0.43	1.51	19.15	0.47	0.26	0.05
	Totals		0.33	2.04	4.19	0.14	0.07	0.01	Totals	1.63	10.18	20.96	0.71	0.36	0.07

		Daily Emissions lbs							Task Total Emissions lbs						
1/10/2019 1/10/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Via Las Palmas Culvert Detour Signing and Striping	Passenger	90	0.05	0.38	0.04	0.01	0.00	0.00	90	0.05	0.38	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	30	0.03	0.19	0.02	0.00	0.00	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	30	0.01	0.04	0.18	0.01	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.09	0.60	0.24	0.02	0.01	0.00	Totals	0.09	0.60	0.24	0.02	0.01	0.00

		Daily Emissions lbs							Task Total Emissions lbs						
1/11/2019 9/19/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Culvert	Passenger	540	0.31	2.26	0.24	0.06	0.02	0.01	97,200	56.21	407.13	42.51	10.05	4.23	1.01
	F-150 Pickup	120	0.11	0.75	0.09	0.01	0.01	0.00	21,600	19.45	134.47	16.42	2.24	0.94	0.26
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	5,400	1.14	7.13	32.80	1.45	0.72	0.06
	HD Trucks	126	0.04	0.13	1.61	0.04	0.02	0.00	762	0.22	0.76	9.73	0.24	0.13	0.03
	Totals		0.46	3.17	2.12	0.12	0.05	0.01	Totals	77.02	549.48	101.45	13.97	6.02	1.36

		Daily Emissions lbs							Task Total Emissions lbs						
9/20/2019 9/26/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Remove Detour	Passenger	240	0.14	1.01	0.10	0.02	0.01	0.00	1,200	0.69	5.03	0.52	0.12	0.05	0.01
	F-150 Pickup	60	0.05	0.37	0.05	0.01	0.00	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.20	1.42	0.33	0.04	0.02	0.00	Totals	1.00	7.09	1.66	0.20	0.09	0.02

		Daily Emissions lbs							Task Total Emissions lbs						
9/27/2019 10/3/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Tie in Levees	Passenger	360	0.21	1.51	0.16	0.04	0.02	0.00	1,800	1.04	7.54	0.79	0.19	0.08	0.02
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	HD Trucks	300	0.09	0.30	3.83	0.09	0.05	0.01	1,500	0.43	1.51	19.15	0.47	0.26	0.05
	Totals		0.33	2.04	4.19	0.14	0.07	0.01	Totals	1.63	10.18	20.96	0.71	0.36	0.07

		Daily Emissions lbs							Task Total Emissions lbs						
1/3/2019 1/3/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Desert Moon Drive Culvert Detour Signing and Striping	Passenger	90	0.05	0.38	0.04	0.01	0.00	0.00	90	0.05	0.38	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	30	0.03	0.19	0.02	0.00	0.00	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	30	0.01	0.04	0.18	0.01	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.09	0.60	0.24	0.02	0.01	0.00	Totals	0.09	0.60	0.24	0.02	0.01	0.00

		Daily Emissions lbs							Task Total Emissions lbs						
1/4/2019 9/12/2019		VMT	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Culvert	Passenger	540	0.31	2.26	0.24	0.06	0.02	0.01	97,200	56.21	407.13	42.51	10.05	4.23	1.01
	F-150 Pickup	120	0.11	0.75	0.09	0.01	0.01	0.00	21,600	19.45	134.47	16.42	2.24	0.94	0.26
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	5,400	1.14	7.13	32.80	1.45	0.72	0.06
	HD Trucks	113	0.03	0.11	1.45	0.04	0.02	0.00	869	0.25	0.87	11.10	0.27	0.15	0.03
	Totals		0.46	3.16	1.96	0.11	0.05	0.01	Totals	77.05	549.59	102.82	14.00	6.04	1.36

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

		9/3/2019		9/19/2019		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Remove Detour	Passenger	240	0.14	1.01	0.10	0.02	0.01	0.00	1,200	0.69	5.03	0.52	0.12	0.05	0.01	1,200	0.69	5.03	0.52	0.12	0.05	0.01
	F-150 Pickup	60	0.05	0.37	0.05	0.01	0.00	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	HD Trucks	50	0.01	0.05	0.64	0.02	0.01	0.00	250	0.07	0.25	3.19	0.08	0.04	0.01	250	0.07	0.25	3.19	0.08	0.04	0.01
	Totals		0.21	1.47	0.97	0.05	0.03	0.01	Totals	1.07	7.34	4.86	0.27	0.13	0.03	Totals	1.07	7.34	4.86	0.27	0.13	0.03

		9/20/2019		9/26/2019		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Tie in Levees	Passenger	360	0.21	1.51	0.16	0.04	0.02	0.00	1,800	1.04	7.54	0.79	0.19	0.08	0.02	1,800	1.04	7.54	0.79	0.19	0.08	0.02
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00
	F-350 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	HD Trucks	300	0.09	0.30	3.83	0.09	0.05	0.01	1,500	0.43	1.51	19.15	0.47	0.26	0.05	1,500	0.43	1.51	19.15	0.47	0.26	0.05
	Totals		0.33	2.04	4.19	0.14	0.07	0.01	Totals	1.63	10.18	20.96	0.71	0.36	0.07	Totals	1.63	10.18	20.96	0.71	0.36	0.07

		11/1/2019		11/7/2019		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Reach 4 Channel Clear and Grub	Passenger	390	0.23	1.63	0.17	0.04	0.02	0.00	1,950	1.13	8.17	0.85	0.20	0.08	0.02	1,950	1.13	8.17	0.85	0.20	0.08	0.02
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	300	0.09	0.30	3.83	0.09	0.05	0.01	1,500	0.43	1.51	19.15	0.47	0.26	0.05	1,500	0.43	1.51	19.15	0.47	0.26	0.05
	Totals		0.31	1.93	4.00	0.13	0.07	0.01	Totals	1.55	9.67	20.00	0.67	0.34	0.07	Totals	1.55	9.67	20.00	0.67	0.34	0.07

		11/8/2019		11/14/2019		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Strip	Passenger	270	0.16	1.13	0.12	0.03	0.01	0.00	1,350	0.78	5.65	0.59	0.14	0.06	0.01	1,350	0.78	5.65	0.59	0.14	0.06	0.01
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00	150	0.14	0.93	0.11	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.18	1.32	0.14	0.03	0.01	0.00	Totals	0.92	6.59	0.70	0.16	0.07	0.02	Totals	0.92	6.59	0.70	0.16	0.07	0.02

		11/15/2019		4/16/2020		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Excavate Channel	Passenger	330	0.19	1.38	0.14	0.03	0.01	0.00	36,300	20.99	152.04	15.87	3.75	1.58	0.38	36,300	20.99	152.04	15.87	3.75	1.58	0.38
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	3,300	2.97	20.54	2.51	0.34	0.14	0.04	3,300	2.97	20.54	2.51	0.34	0.14	0.04
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.22	1.57	0.17	0.04	0.02	0.00	Totals	23.96	172.59	18.38	4.09	1.72	0.42	Totals	23.96	172.59	18.38	4.09	1.72	0.42

		11/17/2019		5/2/2020		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Construct Soil Cement Lining	Passenger	1,020	0.59	4.27	0.45	0.11	0.04	0.01	122,400	70.78	512.68	53.53	12.65	5.32	1.27	122,400	70.78	512.68	53.53	12.65	5.32	1.27
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	3,600	3.24	22.41	2.74	0.37	0.16	0.04	3,600	3.24	22.41	2.74	0.37	0.16	0.04
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	1,115	0.32	1.12	14.23	0.35	0.19	0.04	131,159	37.18	131.63	1,674.25	41.03	22.46	4.34	131,159	37.18	131.63	1,674.25	41.03	22.46	4.34
	Totals		0.93	5.58	14.70	0.46	0.24	0.05	Totals	111.20	666.72	1,730.51	54.05	27.94	5.65	Totals	111.20	666.72	1,730.51	54.05	27.94	5.65

		8/29/2019		8/30/2019		Daily Emissions lbs							Task Total Emissions lbs									
		VMT		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	VMT		Total		VOC	CO	NOx	PM10	PM2.5	SOx	
Washington Street Widening (WSW) WSW Traffic Control and Signage	Passenger	120	0.07	0.50	0.05	0.01	0.01	0.00	240	0.14	1.01	0.10	0.02	0.01	0.00	240	0.14	1.01	0.10	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.19	0.02	0.00	0.00	0.00	60	0.05	0.37	0.05	0.01	0.00	0.00	60	0.05	0.37	0.05	0.01	0.00	0.00
	F-350 Pickup	60	0.01	0.08	0.36	0.02	0.01	0.00	120	0.03	0.16	0.73	0.03	0.02	0.00	120	0.03	0.16	0.73	0.03	0.02	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.11	0.77	0.44	0.03	0.01	0.00	Totals	0.22	1.54	0.88	0.06	0.03	0.00	Totals	0.22	1.54	0.88	0.06	0.03	0.00

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
8/31/2019 9/1/2019	Clear and Grub WSW	240	0.14	1.01	0.10	0.02	0.01	0.00	480	0.28	2.01	0.21	0.05	0.02	0.00
	Passenger	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	150	0.04	0.15	1.91	0.05	0.03	0.00	300	0.09	0.30	3.83	0.09	0.05	0.01
	HD Trucks	Totals	0.18	1.16	2.02	0.07	0.04	0.01	Totals	0.36	2.31	4.04	0.14	0.07	0.01

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
9/4/2019 9/5/2019	Strip WSW	150	0.09	0.63	0.07	0.02	0.01	0.00	300	0.17	1.26	0.13	0.03	0.01	0.00
	Passenger	30	0.03	0.19	0.02	0.00	0.00	0.00	60	0.05	0.37	0.05	0.01	0.00	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	48	0.01	0.05	0.61	0.02	0.01	0.00	72	0.02	0.07	0.92	0.02	0.01	0.00
	HD Trucks	Totals	0.13	0.86	0.70	0.03	0.02	0.00	Totals	0.25	1.70	1.10	0.06	0.03	0.01

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
9/6/2019 9/7/2019	Grade WSW	180	0.10	0.75	0.08	0.02	0.01	0.00	360	0.21	1.51	0.16	0.04	0.02	0.00
	Passenger	60	0.05	0.37	0.05	0.01	0.00	0.00	120	0.11	0.75	0.09	0.01	0.01	0.00
	F-150 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	60	0.01	0.08	0.36	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	Totals	0.16	1.17	0.31	0.03	0.01	0.00	Totals	0.33	2.33	0.61	0.07	0.03	0.01

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
9/8/2019 9/14/2019	Construct Curb, Gutter and Sidewalk	150	0.09	0.63	0.07	0.02	0.01	0.00	750	0.43	3.14	0.33	0.08	0.03	0.01
	Passenger	60	0.05	0.37	0.05	0.01	0.00	0.00	300	0.27	1.87	0.23	0.03	0.01	0.00
	F-150 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	150	0.03	0.20	0.91	0.04	0.02	0.00
	F-350 Pickup	55	0.02	0.06	0.70	0.02	0.01	0.00	276	0.08	0.28	3.52	0.09	0.05	0.01
	HD Trucks	Totals	0.16	1.10	1.00	0.05	0.02	0.00	Totals	0.81	5.48	4.99	0.24	0.11	0.02

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
9/15/2019 9/18/2019	Pave WSW	270	0.16	1.13	0.12	0.03	0.01	0.00	540	0.31	2.26	0.24	0.06	0.02	0.01
	Passenger	60	0.05	0.37	0.05	0.01	0.00	0.00	120	0.11	0.75	0.09	0.01	0.01	0.00
	F-150 Pickup	30	0.01	0.04	0.18	0.01	0.00	0.00	60	0.01	0.08	0.36	0.02	0.01	0.00
	F-350 Pickup	788	0.22	0.79	10.05	0.25	0.13	0.03	1,560	0.44	1.57	19.91	0.49	0.27	0.05
	HD Trucks	Totals	0.44	2.33	10.40	0.29	0.15	0.03	Totals	0.88	4.65	20.61	0.57	0.30	0.06

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
9/19/2019 9/20/2019	Signing and Striping WSW	150	0.09	0.63	0.07	0.02	0.01	0.00	300	0.17	1.26	0.13	0.03	0.01	0.00
	Passenger	60	0.05	0.37	0.05	0.01	0.00	0.00	120	0.11	0.75	0.09	0.01	0.01	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	50	0.01	0.05	0.64	0.02	0.01	0.00	100	0.03	0.10	1.28	0.03	0.02	0.00
	HD Trucks	Totals	0.15	1.05	0.75	0.04	0.02	0.00	Totals	0.31	2.10	1.50	0.07	0.04	0.01

		Daily Emissions lbs						Task Total Emissions lbs							
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Daily Needs	F-150 Pickup	300	0.27	1.87	0.23	0.03	0.01	0.00	74,100	66.73	461.29	56.32	7.67	3.23	0.90
	HD Trucks	748	0.21	0.75	9.55	0.23	0.13	0.02	43,047	12.20	43.20	549.50	13.46	7.37	1.42
	Delivery	60	0.01	0.02	0.43	0.02	0.01	0.00	14,820	1.71	5.27	105.08	5.42	2.66	0.34
	Totals	Totals	0.49	2.64	10.20	0.29	0.15	0.03	Totals	80.64	509.76	710.90	26.55	13.26	2.66

Thousand Palms Flood Control Project

Construction Emissions
Onroad Equipment Emissions

Emissions for Tasks Starting in 2020

Reach 3 Levee			Daily Emissions lbs					Task Total Emissions lbs							
8/21/2020	8/21/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Apply Palliative	Passenger	90	0.05	0.35	0.04	0.01	0.00	0.00	90	0.05	0.35	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	30	0.03	0.17	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.01	0.04	0.55	0.01	0.01	0.00	50	0.01	0.04	0.55	0.01	0.01	0.00
Totals			0.09	0.56	0.61	0.03	0.01	0.00	Totals	0.09	0.56	0.61	0.03	0.01	0.00

Reach 2 Levee			Daily Emissions lbs					Task Total Emissions lbs							
8/30/2020	8/30/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Apply Palliative	Passenger	90	0.05	0.35	0.04	0.01	0.00	0.00	90	0.05	0.35	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	30	0.03	0.17	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.01	0.04	0.55	0.01	0.01	0.00	50	0.01	0.04	0.55	0.01	0.01	0.00
Totals			0.09	0.56	0.61	0.03	0.01	0.00	Totals	0.09	0.56	0.61	0.03	0.01	0.00

Reach 1 Levee Downstream of Desert Moon			Daily Emissions lbs					Task Total Emissions lbs							
9/25/2020	9/25/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Apply Palliative	Passenger	90	0.05	0.35	0.04	0.01	0.00	0.00	90	0.05	0.35	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	30	0.03	0.17	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.01	0.04	0.55	0.01	0.01	0.00	50	0.01	0.04	0.55	0.01	0.01	0.00
Totals			0.09	0.56	0.61	0.03	0.01	0.00	Totals	0.09	0.56	0.61	0.03	0.01	0.00

Reach 1 Levee Upstream of Desert Moon			Daily Emissions lbs					Task Total Emissions lbs							
11/15/2020	11/15/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Apply Palliative	Passenger	90	0.05	0.35	0.04	0.01	0.00	0.00	90	0.05	0.35	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	30	0.03	0.17	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50	0.01	0.04	0.55	0.01	0.01	0.00	50	0.01	0.04	0.55	0.01	0.01	0.00
Totals			0.09	0.56	0.61	0.03	0.01	0.00	Totals	0.09	0.56	0.61	0.03	0.01	0.00

Avenue 38 Relocation			Daily Emissions lbs					Task Total Emissions lbs							
1/30/2020	2/12/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Grade Avenue 38	Passenger	180	0.10	0.70	0.07	0.02	0.01	0.00	1,800	0.97	6.99	0.72	0.19	0.08	0.02
	F-150 Pickup	60	0.05	0.35	0.04	0.01	0.00	0.00	600	0.52	3.48	0.42	0.06	0.03	0.01
	F-350 Pickup	30	0.01	0.04	0.16	0.01	0.00	0.00	300	0.06	0.36	1.59	0.08	0.04	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals			0.16	1.08	0.27	0.03	0.01	0.00	Totals	1.56	10.82	2.72	0.33	0.14	0.03

Construct Curb, Gutter and Sidewalk			Daily Emissions lbs					Task Total Emissions lbs							
2/13/2020	2/26/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Curb, Gutter and Sidewalk	Passenger	150	0.08	0.58	0.06	0.02	0.01	0.00	1,500	0.81	5.82	0.60	0.16	0.07	0.02
	F-150 Pickup	60	0.05	0.35	0.04	0.01	0.00	0.00	600	0.52	3.48	0.42	0.06	0.03	0.01
	F-350 Pickup	30	0.01	0.04	0.16	0.01	0.00	0.00	300	0.06	0.36	1.59	0.08	0.04	0.00
	HD Trucks	50	0.01	0.04	0.55	0.01	0.01	0.00	500	0.11	0.40	5.54	0.14	0.07	0.02
Totals			0.15	1.01	0.81	0.04	0.02	0.00	Totals	1.50	10.06	8.14	0.44	0.20	0.04

Pave Avenue 38			Daily Emissions lbs					Task Total Emissions lbs							
2/27/2020	3/11/2020	Vehicle	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Pave Avenue 38	Passenger	270	0.15	1.05	0.11	0.03	0.01	0.00	2,700	1.46	10.48	1.08	0.28	0.12	0.03
	F-150 Pickup	60	0.05	0.35	0.04	0.01	0.00	0.00	600	0.52	3.48	0.42	0.06	0.03	0.01
	F-350 Pickup	30	0.01	0.04	0.16	0.01	0.00	0.00	300	0.06	0.36	1.59	0.08	0.04	0.00
	HD Trucks	2,409	0.52	1.92	26.70	0.67	0.33	0.08	24,090	5.25	19.16	266.95	6.71	3.33	0.79
Totals			0.73	3.35	27.00	0.71	0.35	0.08	Totals	7.29	33.48	270.03	7.13	3.52	0.83

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

		3/12/2020		3/18/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Signing and Striping Avenue 38	Passenger	150		0.08	0.58	0.06	0.02	0.01	0.00	750	0.41	2.91	0.30	0.08	0.03	0.01
	F-150 Pickup	60		0.05	0.35	0.04	0.01	0.00	0.00	300	0.26	1.74	0.21	0.03	0.01	0.00
	F-350 Pickup	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	50		0.01	0.04	0.55	0.01	0.01	0.00	250	0.05	0.20	2.77	0.07	0.03	0.01
	Totals			0.14	0.97	0.66	0.04	0.02	0.00	Totals	0.72	4.85	3.28	0.18	0.08	0.02

		5/3/2020		5/9/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Tie In Channel to WSC	Passenger	360		0.19	1.40	0.14	0.04	0.02	0.00	1,800	0.97	6.99	0.72	0.19	0.08	0.02
	F-150 Pickup	30		0.03	0.17	0.02	0.00	0.00	0.00	150	0.13	0.87	0.10	0.02	0.01	0.00
	F-350 Pickup	30		0.01	0.04	0.16	0.01	0.00	0.00	150	0.03	0.18	0.79	0.04	0.02	0.00
	HD Trucks	300		0.07	0.24	3.32	0.08	0.04	0.01	1,500	0.33	1.19	16.62	0.42	0.21	0.05
	Totals			0.29	1.85	3.65	0.13	0.06	0.01	Totals	1.46	9.23	18.24	0.66	0.31	0.07

		5/3/2020		6/13/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct CCGC Outlet Structure	Passenger	360		0.19	1.40	0.14	0.04	0.02	0.00	10,800	5.85	45.24	4.72	1.12	0.47	0.11
	F-150 Pickup	30		0.03	0.17	0.02	0.00	0.00	0.00	900	0.78	5.60	0.68	0.09	0.04	0.01
	F-350 Pickup	30		0.01	0.04	0.16	0.01	0.00	0.00	900	0.17	1.19	5.47	0.24	0.12	0.01
	HD Trucks	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals			0.23	1.61	0.32	0.05	0.02	0.00	Totals	6.80	52.03	10.87	1.45	0.63	0.13

		5/3/2020		6/13/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct CCGC Inlet Structure	Passenger	360		0.19	1.40	0.14	0.04	0.02	0.00	10,800	5.85	41.94	4.31	1.12	0.47	0.11
	F-150 Pickup	30		0.03	0.17	0.02	0.00	0.00	0.00	900	0.78	5.21	0.62	0.09	0.04	0.01
	F-350 Pickup	30		0.01	0.04	0.16	0.01	0.00	0.00	900	0.17	1.08	4.76	0.24	0.12	0.01
	HD Trucks	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals			0.23	1.61	0.32	0.05	0.02	0.00	Totals	6.80	48.23	9.69	1.45	0.63	0.13

		4/26/2020		4/29/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub	Passenger	390		0.21	1.51	0.16	0.04	0.02	0.00	780	0.42	3.03	0.31	0.08	0.03	0.01
	F-150 Pickup	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	300		0.07	0.24	3.32	0.08	0.04	0.01	600	0.13	0.48	6.65	0.17	0.08	0.02
	Totals			0.28	1.75	3.48	0.12	0.06	0.01	Totals	0.55	3.51	6.96	0.25	0.12	0.03

		4/30/2020		5/1/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	Passenger	270		0.15	1.05	0.11	0.03	0.01	0.00	540	0.29	2.10	0.22	0.06	0.02	0.01
	F-150 Pickup	30		0.03	0.17	0.02	0.00	0.00	0.00	60	0.05	0.35	0.04	0.01	0.00	0.00
	F-350 Pickup	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals			0.17	1.22	0.13	0.03	0.01	0.00	Totals	0.34	2.44	0.26	0.06	0.03	0.01

		5/2/2020		7/10/2020												
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs					
		Daily		VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavate Channel	Passenger	450		0.24	1.75	0.18	0.05	0.02	0.00	22,500	12.18	87.37	8.97	2.33	0.98	0.23
	F-150 Pickup	30		0.03	0.17	0.02	0.00	0.00	0.00	1,500	1.31	8.69	1.04	0.16	0.07	0.02
	F-350 Pickup	0		0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	1,953		0.43	1.55	21.64	0.54	0.27	0.06	97,022	21.13	77.18	1,075.14	27.02	13.43	3.19
	Totals			0.70	3.47	21.84	0.59	0.29	0.07	Totals	34.62	173.24	1,085.16	29.50	14.47	3.43

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

5/3/2020 7/11/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Soil Cement Lining	Passenger	1,020	0.55	3.96	0.41	0.11	0.04	0.01	51,000	27.60	198.04	20.34	5.27	2.22	0.52
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	1,500	1.31	8.69	1.04	0.16	0.07	0.02
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	2,775	0.60	2.21	30.75	0.77	0.38	0.09	136,588	29.75	108.65	1,513.60	38.03	18.91	4.49
Totals		1.18	6.34	31.17	0.88	0.43	0.10	Totals	58.66	315.38	1,534.98	43.46	21.19	5.02	

5/3/2020 6/13/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Reach 3 Transition Structure	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	6,300	3.41	24.46	2.51	0.65	0.27	0.06
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	900	0.78	5.21	0.62	0.09	0.04	0.01
	F-350 Pickup	30	0.01	0.04	0.16	0.01	0.00	0.00	900	0.17	1.08	4.76	0.24	0.12	0.01
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.15	1.03	0.26	0.03	0.01	0.00	Totals	4.37	30.75	7.89	0.98	0.43	0.08	

7/5/2020 7/8/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Reach 3 Levee Clear and Grub	Passenger	360	0.19	1.40	0.14	0.04	0.02	0.00	720	0.39	2.80	0.29	0.07	0.03	0.01
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	300	0.07	0.24	3.32	0.08	0.04	0.01	600	0.13	0.48	6.65	0.17	0.08	0.02
Totals		0.26	1.64	3.47	0.12	0.06	0.01	Totals	0.52	3.27	6.94	0.24	0.11	0.03	

7/9/2020 7/10/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	420	0.23	1.63	0.17	0.04	0.02	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	60	0.05	0.35	0.04	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.14	0.99	0.10	0.02	0.01	0.00	Totals	0.28	1.98	0.21	0.05	0.02	0.00	

7/11/2020 8/19/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavate Soil Cement Trench	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	5,880	3.18	22.83	2.35	0.61	0.26	0.06
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	840	0.73	4.87	0.58	0.09	0.04	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.14	0.99	0.10	0.02	0.01	0.00	Totals	3.91	27.70	2.93	0.69	0.29	0.07	

7/12/2020 8/20/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Soil Cement Toedown and Backfill Trench	Passenger	240	0.13	0.93	0.10	0.02	0.01	0.00	6,720	3.64	26.09	2.68	0.69	0.29	0.07
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	840	0.73	4.87	0.58	0.09	0.04	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.16	1.11	0.12	0.03	0.01	0.00	Totals	4.37	30.96	3.26	0.78	0.33	0.08	

7/12/2020 8/20/2020		Daily Emissions lbs							Task Total Emissions lbs						
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Above-Ground Soil Cement and Embankment	Passenger	1,020	0.55	3.96	0.41	0.11	0.04	0.01	28,560	15.46	110.90	11.39	2.95	1.24	0.29
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	840	0.73	4.87	0.58	0.09	0.04	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	2,275	0.50	1.81	25.20	0.63	0.31	0.07	60,606	13.20	48.21	671.61	16.88	8.39	1.99
Totals		1.07	5.94	25.63	0.74	0.36	0.09	Totals	29.39	163.98	683.58	19.92	9.67	2.29	

Thousand Palms Flood Control Project

Construction Emissions

Onroad Equipment Emissions

Reach 2 Levee

		8/7/2020		8/7/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	210	0.11	0.82	0.08	0.02	0.01	0.00
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	100	0.02	0.08	1.11	0.03	0.01	0.00	100	0.02	0.08	1.11	0.03	0.01	0.00
	Totals	0.14	0.89	1.19	0.05	0.02	0.01	Totals	0.14	0.89	1.19	0.05	0.02	0.01	

		8/8/2020		8/8/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	Passenger	180	0.10	0.70	0.07	0.02	0.01	0.00	180	0.10	0.70	0.07	0.02	0.01	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	30	0.03	0.17	0.02	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	0.12	0.87	0.09	0.02	0.01	0.00	Totals	0.12	0.87	0.09	0.02	0.01	0.00	

		8/20/2020		8/28/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavate Soil Cement Trench	Passenger	180	0.10	0.70	0.07	0.02	0.01	0.00	1,260	0.68	4.89	0.50	0.13	0.05	0.01
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	210	0.18	1.22	0.15	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	0.12	0.87	0.09	0.02	0.01	0.00	Totals	0.87	6.11	0.65	0.15	0.06	0.02	

		8/21/2020		8/29/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Soil Cement Toedown and Backfill Trench	Passenger	240	0.13	0.93	0.10	0.02	0.01	0.00	1,680	0.91	6.52	0.67	0.17	0.07	0.02
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	210	0.18	1.22	0.15	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	0.16	1.11	0.12	0.03	0.01	0.00	Totals	1.09	7.74	0.82	0.20	0.08	0.02	

		8/21/2020		8/29/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Above-Ground Soil Cement and Embankment	Passenger	1,020	0.55	3.96	0.41	0.11	0.04	0.01	7,140	3.86	27.73	2.85	0.74	0.31	0.07
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	210	0.18	1.22	0.15	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	2,835	0.62	2.25	31.41	0.79	0.39	0.09	16,862	3.67	13.41	186.86	4.70	2.33	0.55
	Totals	1.20	6.39	31.84	0.90	0.44	0.10	Totals	7.72	42.36	189.85	5.46	2.65	0.63	

Reach 1 Levee Downstream of Desert Moon

		8/21/2020		8/23/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub	Passenger	390	0.21	1.51	0.16	0.04	0.02	0.00	1,170	0.63	4.54	0.47	0.12	0.05	0.01
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	300	0.07	0.24	3.32	0.08	0.04	0.01	900	0.20	0.72	9.97	0.25	0.12	0.03
	Totals	0.28	1.75	3.48	0.12	0.06	0.01	Totals	0.83	5.26	10.44	0.37	0.18	0.04	

		8/26/2020		8/28/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	630	0.34	2.45	0.25	0.07	0.03	0.01
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	90	0.08	0.52	0.06	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	0.14	0.99	0.10	0.02	0.01	0.00	Totals	0.42	2.97	0.31	0.07	0.03	0.01	

Thousand Palms Flood Control Project

Construction Emissions Onroad Equipment Emissions

8/29/2020 9/23/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavate Soil Cement Trench	Passenger	180	0.10	0.70	0.07	0.02	0.01	0.00	3,240	1.75	12.58	1.29	0.33	0.14	0.03
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	540	0.47	3.13	0.37	0.06	0.02	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.12	0.87	0.09	0.02	0.01	0.00	Totals	2.22	15.71	1.67	0.39	0.16	0.04	

8/30/2020 9/24/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Soil Cement Toedown and Backfill Trench	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	3,780	2.05	14.68	1.51	0.39	0.16	0.04
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	540	0.47	3.13	0.37	0.06	0.02	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	572	0.12	0.46	6.34	0.16	0.08	0.02	5,668	1.23	4.51	62.81	1.58	0.78	0.19
Totals		0.26	1.44	6.44	0.18	0.09	0.02	Totals	3.75	22.31	64.69	2.02	0.97	0.23	

8/30/2020 9/24/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Above-Ground Soil Cement and Embankment	Passenger	990	0.54	3.84	0.39	0.10	0.04	0.01	17,820	9.64	69.20	7.11	1.84	0.77	0.18
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	540	0.47	3.13	0.37	0.06	0.02	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	3,475	0.76	2.76	38.50	0.97	0.48	0.11	60,564	13.19	48.18	671.13	16.86	8.38	1.99
Totals		1.32	6.78	38.92	1.07	0.53	0.12	Totals	23.31	120.50	678.62	18.76	9.18	2.18	

Reach 1 Levee Upstream of Desert Moon 9/16/2020 9/18/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub	Passenger	390	0.21	1.51	0.16	0.04	0.02	0.00	1,170	0.63	4.54	0.47	0.12	0.05	0.01
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	300	0.07	0.24	3.32	0.08	0.04	0.01	900	0.20	0.72	9.97	0.25	0.12	0.03
Totals		0.28	1.75	3.48	0.12	0.06	0.01	Totals	0.83	5.26	10.44	0.37	0.18	0.04	

9/19/2020 9/23/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	630	0.34	2.45	0.25	0.07	0.03	0.01
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	90	0.08	0.52	0.06	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.14	0.99	0.10	0.02	0.01	0.00	Totals	0.42	2.97	0.31	0.07	0.03	0.01	

9/24/2020 11/13/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Excavate Soil Cement Trench	Passenger	180	0.10	0.70	0.07	0.02	0.01	0.00	6,660	3.60	25.86	2.66	0.69	0.29	0.07
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	1,110	0.97	6.43	0.77	0.11	0.05	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.12	0.87	0.09	0.02	0.01	0.00	Totals	4.57	32.29	3.43	0.80	0.34	0.08	

9/25/2020 11/14/2020		VMT	Daily Emissions lbs						VMT	Task Total Emissions lbs					
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Soil Cement Toedown and Backfill Trench	Passenger	210	0.11	0.82	0.08	0.02	0.01	0.00	7,770	4.21	30.17	3.10	0.80	0.34	0.08
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	1,110	0.97	6.43	0.77	0.11	0.05	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Totals		0.14	0.99	0.10	0.02	0.01	0.00	Totals	5.17	36.60	3.87	0.92	0.39	0.09	

Thousand Palms Flood Control Project

Construction Emissions
Onroad Equipment Emissions

		9/25/2020		11/14/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Construct Above-Ground Soil Cement and Embankment	Passenger	990	0.54	3.84	0.39	0.10	0.04	0.01	36,630	19.82	142.24	14.61	3.79	1.59	0.37
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	1,110	0.97	6.43	0.77	0.11	0.05	0.01
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	3,615	0.79	2.88	40.05	1.01	0.50	0.12	133,921	29.17	106.53	1,484.04	37.29	18.54	4.40
	Totals		1.35	6.89	40.47	1.11	0.54	0.13	Totals	49.96	255.20	1,499.42	41.19	20.18	4.78

		1/11/2020		1/15/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Avenue 38 Relocation Construction Staking	Passenger	30	0.02	0.12	0.01	0.00	0.00	0.00	90	0.05	0.35	0.04	0.01	0.00	0.00
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	90	0.08	0.52	0.06	0.01	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.04	0.29	0.03	0.01	0.00	0.00	Totals	0.13	0.87	0.10	0.02	0.01	0.00

		1/16/2020		1/22/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Abandon Water Wells	Passenger	150	0.08	0.58	0.06	0.02	0.01	0.00	750	0.41	2.91	0.30	0.08	0.03	0.01
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	13	0.00	0.01	0.14	0.00	0.00	0.00	63	0.01	0.05	0.69	0.02	0.01	0.00
	Totals		0.08	0.59	0.20	0.02	0.01	0.00	Totals	0.42	2.96	0.99	0.09	0.04	0.01

		1/16/2020		1/22/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Clear and Grub Avenue 38	Passenger	240	0.13	0.93	0.10	0.02	0.01	0.00	1,200	0.65	4.66	0.48	0.12	0.05	0.01
	F-150 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	150	0.03	0.12	1.66	0.04	0.02	0.00	750	0.16	0.60	8.31	0.21	0.10	0.02
	Totals		0.16	1.05	1.76	0.07	0.03	0.01	Totals	0.81	5.26	8.79	0.33	0.16	0.04

		1/23/2020		1/29/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Strip Avenue 38	Passenger	150	0.08	0.58	0.06	0.02	0.01	0.00	750	0.41	2.91	0.30	0.08	0.03	0.01
	F-150 Pickup	30	0.03	0.17	0.02	0.00	0.00	0.00	150	0.13	0.87	0.10	0.02	0.01	0.00
	F-350 Pickup	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	HD Trucks	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
	Totals		0.11	0.76	0.08	0.02	0.01	0.00	Totals	0.54	3.78	0.40	0.09	0.04	0.01

		1/1/2020		11/15/2020											
		VMT		Daily Emissions lbs					VMT		Task Total Emissions lbs				
		Daily	VOC	CO	NOx	PM10	PM2.5	SOx	Total	VOC	CO	NOx	PM10	PM2.5	SOx
Daily Needs	F-150 Pickup	300	0.26	1.74	0.21	0.03	0.01	0.00	67,500	58.87	390.99	46.77	6.98	2.94	0.80
	HD Trucks	748	0.16	0.60	8.29	0.21	0.10	0.02	39,213	8.54	31.19	434.54	10.92	5.43	1.29
	Delivery	60	0.01	0.02	0.38	0.02	0.01	0.00	13,500	1.21	3.88	84.53	4.73	2.22	0.31
	Totals		0.43	2.35	8.87	0.26	0.13	0.03	Totals	68.62	426.07	565.84	22.63	10.59	2.40

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Assumptions:

- 1) Equipment emissions factors are used based on the year of the start date for each subtask.
- 2) Current version of CARB OFFROAD model, using fleet average Salton Sea Air Basin data, was used to determine the emissions factors for ROG, NOx, PM (where PM10=PM and PM2.5 = 0.92 x PM).
- 3) SOx emissions are calculated assuming 15 ppm sulfur content in diesel fuel, and BSCF in CARB OFFROAD model.
- 4) SCAQMD CEQA website Offroad Equipment Emissions factor spreadsheet, by year, was used to develop the horsepower weighted CO emissions factors.

Offroad Equipment Emissions Factors - 2018

Equipment Name	HP	Load Factor	Emissions Factors lbs/hour					SOx
			ROG	CO	NOx	PM10	PM2.5	
Dozer Cat D-6	150	0.4288	0.07117	0.62801	0.90599	0.05073	0.04667	0.00071
Excavator Cat 352	396	0.3819	0.05205	0.37137	0.73067	0.02479	0.02281	0.00166
Grader Cat 140M2	193	0.4087	0.05782	0.29168	0.95395	0.03161	0.02908	0.00088
Asphalt Paver Cat AP655D	174	0.4154	0.04819	0.75889	0.64242	0.03188	0.02933	0.00080
Small Compactor Cat CB24B	36	0.3752	0.02793	0.18341	0.14753	0.01214	0.01117	0.00017
Compactor Cat CP74B	174	0.3752	0.03402	0.60950	0.49158	0.02295	0.02112	0.00072
Compact Loader Cat 279D	73	0.3618	0.03555	0.24428	0.35363	0.02982	0.02743	0.00029
Loader Cat 988	541	0.3618	0.12802	0.77631	1.68222	0.06688	0.06153	0.00210
Water Pull Caterpillar 613C WW	187	0.4824	0.10267	0.95678	1.30105	0.07072	0.06506	0.00101
Scraper Cat 657	1051	0.4824	0.32847	2.21502	4.98195	0.19232	0.17694	0.00558
Backhoe Cat 450F	127	0.3685	0.02845	0.42416	0.36722	0.01878	0.01728	0.00051

Offroad Equipment Emissions Factors - 2019

Equipment Name	HP	Load Factor	Emissions Factors lbs/hour					SOx
			ROG	CO	NOx	PM10	PM2.5	
Dozer Cat D-6	150	0.4288	0.06753	0.62685	0.84996	0.04774	0.04392	0.00071
Excavator Cat 352	396	0.3819	0.04772	0.36687	0.62388	0.02124	0.01954	0.00166
Grader Cat 140M2	193	0.4087	0.05778	0.28765	0.93561	0.03124	0.02874	0.00088
Asphalt Paver Cat AP655D	174	0.4154	0.04536	0.75712	0.59537	0.02977	0.02739	0.00080
Small Compactor Cat CB24B	36	0.3752	0.02622	0.17920	0.14278	0.01125	0.01035	0.00017
Compactor Cat CP74B	174	0.3752	0.03094	0.60863	0.43456	0.02035	0.01873	0.00072
Compact Loader Cat 279D	73	0.3618	0.03309	0.24304	0.33053	0.02738	0.02519	0.00029
Loader Cat 988	541	0.3618	0.11470	0.75717	1.46429	0.05727	0.05269	0.00210
Water Pull Caterpillar 613C WW	187	0.4824	0.09915	0.95487	1.24249	0.06775	0.06233	0.00101
Scraper Cat 657	1051	0.4824	0.30916	2.12364	4.56380	0.17709	0.16292	0.00558
Backhoe Cat 450F	127	0.3685	0.02616	0.42403	0.32804	0.01672	0.01538	0.00051

Offroad Equipment Emissions Factors - 2020

Equipment Name	HP	Load Factor	Emissions Factors lbs/hour					SOx
			ROG	CO	NOx	PM10	PM2.5	
Dozer Cat D-6	150	0.4288	0.06417	0.62586	0.79740	0.04502	0.04142	0.00071
Excavator Cat 352	396	0.3819	0.04414	0.36357	0.53824	0.01832	0.01686	0.00166
Grader Cat 140M2	193	0.4087	0.05677	0.28430	0.90658	0.03024	0.02782	0.00088
Asphalt Paver Cat AP655D	174	0.4154	0.04146	0.75559	0.53764	0.02670	0.02457	0.00080
Small Compactor Cat CB24B	36	0.3752	0.02487	0.17539	0.13920	0.01056	0.00972	0.00017
Compactor Cat CP74B	174	0.3752	0.02795	0.60790	0.38490	0.01784	0.01642	0.00072
Compact Loader Cat 279D	73	0.3618	0.03081	0.24192	0.30883	0.02507	0.02306	0.00029
Loader Cat 988	541	0.3618	0.11282	0.74085	1.41869	0.05541	0.05098	0.00210
Water Pull Caterpillar 613C WW	187	0.4824	0.09516	0.95323	1.18222	0.06456	0.05939	0.00101
Scraper Cat 657	1051	0.4824	0.29732	2.04421	4.25180	0.16728	0.15389	0.00558
Backhoe Cat 450F	127	0.3685	0.02406	0.42392	0.29040	0.01483	0.01365	0.00051

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Emissions for Tasks Starting in 2018

Install BMPs		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/3/2018	10/14/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	4	0.11	1.70	1.47	0.08	0.07	0.00	40	1.14	16.97	14.69	0.75	0.69	0.02
										0.11	1.70	1.47	0.08	0.07	0.00		1.14	16.97	14.69	0.75	0.69	0.02

Erect Soil Cement Batch Plant		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	11/11/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Water Pull Caterpillar 613C WW		1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	4	0.41	3.83	5.20	0.28	0.26	0.00	80	8.21	76.54	104.08	5.66	5.21	0.08
										0.41	3.83	5.20	0.28	0.26	0.00		8.21	76.54	104.08	5.66	5.21	0.08

Relocate Desert Moon Drive Utilities		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	12/9/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Excavator Cat 352		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	2	0.06	0.85	0.73	0.04	0.03	0.00	80	2.28	33.93	29.38	1.50	1.38	0.04
Small Compactor Cat CB24B		1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	2	0.06	0.37	0.30	0.02	0.02	0.00	80	2.23	14.67	11.80	0.97	0.89	0.01
Water Pull Caterpillar 613C WW		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
										0.32	2.70	3.95	0.16	0.15	0.01		12.84	108.02	158.09	6.44	5.93	0.32

Relocate Via Las Palmas Utilities		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	12/9/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Excavator Cat 352		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	2	0.06	0.85	0.73	0.04	0.03	0.00	80	2.28	33.93	29.38	1.50	1.38	0.04
Small Compactor Cat CB24B		1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	2	0.06	0.37	0.30	0.02	0.02	0.00	80	2.23	14.67	11.80	0.97	0.89	0.01
Water Pull Caterpillar 613C WW		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
										0.32	2.70	3.95	0.16	0.15	0.01		12.84	108.02	158.09	6.44	5.93	0.32

Relocate CCGC Utilities		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	12/9/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Excavator Cat 352		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	2	0.06	0.85	0.73	0.04	0.03	0.00	80	2.28	33.93	29.38	1.50	1.38	0.04
Small Compactor Cat CB24B		1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	2	0.06	0.37	0.30	0.02	0.02	0.00	80	2.23	14.67	11.80	0.97	0.89	0.01
Water Pull Caterpillar 613C WW		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	80	4.16	29.71	58.45	1.98	1.82	0.13
										0.32	2.70	3.95	0.16	0.15	0.01		12.84	108.02	158.09	6.44	5.93	0.32

Relocate Avenue 38 Sewer		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	3/31/2019		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Excavator Cat 352		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	240	12.49	89.13	175.36	5.95	5.47	0.40
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	2	0.06	0.85	0.73	0.04	0.03	0.00	240	6.83	101.80	88.13	4.51	4.15	0.12
Small Compactor Cat CB24B		1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	2	0.06	0.37	0.30	0.02	0.02	0.00	240	6.70	44.02	35.41	2.91	2.68	0.04
Water Pull Caterpillar 613C WW		1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	240	12.49	89.13	175.36	5.95	5.47	0.40
										0.32	2.70	3.95	0.16	0.15	0.01		38.51	324.07	474.26	19.32	17.78	0.96

Haul Road Construction		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	11/4/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988		1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	2	0.26	1.55	3.36	0.13	0.12	0.00	30	3.84	23.29	50.47	2.01	1.85	0.06
Grader Cat 140M2		1	0.0578	0.2917	0.9540	0.0316	0.0291	0.0009	2	0.12	0.58	1.91	0.06	0.06	0.00	30	1.73	8.75	28.62	0.95	0.87	0.03
Dozer Cat D-6		1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	30	2.14	18.84	27.18	1.52	1.40	0.02
										0.51	3.39	7.08	0.30	0.27	0.01		7.71	50.88	106.26	4.48	4.12	0.11

Haul Road Signage		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
11/7/2018	11/8/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Backhoe Cat 450F		1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	4	0.11	1.70	1.47	0.08	0.07	0.00	8	0.23	3.39	2.94	0.15	0.14	0.00
										0.11	1.70	1.47	0.08	0.07	0.00		0.23	3.39	2.94	0.15	0.14	0.00

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Remove Well Site Wall		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/17/2018	10/18/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Backhoe Cat 450F	1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	4	0.11	1.70	1.47	0.08	0.07	0.00	8	0.23	3.39	2.94	0.15	0.14	0.00
										0.11	1.70	1.47	0.08	0.07	0.00		0.23	3.39	2.94	0.15	0.14	0.00

Construct Detour		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
10/21/2018	11/3/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	1	0.0340	0.6095	0.4916	0.0230	0.0211	0.0007	4	0.14	2.44	1.97	0.09	0.08	0.00	40	1.36	24.38	19.66	0.92	0.84	0.03
	Grader Cat 140M2	1	0.0578	0.2917	0.9540	0.0316	0.0291	0.0009	4	0.23	1.17	3.82	0.13	0.12	0.00	40	2.31	11.67	38.16	1.26	1.16	0.04
	Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	20	1.42	12.56	18.12	1.01	0.93	0.01
	Asphalt Paver Cat AP655D	1	0.0482	0.7589	0.6424	0.0319	0.0293	0.0008	2	0.10	1.52	1.28	0.06	0.06	0.00	20	0.96	15.18	12.85	0.64	0.59	0.02
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	20	2.05	19.14	26.02	1.41	1.30	0.02
										0.81	8.29	11.48	0.52	0.48	0.01		8.11	82.92	114.81	5.25	4.83	0.11

Construct Detour Signing and Striping		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
11/4/2018	11/7/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Backhoe Cat 450F	1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	2	0.06	0.85	0.73	0.04	0.03	0.00	4	0.11	1.70	1.47	0.08	0.07	0.00
										0.06	0.85	0.73	0.04	0.03	0.00		0.11	1.70	1.47	0.08	0.07	0.00

Detour Traffic		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
Excavation			ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
11/8/2018	12/19/2018																					
	Excavator Cat 352	1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	4	0.21	1.49	2.92	0.10	0.09	0.01	120	6.25	44.56	87.68	2.98	2.74	0.20
	Backhoe Cat 450F	1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	4	0.11	1.70	1.47	0.08	0.07	0.00	120	3.41	50.90	44.07	2.25	2.07	0.06
	Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	4	0.51	3.11	6.73	0.27	0.25	0.01	120	15.36	93.16	201.87	8.03	7.38	0.25
	Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	60	4.27	37.68	54.36	3.04	2.80	0.04
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	4	0.41	3.83	5.20	0.28	0.26	0.00	120	12.32	114.81	156.13	8.49	7.81	0.12
										1.39	11.37	18.14	0.83	0.76	0.02		41.61	341.11	544.10	24.78	22.80	0.68

Construct WSC		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
12/20/2018	8/28/2019		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Excavator Cat 352	1	0.0520	0.3714	0.7307	0.0248	0.0228	0.0017	2	0.10	0.74	1.46	0.05	0.05	0.00	360	18.74	133.69	263.04	8.93	8.21	0.60
	Backhoe Cat 450F	1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	4	0.11	1.70	1.47	0.08	0.07	0.00	720	20.48	305.39	264.40	13.52	12.44	0.37
	Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	2	0.26	1.55	3.36	0.13	0.12	0.00	360	46.09	279.47	605.60	24.08	22.15	0.75
	Small Compactor Cat CB24B	1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	4	0.11	0.73	0.59	0.05	0.04	0.00	720	20.11	132.06	106.22	8.74	8.04	0.12
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	360	36.96	344.44	468.38	25.46	23.42	0.36
										0.79	6.64	9.49	0.45	0.41	0.01		142.38	1,195.05	1,707.64	80.73	74.27	2.20

Construct Storm Drains Ave 38 to Collection Basin		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
12/20/2018	1/2/2019		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Backhoe Cat 450F	1	0.0285	0.4242	0.3672	0.0188	0.0173	0.0005	8	0.23	3.39	2.94	0.15	0.14	0.00	80	2.28	33.93	29.38	1.50	1.38	0.04
	Small Compactor Cat CB24B	1	0.0279	0.1834	0.1475	0.0121	0.0112	0.0002	8	0.22	1.47	1.18	0.10	0.09	0.00	80	2.23	14.67	11.80	0.97	0.89	0.01
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	1	0.10	0.96	1.30	0.07	0.07	0.00	8	0.82	7.65	10.41	0.57	0.52	0.01
										0.55	5.82	5.42	0.32	0.29	0.01		5.33	56.26	51.59	3.04	2.80	0.06

CCGC Culvert		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
Clear and Grub			ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
12/14/2018	12/16/2018																					
	Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	4	0.51	3.11	6.73	0.27	0.25	0.01	12	1.54	9.32	20.19	0.80	0.74	0.03
	Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	4	0.28	2.51	3.62	0.20	0.19	0.00	12	0.85	7.54	10.87	0.61	0.56	0.01
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	4	0.41	3.83	5.20	0.28	0.26	0.00	12	1.23	11.48	15.61	0.85	0.78	0.01
										1.21	9.44	15.56	0.75	0.69	0.02		3.62	28.33	46.67	2.26	2.08	0.05

Strip		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
12/19/2018	12/19/2018		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	8	1.02	6.21	13.46	0.54	0.49	0.02	8	1.02	6.21	13.46	0.54	0.49	0.02
	Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	8	0.57	5.02	7.25	0.41	0.37	0.01	8	0.57	5.02	7.25	0.41	0.37	0.01
	Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	2	0.21	1.91	2.60	0.14	0.13	0.00
										1.80	13.15	23.31	1.08	1.00	0.02		1.80	13.15	23.31	1.08	1.00	0.02

Thousand Palms Flood Control Project
Construction Emissions
Offroad Equipment Emissions

Construct Detour 12/20/2018 1/2/2019	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B	1	0.0340	0.6095	0.4916	0.0230	0.0211	0.0007	4	0.14	2.44	1.97	0.09	0.08	0.00	40	1.36	24.38	19.66	0.92	0.84	0.03
Grader Cat 140M2	1	0.0578	0.2917	0.9540	0.0316	0.0291	0.0009	4	0.23	1.17	3.82	0.13	0.12	0.00	40	2.31	11.67	38.16	1.26	1.16	0.04
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	20	1.42	12.56	18.12	1.01	0.93	0.01
Asphalt Paver Cat AP655D	1	0.0482	0.7589	0.6424	0.0319	0.0293	0.0008	2	0.10	1.52	1.28	0.06	0.06	0.00	20	0.96	15.18	12.85	0.64	0.59	0.02
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	20	2.05	19.14	26.02	1.41	1.30	0.02
									0.81	8.29	11.48	0.52	0.48	0.01		8.11	82.92	114.81	5.25	4.83	0.11

Via Las Palmas Culvert Clear and Grub 12/14/2018 12/16/2018	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	4	0.51	3.11	6.73	0.27	0.25	0.01	12	1.54	9.32	20.19	0.80	0.74	0.03
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	4	0.28	2.51	3.62	0.20	0.19	0.00	12	0.85	7.54	10.87	0.61	0.56	0.01
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	4	0.41	3.83	5.20	0.28	0.26	0.00	12	1.23	11.48	15.61	0.85	0.78	0.01
									1.21	9.44	15.56	0.75	0.69	0.02		3.62	28.33	46.67	2.26	2.08	0.05

Strip 12/19/2018 12/19/2018	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	8	1.02	6.21	13.46	0.54	0.49	0.02	8	1.02	6.21	13.46	0.54	0.49	0.02
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	8	0.57	5.02	7.25	0.41	0.37	0.01	8	0.57	5.02	7.25	0.41	0.37	0.01
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	2	0.21	1.91	2.60	0.14	0.13	0.00
									1.80	13.15	23.31	1.08	1.00	0.02		1.80	13.15	23.31	1.08	1.00	0.02

Construct Detour 12/20/2018 1/9/2019	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B	1	0.0340	0.6095	0.4916	0.0230	0.0211	0.0007	4	0.14	2.44	1.97	0.09	0.08	0.00	60	2.04	36.57	29.49	1.38	1.27	0.04
Grader Cat 140M2	1	0.0578	0.2917	0.9540	0.0316	0.0291	0.0009	4	0.23	1.17	3.82	0.13	0.12	0.00	60	3.47	17.50	57.24	1.90	1.75	0.05
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	30	2.14	18.84	27.18	1.52	1.40	0.02
Asphalt Paver Cat AP655D	1	0.0482	0.7589	0.6424	0.0319	0.0293	0.0008	2	0.10	1.52	1.28	0.06	0.06	0.00	30	1.45	22.77	19.27	0.96	0.88	0.02
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	30	3.08	28.70	39.03	2.12	1.95	0.03
									0.81	8.29	11.48	0.52	0.48	0.01		12.17	124.38	172.22	7.87	7.24	0.17

Desert Moon Drive Culvert Clear and Grub 12/14/2018 12/16/2018	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	4	0.51	3.11	6.73	0.27	0.25	0.01	12	1.54	9.32	20.19	0.80	0.74	0.03
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	4	0.28	2.51	3.62	0.20	0.19	0.00	12	0.85	7.54	10.87	0.61	0.56	0.01
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	4	0.41	3.83	5.20	0.28	0.26	0.00	12	1.23	11.48	15.61	0.85	0.78	0.01
									1.21	9.44	15.56	0.75	0.69	0.02		3.62	28.33	46.67	2.26	2.08	0.05

Strip 12/19/2018 12/19/2018	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1280	0.7763	1.6822	0.0669	0.0615	0.0021	8	1.02	6.21	13.46	0.54	0.49	0.02	8	1.02	6.21	13.46	0.54	0.49	0.02
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	8	0.57	5.02	7.25	0.41	0.37	0.01	8	0.57	5.02	7.25	0.41	0.37	0.01
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	2	0.21	1.91	2.60	0.14	0.13	0.00
									1.80	13.15	23.31	1.08	1.00	0.02		1.80	13.15	23.31	1.08	1.00	0.02

Construct Detour 12/20/2018 1/2/2019	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B	1	0.0340	0.6095	0.4916	0.0230	0.0211	0.0007	4	0.14	2.44	1.97	0.09	0.08	0.00	40	1.36	24.38	19.66	0.92	0.84	0.03
Grader Cat 140M2	1	0.0578	0.2917	0.9540	0.0316	0.0291	0.0009	4	0.23	1.17	3.82	0.13	0.12	0.00	40	2.31	11.67	38.16	1.26	1.16	0.04
Dozer Cat D-6	1	0.0712	0.6280	0.9060	0.0507	0.0467	0.0007	2	0.14	1.26	1.81	0.10	0.09	0.00	20	1.42	12.56	18.12	1.01	0.93	0.01
Water Pull Caterpillar 613C WW	1	0.1027	0.9568	1.3011	0.0707	0.0651	0.0010	2	0.21	1.91	2.60	0.14	0.13	0.00	20	2.05	19.14	26.02	1.41	1.30	0.02
									0.72	6.77	10.20	0.46	0.42	0.01		7.15	67.74	101.96	4.61	4.24	0.10

Thousand Palms Flood Control Project
Construction Emissions
Offroad Equipment Emissions

Emissions for Tasks Starting in 2019

Detour Traffic

Restore Roadway

8/29/2019 9/25/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B	1	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	4	0.12	2.43	1.74	0.08	0.07	0.00	80	2.48	48.69	34.76	1.63	1.50	0.06
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	2	0.05	0.85	0.66	0.03	0.03	0.00	40	1.05	16.96	13.12	0.67	0.62	0.02
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	2	0.12	0.58	1.87	0.06	0.06	0.00	40	2.31	11.51	37.42	1.25	1.15	0.04
Asphalt Paver Cat AP655D	1	0.0454	0.7571	0.5954	0.0298	0.0274	0.0008	4	0.18	3.03	2.38	0.12	0.11	0.00	80	3.63	60.57	47.63	2.38	2.19	0.06
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	80	7.93	76.39	99.40	5.42	4.99	0.08
									0.87	10.71	11.62	0.57	0.52	0.01		17.39	214.12	232.34	11.35	10.44	0.26

Restore Sidewalks and Landscaping

8/29/2019 9/25/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	80	2.10	14.34	11.42	0.90	0.83	0.01
Compact Loader Cat 279D	1	0.0331	0.2430	0.3305	0.0274	0.0252	0.0003	4	0.13	0.97	1.32	0.11	0.10	0.00	80	2.65	19.44	26.44	2.19	2.01	0.02
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	40	3.97	38.19	49.70	2.71	2.49	0.04
									0.44	3.60	4.38	0.29	0.27	0.00		8.71	71.97	87.56	5.80	5.34	0.08

Open Washington Street and Existing Ave 38 to Traffic

Remove Detour

9/28/2019 10/4/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	4	0.46	3.03	5.86	0.23	0.21	0.01	20	2.29	15.14	29.29	1.15	1.05	0.04
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	2	0.12	0.58	1.87	0.06	0.06	0.00	10	0.58	2.88	9.36	0.31	0.29	0.01
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	2	0.14	1.25	1.70	0.10	0.09	0.00	10	0.68	6.27	8.50	0.48	0.44	0.01
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	10	0.99	9.55	12.42	0.68	0.62	0.01
									0.91	6.77	11.91	0.52	0.48	0.01		4.54	33.84	59.57	2.61	2.40	0.07

Restore Well Site Wall

10/5/2019 10/18/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	40	1.05	16.96	13.12	0.67	0.62	0.02
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	2	0.05	0.36	0.29	0.02	0.02	0.00	20	0.52	3.58	2.86	0.23	0.21	0.00
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	1	0.10	0.95	1.24	0.07	0.06	0.00	8	0.79	7.64	9.94	0.54	0.50	0.01
									0.26	3.01	2.84	0.16	0.14	0.00		2.36	28.18	25.92	1.44	1.32	0.03

CCGC Culvert

Detour Signing and Striping

1/3/2019 1/3/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	2	0.05	0.85	0.66	0.03	0.03	0.00	2	0.05	0.85	0.66	0.03	0.03	0.00
									0.05	0.85	0.66	0.03	0.03	0.00		0.05	0.85	0.66	0.03	0.03	0.00

Construct Culvert

1/4/2019 9/12/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Excavator Cat 352	1	0.0477	0.3669	0.6239	0.0212	0.0195	0.0017	2	0.10	0.73	1.25	0.04	0.04	0.00	360	17.18	132.07	224.60	7.65	7.03	0.60
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	720	18.84	305.30	236.19	12.04	11.08	0.37
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	2	0.23	1.51	2.93	0.11	0.11	0.00	360	41.29	272.58	527.15	20.62	18.97	0.76
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	720	18.88	129.02	102.80	8.10	7.45	0.12
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	360	35.69	343.75	447.30	24.39	22.44	0.36
									0.73	6.57	8.54	0.40	0.37	0.01		131.88	1,182.73	1,538.03	72.79	66.97	2.20

Remove Detour

9/13/2019 9/19/2019

	Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	4	0.46	3.03	5.86	0.23	0.21	0.01	20	2.29	15.14	29.29	1.15	1.05	0.04
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	2	0.12	0.58	1.87	0.06	0.06	0.00	10	0.58	2.88	9.36	0.31	0.29	0.01
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	2	0.14	1.25	1.70	0.10	0.09	0.00	10	0.68	6.27	8.50	0.48	0.44	0.01
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	10	0.99	9.55	12.42	0.68	0.62	0.01
									0.91	6.77	11.91	0.52	0.48	0.01		4.54	33.84	59.57	2.61	2.40	0.07

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Tie in Channel 9/20/2019 9/26/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Compactor Cat CP74B	1	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	8	0.25	4.87	3.48	0.16	0.15	0.01	40	1.24	24.35	17.38	0.81	0.75	0.03
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	20	0.52	8.48	6.56	0.33	0.31	0.01
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	20	0.52	3.58	2.86	0.23	0.21	0.00
Compact Loader Cat 279D	1	0.0331	0.2430	0.3305	0.0274	0.0252	0.0003	4	0.13	0.97	1.32	0.11	0.10	0.00	20	0.66	4.86	6.61	0.55	0.50	0.01
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	20	1.98	19.10	24.85	1.36	1.25	0.02
									0.99	12.07	11.65	0.66	0.60	0.01		4.93	60.37	58.26	3.28	3.01	0.07

Via Las Palmas Culvert Detour Signing and Striping 1/10/2019 1/10/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	2	0.05	0.85	0.66	0.03	0.03	0.00	2	0.05	0.85	0.66	0.03	0.03	0.00
									0.05	0.85	0.66	0.03	0.03	0.00		0.05	0.85	0.66	0.03	0.03	0.00

Construct Culvert 1/11/2019 9/19/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Excavator Cat 352	1	0.0477	0.3669	0.6239	0.0212	0.0195	0.0017	2	0.10	0.73	1.25	0.04	0.04	0.00	360	17.18	132.07	224.60	7.65	7.03	0.60
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	720	18.84	305.30	236.19	12.04	11.08	0.37
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	2	0.23	1.51	2.93	0.11	0.11	0.00	360	41.29	272.58	527.15	20.62	18.97	0.76
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	720	18.88	129.02	102.80	8.10	7.45	0.12
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	360	35.69	343.75	447.30	24.39	22.44	0.36
									0.73	6.57	8.54	0.40	0.37	0.01		131.88	1,182.73	1,538.03	72.79	66.97	2.20

Remove Detour 9/20/2019 9/26/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	4	0.46	3.03	5.86	0.23	0.21	0.01	20	2.29	15.14	29.29	1.15	1.05	0.04
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	2	0.12	0.58	1.87	0.06	0.06	0.00	10	0.58	2.88	9.36	0.31	0.29	0.01
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	2	0.14	1.25	1.70	0.10	0.09	0.00	10	0.68	6.27	8.50	0.48	0.44	0.01
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	10	0.99	9.55	12.42	0.68	0.62	0.01
									0.91	6.77	11.91	0.52	0.48	0.01		4.54	33.84	59.57	2.61	2.40	0.07

Tie in Levees 9/27/2019 10/3/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Compactor Cat CP74B	1	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	8	0.25	4.87	3.48	0.16	0.15	0.01	40	1.24	24.35	17.38	0.81	0.75	0.03
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	20	0.52	8.48	6.56	0.33	0.31	0.01
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	20	0.52	3.58	2.86	0.23	0.21	0.00
Compact Loader Cat 279D	1	0.0331	0.2430	0.3305	0.0274	0.0252	0.0003	4	0.13	0.97	1.32	0.11	0.10	0.00	20	0.66	4.86	6.61	0.55	0.50	0.01
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	20	1.98	19.10	24.85	1.36	1.25	0.02
									0.99	12.07	11.65	0.66	0.60	0.01		4.93	60.37	58.26	3.28	3.01	0.07

Desert Moon Drive Culvert Detour Signing and Striping 1/3/2019 1/3/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	2	0.05	0.85	0.66	0.03	0.03	0.00	2	0.05	0.85	0.66	0.03	0.03	0.00
									0.05	0.85	0.66	0.03	0.03	0.00		0.05	0.85	0.66	0.03	0.03	0.00

Construct Culvert 1/4/2019 9/12/2019		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs					
Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx	
Excavator Cat 352	1	0.0477	0.3669	0.6239	0.0212	0.0195	0.0017	2	0.10	0.73	1.25	0.04	0.04	0.00	360	17.18	132.07	224.60	7.65	7.03	0.60
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	720	18.84	305.30	236.19	12.04	11.08	0.37
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	2	0.23	1.51	2.93	0.11	0.11	0.00	360	41.29	272.58	527.15	20.62	18.97	0.76
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	720	18.88	129.02	102.80	8.10	7.45	0.12
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	360	35.69	343.75	447.30	24.39	22.44	0.36
									0.73	6.57	8.54	0.40	0.37	0.01		131.88	1,182.73	1,538.03	72.79	66.97	2.20

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Remove Detour 9/3/2019 9/19/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	4	0.46	3.03	5.86	0.23	0.21	0.01	20	2.29	15.14	29.29	1.15	1.05	0.04			
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	2	0.12	0.58	1.87	0.06	0.06	0.00	10	0.58	2.88	9.36	0.31	0.29	0.01			
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	2	0.14	1.25	1.70	0.10	0.09	0.00	10	0.68	6.27	8.50	0.48	0.44	0.01			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	10	0.99	9.55	12.42	0.68	0.62	0.01			
								0.91	6.77	11.91	0.52	0.48	0.01						4.54	33.84	59.57	2.61	2.40	0.07

Tie in Levees 9/20/2019 9/26/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Compactor Cat CP74B	1	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	8	0.25	4.87	3.48	0.16	0.15	0.01	40	1.24	24.35	17.38	0.81	0.75	0.03			
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	20	0.52	8.48	6.56	0.33	0.31	0.01			
Small Compactor Cat CB24B	1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	20	0.52	3.58	2.86	0.23	0.21	0.00			
Compact Loader Cat 279D	1	0.0331	0.2430	0.3305	0.0274	0.0252	0.0003	4	0.13	0.97	1.32	0.11	0.10	0.00	20	0.66	4.86	6.61	0.55	0.50	0.01			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	20	1.98	19.10	24.85	1.36	1.25	0.02			
								0.99	12.07	11.65	0.66	0.60	0.01						4.93	60.37	58.26	3.28	3.01	0.07

Reach 4 Channel Clear and Grub 11/1/2019 11/7/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Loader Cat 988	2	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	16	1.84	12.11	23.43	0.92	0.84	0.03	80	9.18	60.57	117.14	4.58	4.21	0.17			
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	8	0.54	5.01	6.80	0.38	0.35	0.01	40	2.70	25.07	34.00	1.91	1.76	0.03			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.79	7.64	9.94	0.54	0.50	0.01	40	3.97	38.19	49.70	2.71	2.49	0.04			
								3.17	24.77	40.17	1.84	1.69	0.05						15.84	123.84	200.84	9.20	8.47	0.24

Strip 11/8/2019 11/14/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Scraper Cat 657	4	0.3092	2.1236	4.5638	0.1771	0.1629	0.0056	32	9.89	67.96	146.04	5.67	5.21	0.18	160	49.47	339.78	730.21	28.33	26.07	0.89			
Loader Cat 988	1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	8	0.92	6.06	11.71	0.46	0.42	0.02	40	4.59	30.29	58.57	2.29	2.11	0.08			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.79	7.64	9.94	0.54	0.50	0.01	40	3.97	38.19	49.70	2.71	2.49	0.04			
								11.60	81.65	167.70	6.67	6.13	0.20						58.02	408.26	838.48	33.34	30.67	1.02

Excavate Channel 11/15/2019 4/16/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Scraper Cat 657	5	0.3092	2.1236	4.5638	0.1771	0.1629	0.0056	40	12.37	84.95	182.55	7.08	6.52	0.22	4,400	1,360.30	9,344.01	20,080.70	779.19	716.85	24.55			
Loader Cat 988	2	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	16	1.84	12.11	23.43	0.92	0.84	0.03	1,760	201.87	1,332.62	2,577.15	100.79	92.73	3.69			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.79	7.64	9.94	0.54	0.50	0.01	880	87.25	840.29	1,093.39	59.62	54.85	0.89			
								14.99	104.70	215.92	8.54	7.86	0.26						1,649.42	11,516.92	23,751.25	939.60	864.44	29.13

Construct Soil Cement Lining 11/17/2019 5/2/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Compactor Cat CP74B	2	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	16	0.50	9.74	6.95	0.33	0.30	0.01	1,920	59.40	1,168.57	834.35	39.08	35.96	1.38			
Grader Cat 140M2	1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	8	0.46	2.30	7.48	0.25	0.23	0.01	960	55.47	276.15	898.18	29.99	27.59	0.84			
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	8	0.54	5.01	6.80	0.38	0.35	0.01	960	64.83	601.78	815.96	45.83	42.17	0.68			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.79	7.64	9.94	0.54	0.50	0.01	960	95.18	916.68	1,192.79	65.04	59.84	0.97			
								2.29	24.69	31.18	1.50	1.38	0.03						274.89	2,963.17	3,741.29	179.95	165.55	3.87

Washington Street Widening (WSW) WSW Traffic Control and Signage 8/29/2019 8/30/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Backhoe Cat 450F	1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	8	0.21	3.39	2.62	0.13	0.12	0.00			
								0.10	1.70	1.31	0.07	0.06	0.00						0.21	3.39	2.62	0.13	0.12	0.00

Clear and Grub WSW 8/31/2019 9/1/2019		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs									
ROG	CO		NOx	PM10	PM2.5	SOx	ROG		CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx				
Loader Cat 988	2	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	16	1.84	12.11	23.43	0.92	0.84	0.03	32	3.67	24.23	46.86	1.83	1.69	0.07			
Dozer Cat D-6	1	0.0675	0.6269	0.8500	0.0477	0.0439	0.0007	8	0.54	5.01	6.80	0.38	0.35	0.01	16	1.08	10.03	13.60	0.76	0.70	0.01			
Water Pull Caterpillar 613C WW	1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.79	7.64	9.94	0.54	0.50	0.01	16	1.59	15.28	19.88	1.08	1.00	0.02			
								3.17	24.77	40.17	1.84	1.69	0.05						6.34	49.54	80.34	3.68	3.39	0.09

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Strip WSW		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/4/2019	9/5/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.3092	2.1236	4.5638	0.1771	0.1629	0.0056	8	2.47	16.99	36.51	1.42	1.30	0.04	16	4.95	33.98	73.02	2.83	2.61	0.09
		1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	4	0.46	3.03	5.86	0.23	0.21	0.01	8	0.92	6.06	11.71	0.46	0.42	0.02
		1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	8	0.79	7.64	9.94	0.54	0.50	0.01
									3.33	23.84	47.34	1.92	1.76	0.06								
									6.66	47.67	94.67	3.83	3.53	0.11								

Grade WSW		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/6/2019	9/7/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	2	0.23	1.51	2.93	0.11	0.11	0.00	4	0.46	3.03	5.86	0.23	0.21	0.01
		1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	4	0.23	1.15	3.74	0.12	0.11	0.00	8	0.46	2.30	7.48	0.25	0.23	0.01
		1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	4	0.40	3.82	4.97	0.27	0.25	0.00
									0.66	4.57	9.16	0.37	0.34	0.01								
									1.32	9.15	18.31	0.75	0.69	0.02								

Construct Curb, Gutter and Sidewalk		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/8/2019	9/14/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	4	0.10	1.70	1.31	0.07	0.06	0.00	20	0.52	8.48	6.56	0.33	0.31	0.01
		1	0.0262	0.1792	0.1428	0.0113	0.0104	0.0002	4	0.10	0.72	0.57	0.05	0.04	0.00	20	0.52	3.58	2.86	0.23	0.21	0.00
		1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	4	0.40	3.82	4.97	0.27	0.25	0.00	20	1.98	19.10	24.85	1.36	1.25	0.02
									0.61	6.23	6.85	0.38	0.35	0.01								
									3.03	31.16	34.27	1.91	1.76	0.03								

Avenue 38 Relocation		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/15/2019	9/18/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.1147	0.7572	1.4643	0.0573	0.0527	0.0021	2	0.23	1.51	2.93	0.11	0.11	0.00	20	2.29	15.14	29.29	1.15	1.05	0.04
		1	0.0578	0.2877	0.9356	0.0312	0.0287	0.0009	4	0.23	1.15	3.74	0.12	0.11	0.00	40	2.31	11.51	37.42	1.25	1.15	0.04
		1	0.0991	0.9549	1.2425	0.0678	0.0623	0.0010	2	0.20	1.91	2.48	0.14	0.12	0.00	20	1.98	19.10	24.85	1.36	1.25	0.02
									0.66	4.57	9.16	0.37	0.34	0.01								
									6.59	45.75	91.56	3.75	3.45	0.10								

Washington Street Widening (WSW)		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/15/2019	9/18/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.0309	0.6086	0.4346	0.0204	0.0187	0.0007	4	0.12	2.43	1.74	0.08	0.07	0.00	8	0.25	4.87	3.48	0.16	0.15	0.01
		1	0.0454	0.7571	0.5954	0.0298	0.0274	0.0008	8	0.36	6.06	4.76	0.24	0.22	0.01	16	0.73	12.11	9.53	0.48	0.44	0.01
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	2	0.19	1.91	2.36	0.13	0.12	0.00	4	0.38	3.81	4.73	0.26	0.24	0.00
									0.68	10.40	8.87	0.45	0.41	0.01								
									1.35	20.80	17.73	0.90	0.83	0.02								

Signing and Striping WSW		Number	Emission Factor lbs/hour						Hours/day	Daily Emissions lbs						Hours/Total	Total Emissions lbs					
9/19/2019	9/20/2019		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx		ROG	CO	NOx	PM10	PM2.5	SOx
		1	0.0262	0.4240	0.3280	0.0167	0.0154	0.0005	2	0.05	0.85	0.66	0.03	0.03	0.00	4	0.10	1.70	1.31	0.07	0.06	0.00
									0.05	0.85	0.66	0.03	0.03	0.00								
									0.10	1.70	1.31	0.07	0.06	0.00								

Thousand Palms Flood Control Project
Construction Emissions
Offroad Equipment Emissions

Emissions for Tasks Starting in 2020

Task		Emission Factor lbs/hour							Daily Emissions lbs							Total Emissions lbs						
Start	End	Number	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/day	ROG	CO	NOx	PM10	PM2.5	SOx	Hours/Total	ROG	CO	NOx	PM10	PM2.5	SOx
Avenue 38 Relocation																						
Abandon Water Wells																						
1/16/2020	1/22/2020																					
		1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	2	0.05	0.85	0.58	0.03	0.03	0.00	10	0.24	4.24	2.90	0.15	0.14	0.01
										0.05	0.85	0.58	0.03	0.03	0.00		0.24	4.24	2.90	0.15	0.14	0.01
Clear and Grub Avenue 38																						
1/16/2020	1/22/2020																					
		2	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	16	1.81	11.85	22.70	0.89	0.82	0.03	80	9.03	59.27	113.50	4.43	4.08	0.17
		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	40	2.57	25.03	31.90	1.80	1.66	0.03
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	40	3.81	38.13	47.29	2.58	2.38	0.04
										3.08	24.49	38.54	1.76	1.62	0.05		15.40	122.43	192.68	8.82	8.11	0.24
Strip Avenue 38																						
1/23/2020	1/29/2020																					
		1	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	8	2.38	16.35	34.01	1.34	1.23	0.04	40	11.89	81.77	170.07	6.69	6.16	0.22
		1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	4	0.45	2.96	5.67	0.22	0.20	0.01	20	2.26	14.82	28.37	1.11	1.02	0.04
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	20	1.90	19.06	23.64	1.29	1.19	0.02
										3.21	23.13	44.42	1.82	1.67	0.06		16.05	115.65	222.09	9.09	8.36	0.29
Construct Curb, Gutter and Sidewalk																						
2/13/2020	2/26/2020																					
		1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	4	0.10	1.70	1.16	0.06	0.05	0.00	40	0.96	16.96	11.62	0.59	0.55	0.02
		1	0.0249	0.1754	0.1392	0.0106	0.0097	0.0002	4	0.10	0.70	0.56	0.04	0.04	0.00	40	0.99	7.02	5.57	0.42	0.39	0.01
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	40	3.81	38.13	47.29	2.58	2.38	0.04
										0.58	6.21	6.45	0.36	0.33	0.01		5.76	62.10	64.47	3.60	3.31	0.07
Pave Avenue 38																						
2/27/2020	3/11/2020																					
		1	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	4	0.11	2.43	1.54	0.07	0.07	0.00	40	1.12	24.32	15.40	0.71	0.66	0.03
		1	0.0415	0.7556	0.5376	0.0267	0.0246	0.0008	8	0.33	6.04	4.30	0.21	0.20	0.01	80	3.32	60.45	43.01	2.14	1.97	0.06
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	2	0.19	1.91	2.36	0.13	0.12	0.00	20	1.90	19.06	23.64	1.29	1.19	0.02
										0.63	10.38	8.21	0.41	0.38	0.01		6.34	103.83	82.05	4.14	3.81	0.11
Signing and Striping Avenue 38																						
3/12/2020	3/18/2020																					
		1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	2	0.05	0.85	0.58	0.03	0.03	0.00	10	0.24	4.24	2.90	0.15	0.14	0.01
										0.05	0.85	0.58	0.03	0.03	0.00		0.24	4.24	2.90	0.15	0.14	0.01
Reach 4 Channel																						
Tie In Channel to WSC																						
5/3/2020	5/9/2020																					
		1	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	8	0.22	4.86	3.08	0.14	0.13	0.01	40	1.12	24.32	15.40	0.71	0.66	0.03
		1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	4	0.10	1.70	1.16	0.06	0.05	0.00	20	0.48	8.48	5.81	0.30	0.27	0.01
		1	0.0249	0.1754	0.1392	0.0106	0.0097	0.0002	4	0.10	0.70	0.56	0.04	0.04	0.00	20	0.50	3.51	2.78	0.21	0.19	0.00
		1	0.0308	0.2419	0.3088	0.0251	0.0231	0.0003	4	0.12	0.97	1.24	0.10	0.09	0.00	20	0.62	4.84	6.18	0.50	0.46	0.01
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	20	1.90	19.06	23.64	1.29	1.19	0.02
										0.92	12.04	10.76	0.60	0.55	0.01		4.62	60.21	53.81	3.01	2.77	0.07
Reach 3 Channel																						
Construct CCGC Outlet Structure																						
5/3/2020	6/13/2020																					
		1	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	8	0.22	4.86	3.08	0.14	0.13	0.01	240	6.71	145.90	92.38	4.28	3.94	0.17
		1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	4	0.10	1.70	1.16	0.06	0.05	0.00	120	2.89	50.87	34.85	1.78	1.64	0.06
		1	0.0249	0.1754	0.1392	0.0106	0.0097	0.0002	4	0.10	0.70	0.56	0.04	0.04	0.00	120	2.98	21.05	16.70	1.27	1.17	0.02
		1	0.0308	0.2419	0.3088	0.0251	0.0231	0.0003	4	0.12	0.97	1.24	0.10	0.09	0.00	120	3.70	29.03	37.06	3.01	2.77	0.03
		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	120	11.42	114.39	141.87	7.75	7.13	0.12
										0.92	12.04	10.76	0.60	0.55	0.01		27.70	361.23	322.86	18.08	16.64	0.41

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Construct CCGC Inlet Structure		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
5/3/2020	6/13/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	1	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	8	0.22	4.86	3.08	0.14	0.13	0.01	240	6.71	145.90	92.38	4.28	3.94	0.17
	Backhoe Cat 450F	1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	4	0.10	1.70	1.16	0.06	0.05	0.00	120	2.89	50.87	34.85	1.78	1.64	0.06
	Small Compactor Cat CB24B	1	0.0249	0.1754	0.1392	0.0106	0.0097	0.0002	4	0.10	0.70	0.56	0.04	0.04	0.00	120	2.98	21.05	16.70	1.27	1.17	0.02
	Compact Loader Cat 279D	1	0.0308	0.2419	0.3088	0.0251	0.0231	0.0003	4	0.12	0.97	1.24	0.10	0.09	0.00	120	3.70	29.03	37.06	3.01	2.77	0.03
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	120	11.42	114.39	141.87	7.75	7.13	0.12
										0.92	12.04	10.76	0.60	0.55	0.01		27.70	361.23	322.86	18.08	16.64	0.41

Clear and Grub		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
4/26/2020	4/29/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Loader Cat 988	2	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	16	1.81	11.85	22.70	0.89	0.82	0.03	32	3.61	23.71	45.40	1.77	1.63	0.07
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	16	1.03	10.01	12.76	0.72	0.66	0.01
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	16	1.52	15.25	18.92	1.03	0.95	0.02
										3.08	24.49	38.54	1.76	1.62	0.05		6.16	48.97	77.07	3.53	3.24	0.09

Strip		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
4/30/2020	5/1/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scraper Cat 657	4	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	32	9.51	65.41	136.06	5.35	4.92	0.18	64	19.03	130.83	272.12	10.71	9.85	0.36
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	16	1.81	11.85	22.70	0.89	0.82	0.03
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	16	1.52	15.25	18.92	1.03	0.95	0.02
										11.18	78.97	156.86	6.31	5.81	0.20		22.36	157.93	313.73	12.63	11.62	0.41

Excavate Channel		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
5/2/2020	7/10/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scraper Cat 657	4	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	32	9.51	65.41	136.06	5.35	4.92	0.18	1,600	475.71	3,270.74	6,802.88	267.64	246.23	8.92
	Loader Cat 988	4	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	32	3.61	23.71	45.40	1.77	1.63	0.07	1,600	180.52	1,185.36	2,269.91	88.66	81.57	3.36
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	200	19.03	190.65	236.44	12.91	11.88	0.20
										13.51	92.93	186.18	7.38	6.79	0.25		675.26	4,646.74	9,309.23	369.21	339.67	12.48

Construct Soil Cement Lining		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
5/3/2020	7/11/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	2	0.0279	0.6086	0.4346	0.0204	0.0187	0.0007	16	0.45	9.74	6.95	0.33	0.30	0.01	800	22.36	486.90	347.65	16.28	14.98	0.57
	Grader Cat 140M2	1	0.0568	0.2877	0.9356	0.0312	0.0287	0.0009	8	0.45	2.30	7.48	0.25	0.23	0.01	400	22.71	115.06	374.24	12.49	11.49	0.35
	Dozer Cat D-6	1	0.0642	0.6269	0.8500	0.0477	0.0439	0.0007	8	0.51	5.01	6.80	0.38	0.35	0.01	400	25.67	250.74	339.99	19.10	17.57	0.28
	Water Pull Caterpillar 613C WW	1	0.0952	0.9549	1.2425	0.0678	0.0623	0.0010	8	0.76	7.64	9.94	0.54	0.50	0.01	400	38.06	381.95	497.00	27.10	24.93	0.40
										2.18	24.69	31.18	1.50	1.38	0.03		108.80	1,234.65	1,558.87	74.98	68.98	1.61

Construct Reach 3 Transition Structure		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
5/3/2020	6/13/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	1	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	8	0.22	4.86	3.08	0.14	0.13	0.01	240	6.71	145.90	92.38	4.28	3.94	0.17
	Backhoe Cat 450F	1	0.0241	0.4239	0.2904	0.0148	0.0136	0.0005	4	0.10	1.70	1.16	0.06	0.05	0.00	120	2.89	50.87	34.85	1.78	1.64	0.06
	Small Compactor Cat CB24B	1	0.0249	0.1754	0.1392	0.0106	0.0097	0.0002	4	0.10	0.70	0.56	0.04	0.04	0.00	120	2.98	21.05	16.70	1.27	1.17	0.02
	Compact Loader Cat 279D	1	0.0308	0.2419	0.3088	0.0251	0.0231	0.0003	4	0.12	0.97	1.24	0.10	0.09	0.00	120	3.70	29.03	37.06	3.01	2.77	0.03
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	120	11.42	114.39	141.87	7.75	7.13	0.12
										0.92	12.04	10.76	0.60	0.55	0.01		27.70	361.23	322.86	18.08	16.64	0.41

Reach 3 Levee		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
Clear and Grub			ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	16	1.81	11.85	22.70	0.89	0.82	0.03
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	16	1.03	10.01	12.76	0.72	0.66	0.01
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	16	1.52	15.25	18.92	1.03	0.95	0.02
										2.18	18.56	27.19	1.32	1.21	0.03		4.35	37.12	54.37	2.64	2.43	0.06

Strip		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
7/9/2020	7/10/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scraper Cat 657	2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	32	9.51	65.41	136.06	5.35	4.92	0.18
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	16	1.81	11.85	22.70	0.89	0.82	0.03
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	16	1.52	15.25	18.92	1.03	0.95	0.02
										6.42	46.26	88.84	3.64	3.35	0.11		12.84	92.52	177.67	7.27	6.69	0.23

Excavate Soil Cement Trench		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
7/11/2020	8/19/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scraper Cat 657	2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	448	133.20	915.81	1,904.81	74.94	68.94	2.50
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	224	25.27	165.95	317.79	12.41	11.42	0.47
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76												

Thousand Palms Flood Control Project

Construction Emissions

Offroad Equipment Emissions

Construct Soil Cement Toedown and Backfill Trench

7/12/2020 8/20/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
7/12/2020	8/20/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B		2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	448	12.52	272.34	172.44	7.99	7.35	0.32
Grader Cat 140M2		1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	8	0.45	2.27	7.25	0.24	0.22	0.01	224	12.72	63.68	203.07	6.77	6.23	0.20
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	224	14.37	140.19	178.62	10.08	9.28	0.16
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	224	21.32	213.52	264.82	14.46	13.30	0.23
										2.18	24.63	29.25	1.40	1.29	0.03		60.93	689.74	818.95	39.31	36.17	0.90

Construct Above-Ground Soil Cement and Embankment

7/12/2020 8/20/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
7/12/2020	8/20/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B		2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	448	12.52	272.34	172.44	7.99	7.35	0.32
Grader Cat 140M2		1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	8	0.45	2.27	7.25	0.24	0.22	0.01	224	12.72	63.68	203.07	6.77	6.23	0.20
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	224	14.37	140.19	178.62	10.08	9.28	0.16
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	224	21.32	213.52	264.82	14.46	13.30	0.23
										2.18	24.63	29.25	1.40	1.29	0.03		60.93	689.74	818.95	39.31	36.17	0.90

Reach 2 Levee

Clear and Grub

8/7/2020 8/7/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/7/2020	8/7/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988		2	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	16	1.81	11.85	22.70	0.89	0.82	0.03	16	1.81	11.85	22.70	0.89	0.82	0.03
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	8	0.51	5.01	6.38	0.36	0.33	0.01
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	8	0.76	7.63	9.46	0.52	0.48	0.01
										3.08	24.49	38.54	1.76	1.62	0.05		3.08	24.49	38.54	1.76	1.62	0.05

Strip

8/8/2020 8/8/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/8/2020	8/8/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Scraper Cat 657		1	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	8	2.38	16.35	34.01	1.34	1.23	0.04	8	2.38	16.35	34.01	1.34	1.23	0.04
Loader Cat 988		1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	8	0.90	5.93	11.35	0.44	0.41	0.02
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	8	0.76	7.63	9.46	0.52	0.48	0.01
										4.04	29.91	54.82	2.30	2.11	0.07		4.04	29.91	54.82	2.30	2.11	0.07

Excavate Soil Cement Trench

8/20/2020 8/28/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/20/2020	8/28/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Scraper Cat 657		2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	112	33.30	228.95	476.20	18.73	17.24	0.62
Loader Cat 988		1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	56	6.32	41.49	79.45	3.10	2.85	0.12
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	56	5.33	53.38	66.20	3.62	3.33	0.06
										6.42	46.26	88.84	3.64	3.35	0.11		44.95	323.82	621.85	25.45	23.42	0.80

Construct Soil Cement Toedown and Backfill Trench

8/21/2020 8/29/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/21/2020	8/29/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B		2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	112	3.13	68.08	43.11	2.00	1.84	0.08
Grader Cat 140M2		1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	8	0.45	2.27	7.25	0.24	0.22	0.01	56	3.18	15.92	50.77	1.69	1.56	0.05
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	56	3.59	35.05	44.65	2.52	2.32	0.04
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	56	5.33	53.38	66.20	3.62	3.33	0.06
										2.18	24.63	29.25	1.40	1.29	0.03		15.23	172.43	204.74	9.83	9.04	0.23

Construct Above-Ground Soil Cement and Embankment

8/21/2020 8/29/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/21/2020	8/29/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Compactor Cat CP74B		2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	112	3.13	68.08	43.11	2.00	1.84	0.08
Grader Cat 140M2		1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	8	0.45	2.27	7.25	0.24	0.22	0.01	56	3.18	15.92	50.77	1.69	1.56	0.05
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	56	3.59	35.05	44.65	2.52	2.32	0.04
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	56	5.33	53.38	66.20	3.62	3.33	0.06
										2.18	24.63	29.25	1.40	1.29	0.03		15.23	172.43	204.74	9.83	9.04	0.23

Reach 1 Levee Downstream of Desert Moon

Clear and Grub

8/21/2020 8/23/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/21/2020	8/23/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988		2	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	16	1.81	11.85	22.70	0.89	0.82	0.03	48	5.42	35.56	68.10	2.66	2.45	0.10
Dozer Cat D-6		1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	24	1.54	15.02	19.14	1.08	0.99	0.02
Water Pull Caterpillar 613C WW		1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	24	2.28	22.88	28.37	1.55	1.43	0.02
										3.08	24.49	38.54	1.76	1.62	0.05		9.24	73.46	115.61	5.29	4.87	0.14

Strip

8/26/2020 8/28/2020		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/26/2020	8/28/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Scraper Cat 657		2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	48	14.27	98.12	204.09	8.03	7.39	0.27
Loader Cat 988		1	0.1128	0.7408																		

Thousand Palms Flood Control Project
Construction Emissions
Offroad Equipment Emissions

Excavate Soil Cement Trench		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/29/2020	9/23/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scrapper Cat 657	2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	288	85.63	588.73	1,224.52	48.18	44.32	1.61
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	4	0.45	2.96	5.67	0.22	0.20	0.01	72	8.12	53.34	102.15	3.99	3.67	0.15
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	72	6.85	68.63	85.12	4.65	4.28	0.07
										5.59	39.48	78.43	3.16	2.90	0.10		100.60	710.71	1,411.78	56.81	52.27	1.83

Construct Soil Cement Toedown and Backfill Trench		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/30/2020	9/24/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	288	8.05	175.08	110.85	5.14	4.73	0.21
	Grader Cat 140M2	1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	4	0.23	1.14	3.63	0.12	0.11	0.00	72	4.09	20.47	65.27	2.18	2.00	0.06
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	144	9.24	90.12	114.83	6.48	5.96	0.10
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	72	6.85	68.63	85.12	4.65	4.28	0.07
										1.57	19.68	20.89	1.02	0.94	0.02		28.23	354.30	376.07	18.45	16.97	0.44

Construct Above-Ground Soil Cement and Embankment		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
8/30/2020	9/24/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	288	8.05	175.08	110.85	5.14	4.73	0.21
	Grader Cat 140M2	1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	4	0.23	1.14	3.63	0.12	0.11	0.00	72	4.09	20.47	65.27	2.18	2.00	0.06
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	4	0.26	2.50	3.19	0.18	0.17	0.00	72	4.62	45.06	57.41	3.24	2.98	0.05
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	72	6.85	68.63	85.12	4.65	4.28	0.07
										1.31	17.18	17.70	0.84	0.78	0.02		23.61	309.24	318.66	15.21	13.99	0.39

Reach 1 Levee Upstream of Desert Moon Clear and Grub		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
9/16/2020	9/18/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Loader Cat 988	2	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	16	1.81	11.85	22.70	0.89	0.82	0.03	48	5.42	35.56	68.10	2.66	2.45	0.10
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	8	0.51	5.01	6.38	0.36	0.33	0.01	24	1.54	15.02	19.14	1.08	0.99	0.02
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	24	2.28	22.88	28.37	1.55	1.43	0.02
										3.08	24.49	38.54	1.76	1.62	0.05		9.24	73.46	115.61	5.29	4.87	0.14

Strip		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
9/19/2020	9/23/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scrapper Cat 657	2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	48	14.27	98.12	204.09	8.03	7.39	0.27
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	8	0.90	5.93	11.35	0.44	0.41	0.02	24	2.71	17.78	34.05	1.33	1.22	0.05
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	8	0.76	7.63	9.46	0.52	0.48	0.01	24	2.28	22.88	28.37	1.55	1.43	0.02
										6.42	46.26	88.84	3.64	3.35	0.11		19.26	138.78	266.51	10.91	10.04	0.34

Excavate Soil Cement Trench		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
9/24/2020	11/13/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Scrapper Cat 657	2	0.2973	2.0442	4.2518	0.1673	0.1539	0.0056	16	4.76	32.71	68.03	2.68	2.46	0.09	592	176.01	1,210.17	2,517.07	99.03	91.11	3.30
	Loader Cat 988	1	0.1128	0.7408	1.4187	0.0554	0.0510	0.0021	4	0.45	2.96	5.67	0.22	0.20	0.01	148	16.70	109.65	209.97	8.20	7.54	0.31
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	148	14.08	141.08	174.97	9.55	8.79	0.15
										5.59	39.48	78.43	3.16	2.90	0.10		206.80	1,460.90	2,902.00	116.78	107.44	3.76

Construct Soil Cement Toedown and Backfill Trench		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
9/25/2020	11/14/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	592	16.54	359.88	227.86	10.56	9.72	0.43
	Grader Cat 140M2	1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	4	0.23	1.14	3.63	0.12	0.11	0.00	148	8.40	42.08	134.17	4.48	4.12	0.13
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	4	0.26	2.50	3.19	0.18	0.17	0.00	148	9.50	92.63	118.02	6.66	6.13	0.10
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	148	14.08	141.08	174.97	9.55	8.79	0.15
										1.31	17.18	17.70	0.84	0.78	0.02		48.53	635.66	655.02	31.26	28.76	0.81

Construct Above-Ground Soil Cement and Embankment		Number	Emission Factor lbs/hour					Hours/day	Daily Emissions lbs					Hours/Total	Total Emissions lbs							
9/25/2020	11/14/2020		ROG	CO	NOx	PM10	PM2.5		SOx	ROG	CO	NOx	PM10		PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
	Compactor Cat CP74B	2	0.0279	0.6079	0.3849	0.0178	0.0164	0.0007	16	0.45	9.73	6.16	0.29	0.26	0.01	592	16.54	359.88	227.86	10.56	9.72	0.43
	Grader Cat 140M2	1	0.0568	0.2843	0.9066	0.0302	0.0278	0.0009	4	0.23	1.14	3.63	0.12	0.11	0.00	148	8.40	42.08	134.17	4.48	4.12	0.13
	Dozer Cat D-6	1	0.0642	0.6259	0.7974	0.0450	0.0414	0.0007	4	0.26	2.50	3.19	0.18	0.17	0.00	148	9.50	92.63	118.02	6.66	6.13	0.10
	Water Pull Caterpillar 613C WW	1	0.0952	0.9532	1.1822	0.0646	0.0594	0.0010	4	0.38	3.81	4.73	0.26	0.24	0.00	148	14.08	141.08	174.97	9.55	8.79	0.15
										1.31	17.18	17.70	0.84	0.78	0.02		48.53	635.66	655.02	31.26	28.76	0.81

Thousand Palms Flood Control Project

Construction - Fugitive Dust Emissions

Assumptions:

1. Fugitive dust emissions are estimated using AP-42.
2. Equipment usage, amount of material handling, and VMT assumptions are presented under "Schedule & Equipment" and "Onroad Vehicles Emission Calculations" above.

Emission Categories

- 1) Earthmoving
- 2) Road Dust Paved/Unpaved
- 3) Disturbed Area Windblown Emissions
- 4) Concrete Batch Plant

1) Earthmoving

Emission Types

- A) Dozing
- B) Grading
- C) Material Loading/Handling
- D) Scraper Loading and Unloading

A) Dozing (AP-42 Section 11.9 for overburden)

$$E = k \times (s)^{1.5} / (M)^{1.4} \text{ For PM10 and } k \times 5.7 \times (s)^{1.2} / (M)^{1.3} \text{ for PM2.5}$$

E = lb/hr

k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)

s = Silt Content (assumed to be 5% - Based on sandy area dry sieve results for another flood control project)

M = Moisture Content = 12% assumed required for Rule 403/403.1 compliance

Dozers are only used in Reach 4

Emission Factor, lb/hr

PM10	PM2.5
0.25862	0.16326

Maximum Day Dozer Use

8 Hrs/day

Dozer Emissions (Lbs/day)

PM10	PM2.5
2.07	1.31

Total Dozer Use

	Hrs/year
2018	221
2019	339
2020	2,337

Dozer Emissions (Tons/year)

	PM10	PM2.5
2018	0.03	0.02
2019	0.04	0.03
2020	0.30	0.19

Thousand Palms Flood Control Project

Construction - Fugitive Dust Emissions

B) Grading (AP-42 Section 11.9)

$$E = k \times 0.051 \times (S)^{2.0} \text{ for PM10 and } k \times 0.040 \times (S)^{2.5} \text{ for PM2.5}$$

$$E = \text{lb/VMT}$$

k = Scaling Constant (0.60 for PM10 and 0.031 for PM2.5)

S = Mean Vehicle Speed assumed to be 3 mph

Assumes VMT = 3 x hours in use

Emission Factor, lb/VMT

PM10	PM2.5
0.08813	0.00619

Emission Control

68%

Watering is assumed as Rule 403/403.1 control measure.

Maximum Daily Grader Use - During foundation excavation phase

Hrs/day	VMT/day
8	24

Grading Emissions (Lbs/day)

PM10	PM2.5
2.12	0.15

Annual Grader VMT

	Hrs/year	VMT/year
2018	172	516
2019	390	1170
2020	2,137	6411

Grading Emissions (Tons/year)

	PM10	PM2.5
2018	0.01	0.00
2019	0.02	0.00
2020	0.09	0.01

C) Material Loading/Handling (AP-42, p. 13.2.4.3)

$$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$$

$$E = \text{lb/ton}$$

k = Particle Size Constant (0.35 for PM10 and 0.053 for PM2.5)

U = average wind speed = 25 MPH worst day, 5.4 MPH avg daytime (avg from Indio Met Data)

M = moisture content = 12% per compliance with Rule 403/403.1

Two separate drops are assumed for bulk material movement, except for scrapers which has separate emissions estimate

	tons/period	Transfer Points
Max Day	8,800	2
2018	50,000	2
2019	100,000	2
2020	440,000	2

Emission Factors and Emissions

Emission Factors

PM10 Daily	PM2.5 Daily	PM10 Annual	PM2.5 Annual
0.00074	0.00011	0.00010	0.00002

Emissions (Lbs/day)

	PM10	PM2.5
Max Day	13.00	1.97

Emissions (Tons)

	PM10	PM2.5
2018	0.01	0.00
2019	0.01	0.00
2020	0.04	0.01

Thousand Palms Flood Control Project

Construction - Fugitive Dust Emissions

C) Scraper Loading and Unloading (AP-42, Table 11.9-4)

E = 0.058 lbs/ton for scraper loading - For TSP

PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website

Emissions are controlled by 68 percent by keeping moisture content at 12 percent or more for Rule 403/403.1 compliance

	Max Day	2018	2019	2020
Tons Loaded	13,760	0	930,329	3,058,009

Emissions	PM10	PM10	PM10	PM10
	124.88	0.00	4.22	13.88
	Lbs/day	Total Tons	Total Tons	Total Tons
	PM2.5	PM2.5	PM2.5	PM2.5
	26.05	0.00	0.88	2.89
	Lbs/day	Total Tons	Total Tons	Total Tons

2) Road Dust

Emission Types

A) Paved Road Dust

B) Unpaved Road Dust

A) Paved Road Dust

$$E = [k \times (sL)^{0.91} \times (W)^{1.02}] \times (1 - P/4N)$$

E = lb/VMT

k = Constant (0.0022 for PM10 and 0.00054 for PM2.5)

sL = Silt Loading (assumed to be 0.06 g/m² for 5,000<ADT<10,000 of Table 13.2.1-2)

W = Average weight of vehicles in tons (calculated below)

P = Days of precipitation (34 assumed for annual calculation)

N = Days in period (365 for annual calculation)

Average Vehicle Weight Calculation

Assumptions

Passenger Vehicles = 2 tons average

Midsized "Delivery" Vehicles = 12 ton average

Heavy-Heavy Duty Trucks = 30 tons average (loaded 40 tons, unloaded 20 tons)

Daily Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Max Day	3,224	175	4,350	7,749	17.9

Total VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
2018	111,003	11,583	23,256	145,842	7.3
2019	632,603	39,513	102,482	774,598	6.2
2020	453,350	16,900	529,766	1,000,016	21.5

Daily Emission Factors (lb/VMT)

	PM10 Daily	PM2.5 Daily
Max Day	0.00323	0.00079

Emissions (Lbs/day)

	PM10	PM2.5
Max Day	25.05	6.15

Annual Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
2018	0.0013	0.0003
2019	0.0011	0.0003
2020	0.0038	0.0009

Emissions (Tons)

	PM10	PM2.5
2018	0.09	0.02
2019	0.41	0.10
2020	1.90	0.47

Thousand Palms Flood Control Project

Construction - Fugitive Dust Emissions

B) Unpaved Road Dust

$$E = (k)[(s/12)^{0.9}][[(W/3)^{0.45}][(365-P)/365]$$

k = constant = 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5

s = Silt Content (assumed to be 5% - Based on sieving results from similar sandy flood control project type)

W = avg. vehicle weight = calculated below

No correction for number of wet days due to assumption of required mitigation

Average Vehicle Weight Calculation

Assumptions

Personal/Professionals/inspection Vehicles = 2 tons average

Midsized "Delivery" Vehicles = 8 ton average

Heavy-Heavy Duty Trucks = 30 tons average (loaded 40 tons, unloaded 20 tons)

Scrapers = 100 tons average (loaded 125 tons, empty 75 tons)

Daily Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Scrapers	Total Unpaved VMT	Average Weight (Tons)
Max Day Vehicles	16	5	1,426	0	1,447	29.6
Max Day Scrapers	0	0	0	140	140	104.0

Annual Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Scrapers	Total Unpaved VMT	Average Weight (Tons)
2018	1,197	327	1,478	0	3,002	16.9
2019	4,957	1,107	5,793	0	11,857	16.6
2020	2,980	350	151,684	0	155,014	29.4
2018	0	0	0	0	0	0.0
2019	0	0	0	5,686	9,206	61.8
2020	0	0	0	28,295	28,295	100.0

Scrapers
Scrapers
Scrapers

Uncontrolled Emission Factors and Emissions

Daily Emission Factors (lb/VMT)

	PM10 Daily	PM2.5 Daily
Max Day Vehicles	0.37	0.04
Max Day Scrapers	0.65	0.06

Emissions (Lbs/day)

	PM10	PM2.5
Max Day Vehicles	533.90	53.39
Max Day Scrapers	90.90	9.09

Scrapers

Annual Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
2018	0.29	0.03
2019	0.28	0.03
2020	0.37	0.04
2018	0.00	0.00
2019	0.51	0.05
2020	0.64	0.06

Scrapers
Scrapers
Scrapers

Emissions (Tons/year)

	PM10	PM2.5
2018	0.43	0.04
2019	1.69	0.17
2020	28.51	2.85
2018	0.00	0.00
2019	2.36	0.24
2020	9.02	0.90

Scrapers
Scrapers
Scrapers

"Unmitigated" Emissions (assumes 55% control watering and 57 percent for 15 mph speed per Rule 403/403.1 requirements)

Thousand Palms Flood Control Project

Construction - Fugitive Dust Emissions

3) Disturbed Area Windblown Emissions

Assumptions

Emission Factor is 0.38 tons/disturbed acres/year of Total Suspended Particulate (AP-42 Section 11.9)
 PM10 and PM2.5 fractions of TSP are 0.489 and 0.102 respectively per CEIDARS factors from SCAQMD CEQA Website
 There are permanent and temporary disturbed acres that make up the total acre-years of disturbed area
 Disturbed areas are controlled by watering - 61% control
 Restoration of disturbed acres creates no net emission increase of permanently disturbed acres

Disturbed Acres (acre)	Emissions (Lbs/day)		Total Emissions (Tons)		
	PM10	PM2.5	PM10	PM2.5	
40	15.88	3.31	--	--	Max Day
5	--	--	0.36	0.08	2018 avg
10	--	--	0.72	0.15	2019 avg
35	--	--	2.54	0.53	2020 avg

* Disturbance area includes stockpiles at the batch plant, the temporary sand augmentation area, and the active construction areas, and does not include the controlled Mira Sera stockpile, which is offset by that area which is currently unmitigated.

4) Concrete Batch Plant

Assumptions

Emission Factors are from AP-42 Section 11.12 for Central Mix Batching (summation to 0.0171 lb PM10/cy of concrete)
 Batch plant will be hooked up to the grid, no IC engines are required.
 Batch plant will operate a maximum of 8 hours per day and has a productivity of 2400 CY per day
 PM2.5 is PM10 times 0.15 (ARB PM size profile)
 Batch plant is only used for soil cement, structural concrete is imported.

	Cubic Yards	PM10	PM2.5	
Max Day	2,400	41.04	6.16	Lbs/day
2018	10,000	0.09	0.01	Tons
2019	68,200	0.58	0.09	Tons
2020	555,400	4.75	0.71	Tons

Fugitive Dust Emissions Summary

Maximum Day

	Uncontrolled Emissions	
	PM10	PM2.5
Dozing	2.07	1.31
Grading	2.12	0.15
Material Loading/Handling	13.00	1.97
Scraper Loading	124.88	26.05
Paved Road Dust	25.05	6.15
Unpaved Road Dust	533.90	53.39
Scraper Unpaved Road Dust	90.90	9.09
Disturbed Area Windblown Emissions	15.88	3.31
Concrete Batch Plant	41.04	6.16
Total	807.80	101.41

Total Fugitive Emissions

	2018		2019		2020	
	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Dozing	0.03	0.02	0.04	0.03	0.30	0.19
Grading	0.01	0.00	0.02	0.00	0.09	0.01
Material Loading/Handling	0.01	0.00	0.01	0.00	0.04	0.01
Scraper Loading/Unloading	0.00	0.00	4.22	0.88	13.88	2.89
Paved Road Dust	0.09	0.02	0.41	0.10	1.90	0.47
Unpaved Road Dust	0.43	0.04	1.69	0.17	28.51	2.85
Scraper Unpaved Road Dust	0.00	0.00	2.36	0.24	9.02	0.90
Disturbed Area Windblown Emissions	0.36	0.08	0.72	0.15	2.54	0.53
Concrete Batch Plant	0.09	0.01	0.58	0.09	4.75	0.71
Total	0.92	0.16	9.48	1.57	56.28	7.85

Thousand Palms Flood Control Project

Construction GHG Emissions

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol and 2015 Climate Registry Default Emission Factors (April 2015)

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.4 Emission Factors for Each Fuel and Vehicle Type (g/mile)

	CH4	N2O
Gasoline	0.0163	0.0066
Diesel	0.0051	0.0048

Onroad Emission Factors - 2013 (pounds/mile)

	CH4	N2O
Gasoline	0.00004	0.00001
Diesel	0.00001	0.00001

Total On-road GHG Emissions

Proposed Project

Vehicle Type	Gallons	VMT	Emissions lbs			
			CO2	CH4	N2O	CO2e
Gasoline Vehicles	58,049	1,206,150	1,123,506	43.34	17.55	1,129,857
Diesel Vehicles	224,924	1,479,380	5,061,975	16.63	15.66	5,067,178

Totals	6,185,481	59.98	33.21	6,197,034
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Thousand Palms Flood Control Project

Construction GHG Emissions

Construction - Offroad Equipment GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by California Climate Action Registry General Reporting Protocol (ver. 3.1 January 2009)
2. For diesel-fueled equipment, fuel consumption rate of 0.38 lbs/bhp-hr and density of 6.8 lbs/gallon are used.
3. For gasoline-fueled equipment, fuel consumption rate of 0.47 lbs/bhp-hr and density of 6.0 lbs/gallon are used.

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Gasoline	8.78
Diesel	10.21

TCR Table 13.7 Emission Factors for Each Fuel and Vehicle Type (g/gallon)

Construction	CH4 (g/gallon)	N2O (g/gallon)
Gasoline	0.504	0.224
Diesel	0.576	0.256

Total Offroad GHG Emissions

Proposed Project

	Fuel Use (gallon)	Total Emissions lbs			
		CO2	CH4	N2O	CO2e
Gasoline	0.00	0	0.00	0.00	0
Diesel	238,183	5,360,383	302.46	134.43	5,408,407
Totals	238,183	5,360,383	302.46	134.43	5,408,407

Thousand Palms Flood Control Project

Construction GHG Emissions

Indirect Water Use CO2e Emissions

Assumption:

1. This is assumed to be based on 11.111 MWh per million gallons or 3.62 MWh per acre-foot (Navigant, 2006; p. 2), with 647.9 acre-feet of water required during construction; and 661.24 lbs of CO2e/MWh (equivalent to approximately 1.2 tons of CO2e/acre-foot of water).

2. Electrical use assumes that the batch plant is rated at 300 kWh and operates at 80 percent rated electrical capacity and with the mix testing period operates for 265 full days.

Option 1A Emissions

	Acre-feet	MWh/Ac-ft	CO2e/MWh	CO2E tons
Water Use	647.9	3.62	613.22	719.17

	kWh	Hours	CO2e/MWh	CO2E tons
Electricity Use	240	2,120	613.22	156.00

Emissions Totals (Tons)

Option 1A

	CO2e
On-Road Vehicles	3098.52
Off-Road Vehicles	2704.20
Water Use	719.17
Electricity Use	156.00
Construction Totals	6677.90

Thousand Palms Flood Control Project

Operation Emissions

Assumptions

O&M is dominated by the need to move 51,000 CY of sand every year from Reach 3 (9,000 CY) and Reach 4 (51,000 CY).

Additionally, sediment from storms will require clean-up with an estimate of a worst case annual clean up of 1,785 CY over 15 days.

Sand is moved by loader to dump trucks which unload at a designated Coachella Valley Refuge sand augmentation area (6.5 mile RT avg. 8.5 mile RT worst case).

Storm sediment is moved by loader to dump trucks to landfill (assumed 50 mile RT, 10 percent unpaved)

It is assumed that sand recycle work and storm sediment cleanup do not occur on the same day.

2020 equipment and vehicle emissions factors are used to estimate daily and annual emissions.

Worst-case day is assumed to haul 900 CY from Reach 4 to the sand augmentation area, or that sand is moved approximately one week, 5 days, every month.

Other worst-case day assumption is that the excavation is from the far end of Reach 4, maximizing the travel distance

On-Road		VMT/trip			Daily Emissions lbs						Annual Emissions Tons					
Vehicle Type	Daily Trips	Annual Trips	Daily	Annual Avg	ROG	CO	NOx	PM10	PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Passenger	3	225	90	16875	0.05	0.35	0.04	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Water Truck	--	--	40	3000	0.01	0.03	0.44	0.01	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Dump Trucks	75	4400	637.5	36100	0.14	0.51	7.06	0.18	0.09	0.02	0.00	0.01	0.20	0.01	0.00	0.00
				Summary	0.19	0.86	7.10	0.19	0.09	0.02	0.01	0.05	0.20	0.01	0.00	0.00

Offroad		Daily Emissions lbs						Annual Emissions Tons						
	Daily Hours	Annual Hours	ROG	CO	NOx	PM10	PM2.5	SOx	ROG	CO	NOx	PM10	PM2.5	SOx
Loader Cat 988	8	600	0.90	5.93	11.35	0.44	0.41	0.02	0.03	0.22	0.43	0.02	0.02	0.00

Thousand Palms Flood Control Project

Operation - Fugitive Dust Emissions

Assumptions:

1. Fugitive dust emissions are estimated using AP-42.
2. Equipment usage, material handling quantities, and VMT assumptions are presented under "Operation Emissions" above.
3. Windblown emissions are not substantially changed from existing conditions within the Refuge

Emission Categories

- 1) Earthmoving
- 2) Road Dust Paved/Unpaved

1) Earthmoving

Emission Types

A) Material Loading/Handling

A) Material Loading/Handling (AP-42, p. 13.2.4.3)

$$E = (k)(0.0032)[(U/5)^{-3}]/[(M/2)^{1.4}]$$

E = lb/ton

k = Particle Size Constant (0.35 for PM10 and 0.053 for PM2.5)

U = average wind speed = 25 MPH worst day, 5.4 MPH avg daytime (avg from Indio Met Data)

M = moisture content = 12% watering control

Two separate drops are assumed for bulk material movement, except for scrapers which has separate emissions estimate

	tons/period	Transfer Points
Max Day	1,215	2
Annual	71,260	2

Emission Factors and Emissions

Emission Factors

PM10 Daily	PM2.5 Daily	PM10 Annual	PM2.5 Annual
0.00074	0.00011	0.00010	0.00002

Emissions (Lbs/day)

	PM10	PM2.5
Max Day	1.80	0.27

Emissions (Tons)

	PM10	PM2.5
Annual	0.01	0.00

Thousand Palms Flood Control Project

Operation - Fugitive Dust Emissions

2) Road Dust

Emission Types

- A) Paved Road Dust
- B) Unpaved Road Dust

A) Paved Road Dust

$$E = [k \times (sL)^{0.91} \times (W)^{1.02}] \times (1 - P/4N)$$

E = lb/VMT

k = Constant (0.0022 for PM10 and 0.00054 for PM2.5)

sL = Silt Loading (assumed to be 0.06 g/m2 for 5,000<-ADT<10,000 of Table 13.2.1-2)

W = Average weight of vehicles in tons (calculated below)

P = Days of precipitation (34 assumed for annual calculation)

N = Days in period (365 for annual calculation)

Average Vehicle Weight Calculation

Assumptions

Passenger Vehicles = 2 tons average

Midsized "Delivery" Vehicles = 12 ton average

Heavy-Heavy Duty Trucks = 30 tons average (loaded 40 tons, unloaded 20 tons)

Daily Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Max Day	90	0	574	664	26.2

Total VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Paved VMT	Average Weight (Tons)
Annual	16,875	0	32,490	49,365	20.4

Daily Emission Factors (lb/VMT)

	PM10 Daily	PM2.5 Daily
Max Day	0.00476	0.00117

Emissions (Lbs/day)

	PM10	PM2.5
Max Day	3.16	0.77

Annual Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Annual	0.0036	0.0009

Emissions (Tons)

	PM10	PM2.5
Annual	0.09	0.02

Thousand Palms Flood Control Project

Operation - Fugitive Dust Emissions

B) Unpaved Road Dust

$$E = (k)[(s/12)^{0.9}][W/3]^{0.45}[(365-P)/365]$$

k = constant = 1.5 lb/VMT for PM10 and 0.15 lb/VMT for PM2.5

s = Silt Content (assumed to be 5% - Based on sieving results from similar sandy flood control project type)

W = avg. vehicle weight = calculated below

No correction for number of wet days due to assumption of required mitigation

Average Vehicle Weight Calculation

Assumptions

Personal/Professionals/Inspection Vehicles = 2 tons average

Midsize "Delivery" Vehicles = 8 ton average

Heavy-Heavy Duty Trucks = 30 tons average (loaded 40 tons, unloaded 20 tons)

Daily Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Unpaved VMT	Average Weight (Tons)
Max Day Vehicles	0	0	68	68	30.0

Annual Case VMT	Passenger Vehicles	Delivery/Work Vehicles	Heavy-Heavy Duty Vehicles	Total Unpaved VMT	Average Weight (Tons)
Annual	0	0	3,910	3,910	30.0

Uncontrolled Emission Factors and Emissions

Daily Emission Factors (lb/VMT)

	PM10 Daily	PM2.5 Daily
Max Day Vehicles	0.37	0.04

Emissions (Lbs/day)

	PM10	PM2.5
Max Day Vehicles	25.21	2.52

Annual Emission Factors (lb/VMT)

	PM10 Annual	PM2.5 Annual
Annual	0.37	0.04

Emissions (Tons/year)

	PM10	PM2.5
Annual	0.73	0.07

Thousand Palms Flood Control Project

Operation - Fugitive Dust Emissions

Emissions (assumes 55 percent for watering and 57 percent control for 15 mph speed per Rule 403/403.1 requirements)

Fugitive Dust Emissions Summary

Maximum Day

	Emissions	
	PM10	PM2.5
Material Loading/Handling	1.80	0.27
Paved Road Dust	3.16	0.77
Unpaved Road Dust	25.21	2.52
Total	30.16	3.57

Total Fugitive Emissions

	Annual	
	PM10	PM2.5
Material Loading/Handling	0.01	0.00
Paved Road Dust	0.09	0.02
Unpaved Road Dust	0.73	0.07
Total	0.82	0.10

Thousand Palms Flood Control Project

Operation GHG Emissions

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by The Climate Registry General Reporting Protocol and 2015 Climate Registry Default Emission Factors (April 2015)

Onroad Equipment GHG Emission Calculations

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Motor Gasoline	8.78
Diesel	10.21

TCR Table 13.4 Emission Factors for Each Fuel and Vehicle Type (g/mile)

	CH4	N2O
Gasoline	0.0163	0.0066
Diesel	0.0051	0.0048

Onroad Emission Factors - 2013 (pounds/mile)

	CH4	N2O
Gasoline	0.00004	0.00001
Diesel	0.00001	0.00001

Total On-road GHG Emissions

Proposed Project

Vehicle Type	Gallons	VMT	Emissions lbs			
			CO2	CH4	N2O	CO2e
Gasoline Vehicles	707	16,875	13,679	0.61	0.25	13,768
Diesel Vehicles	6,056	39,100	136,296	0.44	0.41	136,434

Totals	149,976	1.05	0.66	150,202
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Thousand Palms Flood Control Project

Operation GHG Emissions

Offroad Equipment GHG Emission Calculations

Assumptions:

1. GHG emissions are estimated based on guideline and emission factors provided by California Climate Action Registry General Reporting Protocol (ver. 3.1 January 2009)
2. For diesel-fueled equipment, fuel consumption rate of 0.38 lbs/bhp-hr and density of 6.8 lbs/gallon are used.
3. For gasoline-fueled equipment, fuel consumption rate of 0.47 lbs/bhp-hr and density of 6.0 lbs/gallon are used.

TCR Table 13.1 Carbon Dioxide Emission Factors for Transport Fuels (kg CO2/gallon)

	CO2
Gasoline	8.78
Diesel	10.21

TCR Table 13.7 Emission Factors for Each Fuel and Vehicle Type (g/gallon)

Construction	CH4 (g/gallon)	N2O (g/gallon)
Gasoline	0.504	0.224
Diesel	0.576	0.256

Total Offroad GHG Emissions

Proposed Project

	Fuel Use (gallon)	Total Emissions lbs			
		CO2	CH4	N2O	CO2e
Gasoline	0.00	0	0.00	0.00	0
Diesel	5,916	133,142	7.51	3.34	134,335
Totals	5,916	133,142	7.51	3.34	134,335

Thousand Palms Flood Control Project

Operation GHG Emissions

Indirect Water Use CO2e Emissions

Assumption:

1. This is assumed to be based on 11.111 MWh per million gallons or 3.62 MWh per acre-foot (Navigant, 2006; p. 2), with 30,000 gallons required per day over the 60 days of O&M sand removal and 15 days of storm sediment removal.
2. No ongoing electrical use.

Proposed Project

	Acre-feet	MWh/Ac-ft	CO2e/MWh	CO2E tons
Water Use	6.90546692	3.62	613.22	7.67

Emissions Totals (Tons)

Proposed Project	CO2e
On-Road Vehicles	75.10
Off-Road Vehicles	67.17
Water Use	7.67
Operation Totals	149.93

B.2 Air Quality General Conformity

1. Introduction

Section 176(c) of the CAA states that a federal agency cannot issue a permit for, or support an activity within, a nonattainment or maintenance area unless the agency determines it will conform to the most recent USEPA-approved SIP. This means that projects using federal funds or requiring federal approval must not: (1) cause or contribute to any new violation of a NAAQS; (2) increase the frequency or severity of any existing violation; or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone. The General Conformity Rule was updated in March 2010. The revisions to the General Conformity Rule no longer require a regional significance determination to demonstrate that emissions do not exceed 10 percent of the regional emissions inventory.

Based on the present attainment status of the Salton Sea Air Basin, serious PM10 nonattainment and severe ozone nonattainment, a federal action is presumed to conform to the SIP if its annual emissions remain below 70 tons of PM10 or 25 tons of NO_x or VOC. These *de minimis* levels apply to both construction and normal¹ operation and maintenance (O&M) activities. SCAQMD Rule 1901 adopts the guidelines of the General Conformity Rule.

1.1 Lead Agencies

The United States Army Corps of Engineers (USACE) regulatory branch is the Lead Agency under the National Environmental Policy Act (NEPA) and the Coachella Valley Water District (CVWD) is the Lead Agency under the California Environmental Quality Act (CEQA). USACE is the Lead Agency for the proposed Project's General Conformity determination.

2. Project Description

The proposed Project's² construction and normal annual O&M activities are described in Section 2 of the EIR/EIS, the emissions estimation methodology is described in Section 4.3 (Air Quality and Greenhouse Gases), and additional detailed project assumptions and the air pollutant emissions estimates are provided in Appendix B.1.

2.1 Environmental Commitments and Mitigation Measures

The EIR/EIS for the proposed Project identifies Project Environmental Commitments and Mitigation Measures that would reduce or avoid air quality impacts. These commitments and measure do not include regulatory compliance emissions reduction controls, such as the fugitive dust control measures that will

¹ There will be infrequent large maintenance events, primarily related to transported sand and other debris clean-up after major storms, that will not occur regularly or annually. The work required for these larger infrequent maintenance events cannot be reasonably estimated and such events are not required to be estimated under the General Conformity rule; however, it can be determined that these infrequent maintenance events would have work requirements and emissions that would be well below those estimated for project construction.

² The General Conformity rule requires assessment on the selected project alternative, not all project alternatives evaluated in an EIS, where the selected project alternative is the proposed Project (Alternative 1).

be required to be implemented to comply with SCAQMD Rule 403.1³. The Environmental Commitment and the Mitigation Measure identified for air quality emissions reduction are identified below.

EC AQ-1 Concrete Batch Plant. The CVWD shall ensure that the concrete batch plant(s) used as part of this Project is electrically powered, with no diesel engines except for the potential for an emergency generator only to be used in the case of grid power loss. The emergency generator would not be used to regularly power the batch plant operation, and would only be operated long enough to clean out the batch plant after a grid power loss.

MM AQ-1 Off-Road Equipment Engines. The CVWD shall require the use of full Tier 4 engines for all diesel-fueled off-road equipment engines that are 50 horsepower or greater. Exceptions to this requirement may be allowed on a case-by-case basis for specialty equipment or any piece of equipment that would operate for less than 10 days.

to listed biological resources. ECs and Mitigation Measures will be implemented as part of Project design, construction, and O&M, and would be incorporated during all Project activities. The ECs and.

3. General Conformity Rule Applicability Assessment

The actual construction schedule, start and end dates, are unknown so the actual activities that may occur in any one calendar year are not known. Therefore, to be conservative the proposed Project’s construction emissions for the entire, approximately 2-year, construction period are compared with the General Conformity de minimus thresholds. Table B.2-1 presents the total construction emission⁴ and the normal annual operation emissions comparison with the General Conformity de minimus thresholds.

Table B.2-1. Maximum Annual Emissions – Proposed Project			
	VOC	NO _x	PM10
Total Construction Emissions (tons)	1.91	24.63	67.70
Annual Operation Emissions (tons/year)	0.04	0.63	0.85
General Conformity De Minimus Thresholds (tons/year)	25	25	70
<i>Exceeds Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: Appendix B.1.

As shown in Table B.2-1, the annual emissions are below all applicable General Conformity de minimus thresholds, even with the conservative assumption that all construction is completed in one calendar year and without accounting for the NO_x reduction effects of Mitigation Measure AQ-1. The normal annual

³ The proposed Project’s fugitive dust control assumes implementation of the stringent control measures required for compliance with Rules 403 and 403.1 for a rule defined “large operation” within the Rule 403.1 defined Coachella Valley Blowsand Zone. These fugitive dust control measures include the extensive use of water and non-toxic chemical stabilizers along with many other required dust control measures that would be outlined in the fugitive dust control plan that is required to be prepared and submitted to the County for approval prior to initiating construction activities.

⁴ Construction emissions presented in Table B.2-1 are an uncontrolled emissions estimate that does include implementation of environmental commitment measure EC AQ-1 and SCAQMD rule required fugitive dust emission controls but does not include implementation of mitigation measure MM AQ-1. Implementation of MM AQ-1, which could reduce construction off-road equipment emissions by as much as 90 percent, provides substantial additional assurance that the Project’s annual construction NO_x emissions would be below 25 tons per year.

operation emissions are also well below the General Conformity de minimus thresholds. As such, the proposed Project does not require a full General Conformity analysis and is assumed to conform with the USEPA-approved SIP.