Appendix D

BAAQMD CEQA Thresholds of Significance Options and Justification Report

Project Component	Approximate Starting Date	Activity	Duration (Weeks)	TaEquipment	Length/Area	Export/Import	Workers/Others	Max Daily Trips
Utility Relocation								
	9/1/2012	Site and road preparation: Trees and brush trimmed in work areas Grading to allow for access on the East Palo Alto side of the Creek (Winter construction would require the installation of gravel on the access routes and work areas to prevent equipment from sinking)	2 weeks	1 Dump truck 1 Grader 1 four-door pickup	30000+240000=270000		r all compo	
	10/1/2012	Wood pole relocation	4 weeks	Flat bed truck (1st 2 days only) 3 four-door pickups 3 bucket trucks 3 line trucks 1 rope truck 1 tensioner (on a trailer)	12 poles in total = 50*50ft for each pole = 12*50*50 = 30000ft2			
PG&E Electricity Transmission	11/1/2012	Demolition of wood poles and secondary wire removal	6 days					
	10/1/2012	Construction of shoo-fly tower at T3	2 weeks	1 pickup 1 four-door pickup 1 2-ton tool truck with air compressor 1 dump truck 1 70 ton crane Caterpillar (pile driver – 2nd week only)	2400 ft long by 100 wide of disturbed area total = 240000ft2			
	11/1/2012	Tower raises (T1 and T4)	2 weeks (1 week per tower)	Back hoe Concrete truck Pump truck				
	12/1/2012	New Tower Construction and demolition of T2	4 weeks					
	12/1/2012	Demolition of shoo-fly	1 day					
	1/8/2013	Gas line work	4 weeks	2 4-door pickups 1 backhoe 2 flat bed truck				
	1/8/2013	directional drilling	2 weeks	1 directional drill rig				
PG&E Gas Transmission	1/15/2013	export of material	1 week	2 dump trucks 1 flatbed truck	25 trips total			
	1/22/2013	concrete	2 days	1 concrete truck	4 trips total			
	1/29/2013	Demobilization	1 week	2 4-door pickups 1 flat bed truck				
Phase 1								
Site Preparation	1/1/2013	Mobilization Tree Removal Clearing and Grubbing Stripping Demolition	6 Weeks	4 four-door pickups 1 Backhoe 1 Loader 1 Jack Hammer /Concrete Pulverizer (last 2 weeks) 1 Flat bed truck (1st week only)	7.4 + 6.5 acres = 13.9 acres			
Construction of new left bank levee	4/1/2013	Site excavation Levee construction Seeding for erosion control	5 Weeks	4 four-door pickups 3 Excavators 1 Backhoe 2 Loaders 4-6 Dump Trucks (20 cy each) 2 Water Trucks	2850*313.5=893475 (113.5ft wide levee, plus 100ft on each side)	124300 yd3 of fill		124300/20/(6*5)/6=34.5trips/day
Removal of old left bank levee	6/1/2013	Site excavation	3 weeks	4 four-door pickups 3 Excavators 1 Backhoe 2 Loaders 4-6 Dump Trucks (20 cy each) 2 Water Trucks	2850*313.5=893475 (113.5ft wide levee, plus 100ft on each side)	21800 off-haul (to golf course?)(10 weeks)		
Removal of right bank levee	6/1/2013	Site excavation	2 weeks	4 four-door pickups 3 Excavators 1 Backhoe 2 Loaders 4-6 Dump Trucks (20 cy each) 2 Water Trucks	720000 ft2 (2400*300ft)			21800/20/(6*10)/6=3trips/day
Construction of right bank levee	7/1/2013	Levee construction Seeding for erosion control	3 weeks	4 four-door pickups 3 Excavators 1 Backhoe 2 Loaders 4-6 Dump Trucks (20 cy each) 2 Water Trucks	783750 ft2 (2500*313.5ft)	66500 yd3 fill		66500/20/(6*3)/6=30.8trips/day
Construction of downstream access road on right and left banks	8/1/2013	Site preparation and paving	4 weeks	4 four-door pickups 1 Dump truck 1 Grader 1 four-door pickup Last week only 2 Concrete Trucks 1 Asphalt Paver 1 Compactor	paving? Aggregate only?	Left: 4,250 ft; Right: 2,400 ft 16ft wide road plus 10 ft on each side		

Friendship Bridge	9/1/2013	Site excavation Boardwalk construction	6 weeks	4 four-door pickups 1 Backhoe 1 Loader 1 Flat bed truck (2 days in 4th week)	included in channel widening and marshplain terracing; 500*200 ft	
Channel widening and marshplain terracing	6/1/2013	Site excavation Terracing	10 Weeks	4 four-door pickups 3 Excavators 1 Backhoe 2 Loaders 4-6 Dump Trucks (20 cy each) 2 Water Trucks	21.5 acres mid-marsh, 4.8 low-marsh	none
Revegetation	9/1/2013	Installation of irrigation system Revegetation	6 weeks	2 four-door pickups	21.5 acres mid-marsh, 4.8 low-marsh	
Phase 2						
Site Preparation	5/1/2014	Mobilization Clearing and Grubbing	3 Weeks	4 four-door pickups 1 Backhoe 1 Loader 1 Jack Hammer /Concrete Pulverizer (last week only) 1 Flat bed truck (1st week only)	Right: 2,000 ft; Left: 1,250 ft 100ft wide	
Installation of right and left bank floodwalls	6/1/2014	Site excavation Preparation of foundation Construction of floodwalls	5 months	4 four-door pickups 1 Excavator 1 Trencher 1 Backhoe 1 Loader 1 Dump truck 1 Grader 1 four-door pickup 2 Concrete Trucks 1 Flat bed truck (One day each week to deliver sheet piles)	Right: 2,000 ft; Left: 1,250 ft 100ft wide	
Construction of upstream access road on right and left banks	10/1/2014	Site preparation and paving	4 weeks	4 four-door pickups 1 Dump truck 1 Grader 1 four-door pickup Last week only 2 Concrete Trucks 1 Asphalt Paver 1 Compactor		Right: 2,000 ft; Left: 1,250 ft 12 ft wide plus 10 ft on each side
Site Restoration	11/1/2014	Demobilization	2 Weeks	2 four-door pickups 1 Loader Flat bed truck	Right: 2,000 ft; Left: 1,250 ft 50ft wide	

Trips

All Phases – Assume 24 workers maximum per day.

Phase 1 - 190,800 cy fill to site and 21,800 cy off haul using standard 20 cy trucks equals 10,630 trips. Off-haul trips would occur during 10 weeks starting 6/2013, which is 22 trips per work day. 124,300 cy of fill for left bank levee would be delivered starting 4/2013 over 5 weeks (25 work days) for 249 trips per day (Based on HDR Numbers). 66,500 cy of fill for right bank levee would be delivered starting 7/2013 over 3 weeks (15 work days) for 222 trips per day (Based on HDR Numbers).

Phase 2 – Floodwall installation in phase two would likely generate minimal off-haul. 21 Flat Bed Trailer truck trips, one per week, through floodwall installation phase to deliver sheet piles

SF Creek on-road emission rates - weighted average of gas and diesel, 50/50 each county

2012

Vehicle Type	pounds per vehicle mile - Santa Clara											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
LDA	1.25E-04	3.83E-04	3.88E-03	7.32E-06	9.86E-05	5.89E-06		3.91E-05	5.35E-06		0.73	0.76
LDT1	3.27E-04	9.68E-04	9.39E-03	8.52E-06	9.86E-05	1.27E-05		3.91E-05	1.15E-05		0.84	0.88
T7 SC	1.14E-03	2.81E-02	5.15E-03	3.67E-05	2.15E-04	8.05E-04		7.81E-05	7.41E-04		3.84	3.85

2012

Vehicle Type	pounds per vehicle mile - San Mateo											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
LDA	1.48E-04	4.02E-04	4.07E-03	7.36E-06	9.86E-05	6.03E-06		3.91E-05	5.44E-06		0.73	0.77
LDT1	3.54E-04	1.01E-03	9.68E-03	8.56E-06	9.86E-05	1.26E-05		3.91E-05	1.13E-05		0.84	0.88
T7 SC	1.14E-03	2.80E-02	5.15E-03	3.67E-05	2.15E-04	8.05E-04		7.81E-05	7.41E-04		3.84	3.85

2012

Vehicle Type	Pounds per vehicle mile - Average											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
LDA	1.36E-04	3.92E-04	3.97E-03	7.34E-06	9.86E-05	5.96E-06	1.05E-04	3.91E-05	5.40E-06	4.45E-05	0.73	0.77
LDT1	3.41E-04	9.88E-04	9.53E-03	8.54E-06	9.86E-05	1.26E-05	1.11E-04	3.91E-05	1.14E-05	5.05E-05	0.84	0.88
T7 SC	1.14E-03	2.81E-02	5.15E-03	3.67E-05	2.15E-04	8.05E-04	1.02E-03	7.81E-05	7.41E-04	8.19E-04	3.84	3.85

X

Project Component	start	end	9/1/2012	10/1/2012	11/1/2012	12/1/2012	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	10/1/2013	11/1/2013	12/1/2013	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	10/1/2014	11/1/2014	12/1/2014	Days	6 day/week
Project Component	**12/1/2012**	**12/9/2014**				**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	739	633
Utility Relocation	**12/1/2012**	**3/5/2013**				**X**	**X**	**X**	**X**																					94	81
Site and Road prep, Grading for access to East Palo	12/1/2012	12/15/2012				X																								14	12
Wood Pole Relocation, Demo, and Secondary Wire	12/1/2012	12/13/2012				X																								12	10
Construction of Shoofly Towers (T1-4), new tower c	1/1/2013	3/5/2013					X	X	X																					63	54
Gas line work, Directional drilling	4/1/2013	4/29/2013								X																				28	24
export of material from gas line cut/fill	4/18/2013	4/26/2013								X																				8	7
demobilisation	4/27/2013	5/4/2013								X	X																			7	6
Phase 1	**1/1/2013**	**10/13/2013**					**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**														285	244
Site Prep	1/1/2013	2/12/2013					X	X																						42	36
Construction of New Left Bank Levee	4/1/2013	5/6/2013								X	X																			35	30
Removal of Old Left Bank Levee	6/1/2013	6/22/2013										X																		21	18
Removal of Old Right Bank Levee	6/1/2013	6/15/2013										X																		14	12
Haul Trips for Removal of Left and Right Banks	6/1/2013	8/10/2013										X	X	X																70	60
Construction of Right Bank Levee	7/1/2013	7/22/2013											X																	21	18
Construction of downstream access road on right a	8/1/2013	8/29/2013												X																28	24
Friendship Bridge	9/1/2013	10/13/2013													X	X														42	36
Channel Widening and Marshplain Terracing	6/1/2013	8/10/2013										X	X	X																70	60
Revegetation	9/1/2013	10/13/2013													X	X														42	36
Phase 2	**5/1/2014**	**12/9/2014**																				**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	223	191
Site Prep	5/1/2014	6/12/2014																				X	X							42	36
Installation of right and left bank floodwalls	6/1/2014	7/6/2014																					X	X						35	30
Construction of upstream access road on right and l	10/1/2014	11/21/2014																									X	X		52	44
Site Restoration	11/1/2014	12/9/2014																										X	X	39	33
Flat Bed Trailer Truck Trips for sheet pile delivery	6/1/2014	6/1/2014																					X							0	0

X denotes phase is active during this time period

Emission Summary

Project Component	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Utility Relocation	*23*	*275*	*108*	*14*	*4*	*17*	*21*	*1*	*17*	*18*	*0.2*	*2.4*	*1.1*	*0.1*	*0.0*	*0.1*	*0.2*	*0.0*	*0.1*	*0.1*	*89.5*	*90.5*
Site and Road prep, Grading for access to East Palo Alto side of creek	1.5	11.4	13.0	0.0	0.7	0.6	1.3	0.1	0.6	0.7	0.01	0.07	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.00	4.20	4.25
Wood Pole Relocation, Demo, and Secondary Wire removal	0.6	9.8	9.3	0.0	0.7	0.3	1.0	0.2	0.2	0.4	0.01	0.14	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	16.60	16.80
Construction of Shoofly Towers (T1-4), new tower construction and demolition of s	3.4	33.2	18.4	0.0	1.0	1.3	2.3	0.2	1.3	1.5	0.09	0.90	0.50	0.00	0.02	0.04	0.06	0.00	0.03	0.04	57.08	57.66
Gas line work, Directional drilling	17.0	213.6	53.0	13.8	1.0	14.9	15.9	0.2	14.9	15.1	0.10	1.31	0.37	0.08	0.01	0.09	0.10	0.00	0.09	0.09	9.56	9.68
export of material from gas line cut/fill	0.4	4.0	7.1	0.0	0.3	0.1	0.4	0.1	0.1	0.2	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.16
demobilisation	0.3	3.0	7.7	0.0	0.3	0.1	0.4	0.1	0.1	0.2	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.95
Phase 1	*63*	*732*	*323*	*1*	*61*	*31*	*92*	*12*	*30*	*41*	*0.8*	*9.9*	*4.6*	*0.0*	*0.8*	*0.4*	*1.2*	*0.1*	*0.4*	*0.6*	*1042.6*	*1052.7*
Site Prep	3.0	18.4	19.6	0.0	0.9	1.5	2.4	0.2	1.5	1.7	0.05	0.33	0.35	0.00	0.01	0.03	0.04	0.00	0.03	0.03	32.71	33.11
Construction of New Left Bank Levee	15.7	283.9	79.2	0.4	23.2	9.7	32.9	4.8	9.1	13.9	0.24	4.26	1.21	0.01	0.32	0.15	0.47	0.07	0.14	0.20	468.14	472.49
Removal of Old Left Bank Levee	5.8	40.3	34.5	0.1	4.1	2.7	6.8	0.5	2.7	3.2	0.05	0.36	0.31	0.00	0.03	0.02	0.06	0.00	0.02	0.03	31.15	31.47
Removal of Old Right Bank Levee	5.8	40.3	34.5	0.1	4.1	2.7	6.8	0.5	2.7	3.2	0.03	0.24	0.21	0.00	0.02	0.02	0.04	0.00	0.02	0.02	20.76	20.98
Haul Trips for Removal of Left and Right Banks	0.8	20.2	3.7	0.0	1.6	0.6	2.2	0.4	0.5	0.9	0.02	0.61	0.11	0.00	0.04	0.02	0.06	0.01	0.02	0.03	69.05	69.68
Construction of Right Bank Levee	14.2	249.1	72.8	0.3	20.7	8.7	29.4	4.2	8.2	12.4	0.13	2.24	0.66	0.00	0.17	0.08	0.25	0.04	0.07	0.11	245.21	247.49
Construction of downstream access road on right and left banks	9.3	21.1	19.7	0.0	1.1	1.3	2.3	0.2	1.3	1.5	0.04	0.25	0.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	24.84	25.13
Friendship Bridge	1.8	11.0	14.9	0.0	0.9	0.8	1.7	0.2	0.8	1.0	0.03	0.20	0.27	0.00	0.01	0.02	0.03	0.00	0.02	0.02	22.87	23.16
Channel Widening and Marshplain Terracing	6.0	47.1	35.7	0.1	4.5	2.9	7.4	0.6	2.9	3.5	0.18	1.41	1.07	0.00	0.12	0.09	0.21	0.02	0.09	0.10	126.84	128.14
Revegetation	0.3	0.8	7.8	0.0	0.2	0.0	0.2	0.1	0.0	0.1	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
Phase 2	*15*	*102*	*82*	*0*	*6*	*6*	*12*	*1*	*6*	*7*	*0.4*	*4.1*	*2.2*	*0.0*	*0.2*	*0.2*	*0.4*	*0.0*	*0.2*	*0.2*	*397.5*	*401.6*
Site Prep	3.0	18.4	19.6	0.0	0.9	1.5	2.4	0.2	1.5	1.7	0.03	0.17	0.18	0.00	0.01	0.01	0.02	0.00	0.01	0.02	16.35	16.56
Installation of right and left bank floodwalls	5.2	37.1	30.7	0.0	2.7	2.5	5.1	0.4	2.5	2.9	0.30	2.19	1.49	0.00	0.14	0.15	0.29	0.02	0.15	0.17	186.06	188.11
Construction of upstream access road on right and left banks	5.3	21.1	19.7	0.0	1.1	1.3	2.3	0.2	1.3	1.5	0.04	0.25	0.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	24.84	25.13
Site Restoration	0.3	1.9	8.0	0.0	0.3	0.0	0.3	0.1	0.0	0.1	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.13
Flat Bed Trailer Truck Trips for sheet pile delivery	1.0	23.6	4.3	0.0	1.2	0.7	1.9	0.3	0.6	0.9	0.06	1.48	0.27	0.00	0.02	0.04	0.06	0.01	0.04	0.04	169.18	170.72
		79.1																			1529.6	**1544.9** TOTAL
BAAQMD Thresholds	**54**	**54**				**82**			**54**													

QA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
sums match up?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

On-Site Equipment Emission

Project Element	Annual Emissions tons/year									
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Utility Relocation										
Site and Road prep, Grading for access to East Palo Alto side of creek						0.003			0.003	
Wood Pole Relocation, Demo, and Secondary Wire removal						0.000			0.000	
Construction of Shoofly Towers (T1-4)						0.031			0.031	
Gas line work, Directional drilling						0.089			0.089	
export of material from gas line cut/fill						0.000			0.000	
demobilisation						0.000			0.000	
Phase 1										
Site Prep						0.027			0.027	
Construction of New Left Bank Levee						0.039			0.039	
Removal of Old Left Bank Levee						0.024			0.024	
Removal of Old Right Bank Levee						0.016			0.016	
Haul Trips for Removal of Left and Right Banks						0.000			0.000	
Construction of Right Bank Levee						0.024			0.024	
Construction of downstream access road on right and left banks						0.014			0.014	
Friendship Bridge						0.014			0.014	
Channel Widening and Marshplain Terracing						0.079			0.079	
Revegetation						0.000			0.000	
Phase 2										
Site Prep						0.013			0.013	
Installation of right and left bank floodwalls						0.142			0.142	
Construction of upstream access road on right and left banks						0.014			0.014	
Site Restoration						0.000			0.000	
Flat Bed Trailer Truck Trips for sheet pile delivery						0.000			0.000	

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	1.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	3.36	3.36	3.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	17.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.35	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	3.01	3.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	15.65	15.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	5.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	5.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.82	0.82	0.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	14.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	9.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1.79	1.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	6.03	6.03	6.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.28	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.01	3.01	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.25	5.25	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.25	5.25	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32	0.32
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.96	-	-	-	-	-	-
	0.00	0.00	0.00	2.16	6.37	6.37	3.36	33.40	16.00	18.37	21.09	16.16	2.07	2.07	0.00	0.00	0.00	0.00	0.00	0.00	3.01	9.21	5.25	0.00	0.00	5.25	5.57	0.32
exceed threshold? 54	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component		9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																													
Site and Road prep, Grading for acce		-	-	-	11.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se		-	-	-	9.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4		-	-	-	-	33.21	33.21	33.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling		-	-	-	-	-	-	-	213.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f		-	-	-	-	-	-	-	4.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation		-	-	-	-	-	-	-	2.99	2.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																													
Site Prep		-	-	-	-	18.37	18.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee		-	-	-	-	-	-	-	283.88	283.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee		-	-	-	-	-	-	-	-	-	40.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee		-	-	-	-	-	-	-	-	-	40.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig		-	-	-	-	-	-	-	-	-	20.20	20.20	20.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee		-	-	-	-	-	-	-	-	-	-	249.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r		-	-	-	-	-	-	-	-	-	-	-	21.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge		-	-	-	-	-	-	-	-	-	-	-	-	11.04	11.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te		-	-	-	-	-	-	-	-	-	47.07	47.07	47.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation		-	-	-	-	-	-	-	-	-	-	-	-	0.80	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																													
Site Prep		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.37	18.37	-	-	-	-	-	-
Installation of right and left bank floo		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37.14	37.14	-	-	-	-	-
Construction of upstream access roac		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.09	21.09	-
Site Restoration		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.92	1.92
Flat Bed Trailer Truck Trips for sheet p		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.57	-	-	-	-	-	-
		0.00	0.00	0.00	21.12	51.58	51.58	33.21	504.45	286.87	147.93	316.36	88.36	11.84	11.84	0.00	0.00	0.00	0.00	0.00	0.00	18.37	79.08	37.14	0.00	0.00	21.09	23.01	1.92
exceed threshold?	54	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	12.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	9.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	18.41	18.41	18.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	52.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	7.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	7.66	7.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	19.60	19.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	79.23	79.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	34.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	34.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	3.71	3.71	3.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	72.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	19.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	14.94	14.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	35.74	35.74	35.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	7.79	7.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.60	19.60	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.74	30.74	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.72	19.72	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.99	7.99
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.33	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	13.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	0.37	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.03	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	0.06	0.06	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.03	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.05	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.03	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	0.95	0.95	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.31	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.90	0.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	23.22	23.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	4.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	4.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	1.62	1.62	1.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	20.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	1.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.90	0.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	4.47	4.47	4.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.21	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.90	0.90	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.65	2.65	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.06	1.06	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	0.26
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.18	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	1.30	1.30	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	14.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	1.53	1.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	9.69	9.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	2.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	2.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.58	0.58	0.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	8.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	1.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.85	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	2.90	2.90	2.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.53	1.53	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.48	2.48	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.29	1.29	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.04
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	-	-	-	-	-	-
	0.00	0.00	0.00	0.86	2.83	2.83	1.30	24.80	9.77	8.89	12.17	4.77	0.86	0.86	0.00	0.00	0.00	0.00	0.00	0.00	1.53	4.69	2.48	0.00	0.00	1.29	1.33	0.04
exceed threshold? 82	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	1.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	2.26	2.26	2.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	15.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.39	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	2.43	2.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	32.91	32.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	6.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	6.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	2.20	2.20	2.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	29.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	2.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1.74	1.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	7.37	7.37	7.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.22	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.43	2.43	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.13	5.13	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.35	2.35	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.31
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.86	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	0.18	0.18	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.09	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.17	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	4.78	4.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.36	0.36	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	4.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.17	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	0.61	0.61	0.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	0.17	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.38	0.38	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21	0.21	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	0.08
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	1.29	1.29	1.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	14.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	1.53	1.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	9.13	9.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	2.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	2.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.53	0.53	0.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	8.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	1.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.84	0.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	2.88	2.88	2.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.53	1.53	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.47	2.47	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.28	1.28	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.04
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.62	-	-	-	-	-	-
	0.00	0.00	0.00	0.83	2.82	2.82	1.29	24.20	9.20	8.81	11.62	4.69	0.85	0.85	0.00	0.00	0.00	0.00	0.00	0.00	1.53	4.62	2.47	0.00	0.00	1.28	1.32	0.04
exceed threshold? 54	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acce	-	-	-	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4	-	-	-	-	1.47	1.47	1.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	15.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/f	-	-	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.16	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	1.69	1.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	13.91	13.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	3.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	3.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.89	0.89	0.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	12.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access r	-	-	-	-	-	-	-	-	-	-	-	1.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1.01	1.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	3.49	3.49	3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.69	1.69	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.85	2.85	-	-	-	-	-
Construction of upstream access roac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.49	1.49	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	0.12
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.93	-	-	-	-	-	-

PG&E Electricity Transmission - Year 2012 & 2013

	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Project Element Total	23.3	274.9	108.4	13.9	3.9	17.3	21.2	0.9	17.2	18.1	0.2	2.4	1.1	0.1	0.0	0.1	0.2	0.0	0.1	0.1	89.5	90.5

Site and Road prep, Grading for access to East Palo Alto side of creek

Start date	Dec-12
Duration in weeks	2
Total Acres Graded	0.92
Total Fill/Export (yd3)	0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**1.24**	**9.54**	**5.88**	**0.01**	**0.00**	**0.55**	**0.55**	**0.00**	**0.55**	**0.55**	**0.01**	**0.06**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**3.09**	**3.12**
grader	Grader	1				0.5		1.24	9.54	5.88	0.01		0.55	0.55		0.55	0.55	0.01	0.06	0.04	0.00		0.00	0.00		0.00	0.00	3.09	3.12
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.06**	**1.16**	**0.59**	**0.00**	**0.01**	**0.03**	**0.05**	**0.00**	**0.03**	**0.03**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.95**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	1	1	40	40	0.5		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.18
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	1	1	40	40	0.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.63**	**0.00**	**0.63**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	0.5						0.53		0.53	0.06		0.06					0.00		0.00	0.00		0.00			
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00			
road/offroad dust					80	0.5						0.10		0.10	0.02		0.02					0.00		0.00	0.00		0.00			
Worker Commute		24	1	40	960	0.5		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.18**
Total Emissions								**1.53**	**11.36**	**12.95**	**0.02**	**0.73**	**0.59**	**1.32**	**0.12**	**0.59**	**0.71**	**0.01**	**0.07**	**0.08**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**4.20**	**4.25**

Wood Pole Relocation, Demo, and Secondary Wire removal

Start date	Dec-12
Duration in weeks	5
Total Acres Graded	0.00
Total Fill/Export (yd3)	0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.41**	**9.10**	**2.79**	**0.01**	**0.08**	**0.26**	**0.34**	**0.03**	**0.24**	**0.27**	**0.01**	**0.14**	**0.04**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**16.60**	**16.80**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	3	1	40	120	1.25		0.04	0.12	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	1.32
flat bed trailer truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.94
bucket truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.81
line truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.81
rope truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.94
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.53**	**0.00**	**0.53**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	1.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00			
truck loading					0	1.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00			
road/offroad dust					440	1.25						0.53		0.53	0.13		0.13					0.01		0.01	0.00		0.00			
Worker Commute		24	1	40	960	0.5		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.63**	**9.76**	**9.28**	**0.02**	**0.70**	**0.27**	**0.97**	**0.20**	**0.25**	**0.44**	**0.01**	**0.14**	**0.08**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**	**16.60**	**16.80**

Construction of Shoofly Towers (T1-4), new tower construction and demolition of shoo-fly

Start date	Jan-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Duration in weeks	9																											
Total Acres Graded	0.92																											
Total Fill/Export (yd3)	0																											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.92**	**27.98**	**10.34**	**0.03**	**0.00**	**1.16**	**1.16**	**0.00**	**1.16**	**1.16**	**0.08**	**0.76**	**0.28**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**41.76**	**42.14**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				2.25		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.02	0.11	0.08	0.00		0.01	0.01		0.01	0.01	13.92	14.05
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	1				2.25		1.02	9.88	2.86	0.01		0.36	0.36		0.36	0.36	0.03	0.27	0.08	0.00		0.01	0.01		0.01	0.01	13.92	14.05
caterpillar (pile driver)	Other Con	1				2.25		1.30	14.18	4.64	0.02		0.46	0.46		0.46	0.46	0.04	0.38	0.13	0.00		0.01	0.01		0.01	0.01	13.92	14.05
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalt paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.21**	**4.57**	**1.59**	**0.01**	**0.04**	**0.13**	**0.17**	**0.02**	**0.12**	**0.14**	**0.01**	**0.12**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**15.32**	**15.52**
2 door pickup	LDT1	1	1	40	40	2.25		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.79
4 door pickup	LDT1	1	1	40	40	2.25		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.79
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.48
concrete truck	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.48
pump truck	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.48
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.48
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.82**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	2.25						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	2.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	2.25						0.29		0.29	0.07		0.07					0.01		0.01	0.00		0.00		
Worker Commute		24	1	40	960	2.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.01**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**3.36**	**33.21**	**18.41**	**0.05**	**0.95**	**1.30**	**2.26**	**0.18**	**1.29**	**1.47**	**0.09**	**0.90**	**0.50**	**0.00**	**0.02**	**0.04**	**0.06**	**0.00**	**0.03**	**0.04**	**57.08**	**57.66**

PG&E Gas Transmission - Year 2013

	Maximum Daily Emissions in lbs/day									Annual Emissions in tons, except GHGs in metric tons CO2e										
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Project Element Total	**17.7**	**220.6**	**67.7**	**13.8**	**1.5**	**15.1**	**16.6**	**0.4**	**15.1**	**15.4**	**0.1**	**1.3**	**0.4**	**0.1**	**0.0**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**11.6**	**11.8**

Gas line work, Directional drilling

Start date	Apr-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Duration in weeks	4																											
Total Acres Graded	0.00																											
Total Fill/Export (yd3)	0																											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**16.60**	**208.32**	**44.89**	**13.78**	**0.00**	**14.78**	**14.78**	**0.00**	**14.78**	**14.78**	**0.10**	**1.25**	**0.27**	**0.08**		**0.09**	**0.09**		**0.09**	**0.09**	**2.75**	**2.78**
DIRECTIONAL DRILL RIG	DIRECTIO	1				0.5		16.60	208.32	44.89	13.78		14.78	14.78		14.78	14.78	0.10	1.25	0.27	0.08		0.09	0.09		0.09	0.09	2.75	2.78
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalt paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.21**	**4.57**	**1.59**	**0.01**	**0.04**	**0.13**	**0.17**	**0.02**	**0.12**	**0.14**	**0.00**	**0.05**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.81**	**6.90**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	1		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.70
flat bed trailer truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.10
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	1	2	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.10
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.82**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	1						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	1		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**17.04**	**213.55**	**52.96**	**13.79**	**0.95**	**14.92**	**15.88**	**0.18**	**14.91**	**15.09**	**0.10**	**1.31**	**0.37**	**0.08**	**0.01**	**0.09**	**0.10**	**0.00**	**0.09**	**0.09**	**9.56**	**9.68**

export of material from gas line cut/fill

Start date	Apr-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Duration in weeks	1																											
Total Acres Graded	0.00																											
Total Fill/Export (yd3)	0																											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.14**	**3.37**	**0.62**	**0.00**	**0.03**	**0.10**	**0.12**	**0.01**	**0.09**	**0.10**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.15**	**1.16**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.39
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	2	1	40	80	0.25		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					120	0.25						0.14		0.14	0.04		0.04					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	0.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.37**	**4.03**	**7.10**	**0.01**	**0.26**	**0.11**	**0.37**	**0.08**	**0.10**	**0.18**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.15**	**1.16**

demobilisation

Start date	Apr-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e										
Duration in weeks	1																											
Total Acres Graded	0.00																											
Total Fill/Export (yd3)	0																											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.12**	**2.32**	**1.17**	**0.00**	**0.03**	**0.07**	**0.09**	**0.01**	**0.06**	**0.07**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.95**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	0.25		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.18
flat bed trailer truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.39
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.39
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					160	0.25						0.19		0.19	0.05		0.05					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	0.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.35**	**2.99**	**7.66**	**0.01**	**0.31**	**0.07**	**0.39**	**0.09**	**0.07**	**0.16**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.95**

Phase 1

	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Project Element Total	**62.6**	**732.2**	**322.6**	**1.0**	**61.4**	**30.9**	**92.3**	**11.6**	**29.8**	**41.4**	**0.8**	**9.9**	**4.6**	**0.0**	**0.8**	**0.4**	**1.2**	**0.1**	**0.4**	**0.6**	**1042.6**	**1052.7**

Site Prep

Start date **Jan-13**
Duration in weeks 6
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.66**	**16.37**	**10.85**	**0.02**	**0.00**	**1.49**	**1.49**	**0.00**	**1.49**	**1.49**	**0.05**	**0.29**	**0.20**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**27.84**	**28.09**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				1.5		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.07	0.05	0.00		0.01	0.01		0.01	0.01	9.28	9.36
loader	RT Loader	1				1.5		0.83	5.12	3.35	0.00		0.46	0.46		0.46	0.46	0.02	0.09	0.06	0.00		0.01	0.01		0.01	0.01	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	1				1.5		1.22	7.33	4.66	0.01		0.68	0.68		0.68	0.68	0.02	0.13	0.08	0.00		0.01	0.01		0.01	0.01	9.28	9.36
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.10**	**1.28**	**1.73**	**0.00**	**0.02**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**4.43**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.11
flat bed trailer truck	T7 SC	1	1	40	40	1.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.32
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.77**	**0.00**	**0.77**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1.5						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	1.5						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.55**	**0.58**
Total Emissions								**3.01**	**18.37**	**19.60**	**0.03**	**0.90**	**1.53**	**2.43**	**0.17**	**1.53**	**1.69**	**0.05**	**0.33**	**0.35**	**0.00**	**0.01**	**0.03**	**0.04**	**0.00**	**0.03**	**0.03**	**32.71**	**33.11**

Construction of New Left Bank Levee

Start date **Apr-13**
Duration in weeks 5
Total Acres Graded 7.40
Total Fill/Export (yd3) 124300

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**37.21**	**25.55**	**0.04**	**0.00**	**2.63**	**2.63**	**0.00**	**2.63**	**2.63**	**0.08**	**0.56**	**0.38**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**46.40**	**46.82**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				1.25		3.09	23.05	16.01	0.03		1.36	1.36		1.36	1.36	0.05	0.35	0.24	0.00		0.02	0.02		0.02	0.02	23.20	23.41
back hoe	Tractor/Lc	1				1.25		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.06	0.04	0.00		0.01	0.01		0.01	0.01	7.73	7.80
loader	RT Loader	2				1.25		1.67	10.24	6.69	0.01		0.92	0.92		0.92	0.92	0.03	0.15	0.10	0.00		0.01	0.01		0.01	0.01	15.47	15.61
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**10.04**	**245.96**	**46.66**	**0.32**	**1.90**	**7.05**	**8.96**	**0.69**	**6.49**	**7.18**	**0.15**	**3.69**	**0.70**	**0.00**	**0.03**	**0.11**	**0.13**	**0.01**	**0.10**	**0.11**	**421.74**	**425.66**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.25		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.81
line truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.81
rope truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.94
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	1.25		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.84	3.87
dump truck (20 yd3)	T7 SC	6	35	40	8400	1.25		9.57	235.70	43.28	0.31	1.81	6.76	8.57	0.66	6.22	6.88	0.14	3.54	0.65	0.00	0.03	0.10	0.13	0.01	0.09	0.10	402.80	406.48
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**21.22**	**0.00**	**21.22**	**4.05**	**0.00**	**4.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.29**	**0.00**	**0.29**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**
grading					3.5	1.25						3.71		3.71	0.40		0.40					0.05		0.05	0.01		0.01		
truck loading					314	1.25						6.85		6.85	1.04		1.04					0.09		0.09	0.01		0.01		
road/offroad dust					8920	1.25						10.66		10.66	2.62		2.62					0.15		0.15	0.04		0.04		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**15.65**	**283.88**	**79.23**	**0.37**	**23.22**	**9.69**	**32.91**	**4.78**	**9.13**	**13.91**	**0.24**	**4.26**	**1.21**	**0.01**	**0.32**	**0.15**	**0.47**	**0.07**	**0.14**	**0.20**	**468.14**	**472.49**

Removal of Old Left Bank Levee

Start date **Jun-13**
Duration in weeks 3
Total Acres Graded 7.40
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**37.21**	**25.55**	**0.04**	**0.00**	**2.63**	**2.63**	**0.00**	**2.63**	**2.63**	**0.05**	**0.33**	**0.23**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**27.84**	**28.09**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.75		3.09	23.05	16.01	0.03		1.36	1.36		1.36	1.36	0.03	0.21	0.14	0.00		0.01	0.01		0.01	0.01	13.92	14.05
back hoe	Tractor/Lc	1				0.75		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	2				0.75		1.67	10.24	6.69	0.01		0.92	0.92		0.92	0.92	0.02	0.09	0.06	0.00		0.01	0.01		0.01	0.01	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.15**	**2.40**	**1.94**	**0.00**	**0.03**	**0.07**	**0.10**	**0.01**	**0.06**	**0.07**	**0.00**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.31**	**3.38**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.75		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.32
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**4.00**	**0.00**	**4.00**	**0.47**	**0.00**	**0.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					3.5	0.75						3.71		3.71	0.40		0.40					0.03		0.03	0.00		0.00		
truck loading					0	0.75						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	0.75						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.76**	**40.33**	**34.51**	**0.06**	**4.13**	**2.70**	**6.84**	**0.52**	**2.70**	**3.22**	**0.05**	**0.36**	**0.31**	**0.00**	**0.03**	**0.02**	**0.06**	**0.00**	**0.02**	**0.03**	**31.15**	**31.47**

Removal of Old Right Bank Levee

Start date **Jun-13**
Duration in weeks 2
Total Acres Graded 5.50
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**37.21**	**25.55**	**0.04**	**0.00**	**2.63**	**2.63**	**0.00**	**2.63**	**2.63**	**0.03**	**0.22**	**0.15**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**18.56**	**18.73**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.5		3.09	23.05	16.01	0.03		1.36	1.36		1.36	1.36	0.02	0.14	0.10	0.00		0.01	0.01		0.01	0.01	9.28	9.36
back hoe	Tractor/Lc	1				0.5		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	3.09	3.12
loader	RT Loader	2				0.5		1.67	10.24	6.69	0.01		0.92	0.92		0.92	0.92	0.01	0.06	0.04	0.00		0.01	0.01		0.01	0.01	6.19	6.24
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.15**	**2.40**	**1.94**	**0.00**	**0.03**	**0.07**	**0.10**	**0.01**	**0.06**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.20**	**2.25**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.70
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.55
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**4.00**	**0.00**	**4.00**	**0.47**	**0.00**	**0.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					3.5	0.5						3.71		3.71	0.40		0.40					0.02		0.02	0.00		0.00		
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	0.5						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		

Worker Commute		26	1	40	1040	0.5		0.25	0.72	7.02	0.01	0.10	0.01	0.11	0.04	0.01	0.05	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions								5.76	40.33	34.51	0.06	4.13	2.70	6.84	0.52	2.70	3.22	0.03	0.24	0.21	0.00	0.02	0.02	0.04	0.00	0.02	0.02	20.76	20.98

Haul Trips for Removal of Left and Right Banks

Start date Jun-13
Duration in weeks 10
Total Acres Graded 0.00
Total Fill/Export (yd3) 21800

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		0.82	20.20	3.71	0.03	0.16	0.58	0.73	0.06	0.53	0.59	0.02	0.61	0.11	0.00	0.00	0.02	0.02	0.00	0.02	0.02	69.05	69.68
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	6	3	40	720	2.5		0.82	20.20	3.71	0.03	0.16	0.58	0.73	0.06	0.53	0.59	0.02	0.61	0.11	0.00	0.00	0.02	0.02	0.00	0.02	0.02	69.05	69.68
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								0.00	0.00	0.00	0.00	1.46	0.00	1.46	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00	0.00
grading					0	2.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					28	2.5						0.60		0.60	0.09		0.09					0.02		0.02	0.00		0.00		
road/offroad dust					720	2.5						0.86		0.86	0.21		0.21					0.02		0.02	0.01		0.01		
Worker Commute		0	0	0	0	2.5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions								0.82	20.20	3.71	0.03	1.62	0.58	2.20	0.36	0.53	0.89	0.02	0.61	0.11	0.00	0.04	0.02	0.06	0.01	0.02	0.03	69.05	69.68

Construction of Right Bank Levee

Start date Jul-13
Duration in weeks 3
Total Acres Graded 6.50
Total Fill/Export (yd3) 66500

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								5.36	37.21	25.55	0.04	0.00	2.63	2.63	0.00	2.63	2.63	0.05	0.33	0.23	0.00		0.02	0.02		0.02	0.02	27.84	28.09
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.75		3.09	23.05	16.01	0.03		1.36	1.36		1.36	1.36	0.03	0.21	0.14	0.00		0.01	0.01		0.01	0.01	13.92	14.05
back hoe	Tractor/Lc	1				0.75		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	2				0.75		1.67	10.24	6.69	0.01		0.92	0.92		0.92	0.92	0.02	0.09	0.06	0.00		0.01	0.01		0.01	0.01	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		8.63	211.16	40.27	0.28	1.63	6.06	7.69	0.59	5.57	6.17	0.08	1.90	0.36	0.00	0.01	0.05	0.07	0.01	0.05	0.06	217.37	219.39
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.75		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.32
dump truck (20 yd3)	T7 SC	6	31	40	7440	0.75		8.48	208.76	38.33	0.27	1.60	5.99	7.59	0.58	5.51	6.09	0.08	1.88	0.34	0.00	0.01	0.05	0.07	0.01	0.05	0.05	214.06	216.02
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								0.00	0.00	0.00	0.00	18.99	0.00	18.99	3.58	0.00	3.58	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.03	0.00	0.03	0.00	0.00
grading					3.5	0.75						3.71		3.71	0.40		0.40					0.03		0.03	0.00		0.00		
truck loading					280	0.75						6.11		6.11	0.92		0.92					0.05		0.05	0.01		0.01		
road/offroad dust					7680	0.75						9.17		9.17	2.25		2.25					0.08		0.08	0.02		0.02		
Worker Commute		26	1	40	1040	0.75		0.25	0.72	7.02	0.01	0.10	0.01	0.11	0.04	0.01	0.05	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions								14.24	249.09	72.84	0.33	20.73	8.69	29.42	4.21	8.21	12.42	0.13	2.24	0.66	0.00	0.17	0.08	0.25	0.04	0.07	0.11	245.21	247.49

Construction of downstream access road on right and left banks

Start date Aug-13
Duration in weeks 4
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								2.45	16.81	10.18	0.02	0.00	1.18	1.18	0.00	1.18	1.18	0.03	0.20	0.12	0.00		0.01	0.01		0.01	0.01	18.56	18.73
grader	Grader	1				1		1.24	9.54	5.88	0.01		0.55	0.55		0.55	0.55	0.01	0.11	0.07	0.00		0.01	0.01		0.01	0.01	6.19	6.24
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	1				1		1.17	7.02	4.08	0.01		0.62	0.62		0.62	0.62	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	6.19	6.24
compactor	Plate Com	1				1		0.04	0.25	0.21	0.00		0.01	0.01		0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	6.19	6.24
On-Road Vehicle Emissions		0				0		0.20	3.56	2.52	0.01	0.05	0.10	0.14	0.02	0.09	0.11	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.28	6.41
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	1		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.10
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	1	1	40	40	1		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.55
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								0.00	0.00	0.00	0.00	0.91	0.00	0.91	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
grading					0.5	1						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	1						0.38		0.38	0.09		0.09					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1		0.25	0.72	7.02	0.01	0.10	0.01	0.11	0.04	0.01	0.05	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving					2			6.40										0.00											
Total Emissions								9.31	21.09	19.72	0.03	1.06	1.29	2.35	0.21	1.28	1.49	0.04	0.25	0.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	24.84	25.13

Friendship Bridge

Start date Sep-13
Duration in weeks 6
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								1.44	9.04	6.19	0.01	0.00	0.80	0.80	0.00	0.80	0.80	0.03	0.16	0.11	0.00		0.01	0.01		0.01	0.01	18.56	18.73
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				1.5		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.07	0.05	0.00		0.01	0.01		0.01	0.01	9.28	9.36
loader	RT Loader	1				1.5		0.83	5.12	3.35	0.00		0.46	0.46		0.46	0.46	0.02	0.09	0.06	0.00		0.01	0.01		0.01	0.01	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		0.10	1.28	1.73	0.00	0.02	0.03	0.06	0.01	0.03	0.04	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.31	4.43
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.11
flat bed trailer truck	T7 SC	1	1	40	40	1.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.32
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								0.00	0.00	0.00	0.00	0.77	0.00	0.77	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
grading					0.5	1.5						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	1.5						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		0.25	0.72	7.02	0.01	0.10	0.01	0.11	0.04	0.01	0.05	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total Emissions																												
						1.79	11.04	14.94	0.02	0.90	0.85	1.74	0.17	0.84	1.01	0.03	0.20	0.27	0.00	0.01	0.02	0.03	0.00	0.02	0.02	22.87	23.16

Channel Widening and Marshplain Terracing

Start date	Jun-13
Duration in weeks	10
Total Acres Graded	26.30
Total Fill/Export (yd3)	0

							Daily Emissions in lbs/day									Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**37.21**	**25.55**	**0.04**	**0.00**	**2.63**	**2.63**	**0.00**	**2.63**	**2.63**	**0.16**	**1.12**	**0.77**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**92.80**	**93.65**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				2.5		3.09	23.05	16.01	0.03		1.36	1.36		1.36	1.36	0.09	0.69	0.48	0.00		0.04	0.04		0.04	0.04	46.40	46.82
back hoe	Tractor/Lc	1				2.5		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.02	0.12	0.09	0.00		0.01	0.01		0.01	0.01	15.47	15.61
loader	RT Loader	2				2.5		1.67	10.24	6.69	0.01		0.92	0.92		0.92	0.92	0.05	0.31	0.20	0.00		0.03	0.03		0.03	0.03	30.93	31.22
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		**0.42**	**9.14**	**3.17**	**0.01**	**0.08**	**0.26**	**0.34**	**0.03**	**0.24**	**0.27**	**0.01**	**0.27**	**0.10**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**34.04**	**34.49**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	2.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	3.52
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	2.5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.67	7.74
dump truck (20 yd3)	T7 SC	6	1	40	240	2.5		0.27	6.73	1.24	0.01	0.05	0.19	0.24	0.02	0.18	0.20	0.01	0.20	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	23.02	23.23
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**4.29**	**0.00**	**4.29**	**0.54**	**0.00**	**0.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.12**	**0.00**	**0.12**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**
grading					3.5	2.5						3.71		3.71	0.40		0.40					0.10		0.10	0.01		0.01		
truck loading					0	2.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					480	2.5						0.57		0.57	0.14		0.14					0.02		0.02	0.00		0.00		
Worker Commute		26	1	40	1040	2.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.01**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**6.03**	**47.07**	**35.74**	**0.06**	**4.47**	**2.90**	**7.37**	**0.61**	**2.88**	**3.49**	**0.18**	**1.41**	**1.07**	**0.00**	**0.12**	**0.09**	**0.21**	**0.02**	**0.09**	**0.10**	**126.84**	**128.14**

Revegetation

Start date	Sep-13
Duration in weeks	6
Total Acres Graded	0.00
Total Fill/Export (yd3)	0

							Daily Emissions in lbs/day									Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		**0.03**	**0.08**	**0.76**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.01**	**1.06**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	1.5		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.00**	**0.10**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					80	1.5						0.10		0.10	0.02		0.02					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.28**	**0.80**	**7.79**	**0.01**	**0.21**	**0.01**	**0.22**	**0.07**	**0.01**	**0.08**	**0.00**	**0.01**	**0.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.01**	**1.06**

Phase 2

	Daily ROG	Daily NOx	Daily CO	Daily SO2	Daily PM10 Dust	Daily PM10 Exhaust	Daily PM10	Daily PM2.5 Dust	Daily PM2.5 Exhaust	Daily PM2.5	Annual ROG	Annual NOx	Annual CO	Annual SO2	Annual PM10 Dust	Annual PM10 Exhaust	Annual PM10	Annual PM2.5 Dust	Annual PM2.5 Exhaust	Annual PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Project Element Total	**14.8**	**102.1**	**82.4**	**0.1**	**6.1**	**6.0**	**12.1**	**1.1**	**5.9**	**7.1**	**0.4**	**4.1**	**2.2**	**0.0**	**0.2**	**0.2**	**0.4**	**0.0**	**0.2**	**0.2**	**397.5**	**401.6**

Site Prep

Start date May-14
Duration in weeks 3
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
On-Site Equipment Emissions								**2.66**	**16.37**	**10.85**	**0.02**	**0.00**	**1.49**	**1.49**	**0.00**	**1.49**	**1.49**	**0.02**	**0.15**	**0.10**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**13.92**	**14.05**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	1				0.75		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	1				0.75		0.83	5.12	3.35	0.00		0.46	0.46		0.46	0.46	0.01	0.05	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con:	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	1				0.75		1.22	7.33	4.66	0.01		0.68	0.68		0.68	0.68	0.01	0.07	0.04	0.00		0.01	0.01		0.01	0.01	4.64	4.68
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.10**	**1.28**	**1.73**	**0.00**	**0.02**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.16**	**2.22**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	1	1	40	40	0.75		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.16
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.77**	**0.00**	**0.77**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	0.75						0.53		0.53	0.06		0.06					0.00		0.00	0.00		0.00		
truck loading					0	0.75						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	0.75						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.28**	**0.29**
Total Emissions								**3.01**	**18.37**	**19.60**	**0.03**	**0.90**	**1.53**	**2.43**	**0.17**	**1.53**	**1.69**	**0.03**	**0.17**	**0.18**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.02**	**16.35**	**16.56**

Installation of right and left bank floodwalls

Start date Jun-14
Duration in weeks 20
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
On-Site Equipment Emissions								**4.79**	**32.86**	**21.19**	**0.03**	**0.00**	**2.37**	**2.37**	**0.00**	**2.37**	**2.37**	**0.29**	**1.97**	**1.27**	**0.00**		**0.14**	**0.14**		**0.14**	**0.14**	**154.67**	**156.08**
grader	Grader	1				5		1.24	9.54	5.88	0.01		0.55	0.55		0.55	0.55	0.07	0.57	0.35	0.00		0.03	0.03		0.03	0.03	30.93	31.22
excavator	Excavator	1				5		1.03	7.68	5.34	0.01		0.45	0.45		0.45	0.45	0.06	0.46	0.32	0.00		0.03	0.03		0.03	0.03	30.93	31.22
back hoe	Tractor/Lo	1				5		0.61	3.92	2.84	0.00		0.34	0.34		0.34	0.34	0.04	0.24	0.17	0.00		0.02	0.02		0.02	0.02	30.93	31.22
trencher	Trencher	1				5		1.08	6.60	3.78	0.01		0.57	0.57		0.57	0.57	0.06	0.40	0.23	0.00		0.03	0.03		0.03	0.03	30.93	31.22
loader	RT Loader	1				5		0.83	5.12	3.35	0.00		0.46	0.46		0.46	0.46	0.05	0.31	0.20	0.00		0.03	0.03		0.03	0.03	30.93	31.22
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con:	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.20**	**3.56**	**2.52**	**0.01**	**0.05**	**0.10**	**0.14**	**0.02**	**0.09**	**0.11**	**0.01**	**0.21**	**0.15**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**31.39**	**32.03**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	5		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.38	8.80
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.01	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.34	15.49
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	1	1	40	40	5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.67	7.74
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**2.50**	**0.00**	**2.50**	**0.32**	**0.00**	**0.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**
grading					2	5						2.12		2.12	0.23		0.23					0.12		0.12	0.01		0.01		
truck loading					0	5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	5						0.38		0.38	0.09		0.09					0.02		0.02	0.01		0.01		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.25**	**37.14**	**30.74**	**0.05**	**2.65**	**2.48**	**5.13**	**0.38**	**2.47**	**2.85**	**0.30**	**2.19**	**1.49**	**0.00**	**0.14**	**0.15**	**0.29**	**0.02**	**0.15**	**0.17**	**186.06**	**188.11**

Construction of upstream access road on right and left banks

Start date Oct-14
Duration in weeks 4
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
On-Site Equipment Emissions								**2.45**	**16.81**	**10.18**	**0.02**	**0.00**	**1.18**	**1.18**	**0.00**	**1.18**	**1.18**	**0.03**	**0.20**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**18.56**	**18.73**
grader	Grader	1				1		1.24	9.54	5.88	0.01		0.55	0.55		0.55	0.55	0.01	0.11	0.07	0.00		0.01	0.01		0.01	0.01	6.19	6.24
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con:	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	1				1		1.17	7.02	4.08	0.01		0.62	0.62		0.62	0.62	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	6.19	6.24
compactor	Plate Comp	1				1		0.04	0.25	0.21	0.00		0.01	0.01		0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	6.19	6.24
On-Road Vehicle Emissions		0				0		**0.20**	**3.56**	**2.52**	**0.01**	**0.05**	**0.10**	**0.14**	**0.02**	**0.09**	**0.11**	**0.00**	**0.04**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.28**	**6.41**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	1		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.10
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	1	1	40	40	1		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.55
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.91**	**0.00**	**0.91**	**0.15**	**0.00**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1						0.53		0.53	0.06		0.06					0.01		0.01	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	1						0.38		0.38	0.09		0.09					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Paving					1			**2.35**										**0.00**											
Total Emissions								**5.25**	**21.09**	**19.72**	**0.03**	**1.06**	**1.29**	**2.35**	**0.21**	**1.28**	**1.49**	**0.04**	**0.25**	**0.24**	**0.00**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**24.84**	**25.13**

Site Restoration

Start date Nov-14
Duration in weeks 2
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con:	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.07**	**1.20**	**0.97**	**0.00**	**0.02**	**0.03**	**0.05**	**0.01**	**0.03**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.13**
2 door pickup	LDT1	2	1	40	80	0.5		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.35
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	1	1	40	40	0.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	1	40	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		

truck loading				0	0.5				0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust				120	0.5				0.14		0.14	0.04		0.04					0.00		0.00	0.00		0.00		
Worker Commute	26	1	40	1040	0.5	**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions						**0.32**	**1.92**	**7.99**	**0.01**	**0.26**	**0.04**	**0.31**	**0.08**	**0.04**	**0.12**	**0.00**	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.13**

Flat Bed Trailer Truck Trips for sheet pile delivery

Start date	**Jun-14**
Duration in weeks	21
Total Acres Graded	0.00
Total Fill/Export (yd3)	0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day									Annual Emissions in tons, except GHGs in metric tons CO2e										
								ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.96**	**23.57**	**4.33**	**0.03**	**0.18**	**0.68**	**0.86**	**0.07**	**0.62**	**0.69**	**0.06**	**1.48**	**0.27**	**0.00**	**0.01**	**0.04**	**0.05**	**0.00**	**0.04**	**0.04**	**169.18**	**170.72**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	21	1	40	840	5.25		0.96	23.57	4.33	0.03	0.18	0.68	0.86	0.07	0.62	0.69	0.06	1.48	0.27	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.18	170.72
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tood truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**0.00**	**1.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					840	0.5						1.00		1.00	0.25		0.25					0.01		0.01	0.00		0.00		
Worker Commute		0	0	0	0	0.5		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.96**	**23.57**	**4.33**	**0.03**	**1.18**	**0.68**	**1.86**	**0.31**	**0.62**	**0.93**	**0.06**	**1.48**	**0.27**	**0.00**	**0.02**	**0.04**	**0.06**	**0.01**	**0.04**	**0.04**	**169.18**	**170.72**

Emission Summary

Project Component	CO2 (MT)	Total GHGs (MT CO2e)
Utility Relocation	*90*	*91*
Site and Road prep, Grading for access to East Palo Alto side of creek	4	4
Wood Pole Relocation, Demo, and Secondary Wire removal	17	17
Construction of Shoofly Towers (T1-4), new tower construction and demolition of	57	58
Gas line work, Directional drilling	10	10
export of material from gas line cut/fill	1	1
demobilisation	1	1
Phase 1	*1043*	*1053*
Site Prep	33	33
Construction of New Left Bank Levee	468	472
Removal of Old Left Bank Levee	31	31
Removal of Old Right Bank Levee	21	21
Haul Trips for Removal of Left and Right Banks	69	70
Construction of Right Bank Levee	245	247
Construction of downstream access road on right and left banks	25	25
Friendship Bridge	23	23
Channel Widening and Marshplain Terracing	127	128
Revegetation	1	1
Phase 2	*398*	*402*
Site Prep	16	17
Installation of right and left bank floodwalls	186	188
Construction of upstream access road on right and left banks	25	25
Site Restoration	1	1
Flat Bed Trailer Truck Trips for sheet pile delivery	169	171
	1530	**1545** TOTAL

BAAQMD Thresholds

QA	YES	YES
sums match up?	YES	YES
	YES	YES

On-Site Equipment Emission

Project Element
Utility Relocation
Site and Road prep, Grading for access to East Palo Alto side of creek
Wood Pole Relocation, Demo, and Secondary Wire removal
Construction of Shoofly Towers (T1-4)

Gas line work, Directional drilling
export of material from gas line cut/fill
demobilisation
Phase 1
Site Prep
Construction of New Left Bank Levee
Removal of Old Left Bank Levee
Removal of Old Right Bank Levee
Haul Trips for Removal of Left and Right Banks
Construction of Right Bank Levee
Construction of downstream access road on right and left banks
Friendship Bridge
Channel Widening and Marshplain Terracing
Revegetation
Phase 2
Site Prep
Installation of right and left bank floodwalls
Construction of upstream access road on right and left banks
Site Restoration
Flat Bed Trailer Truck Trips for sheet pile delivery

Emission Rates

On-Site Equipment - CALEEMOD

Equipment Name	Horse-power	Load Factor	Grams per hp-hour per equipment											
			ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
Crane	240	0.43	0.558	5.428	1.572	0.006		0.196	0.196		0.196	0.196	568.299	573.494
Excavator	157	0.57	0.652	4.868	3.381	0.006		0.288	0.288		0.288	0.288	568.299	573.494
Other Construction Equipment	350	0.62	0.339	3.704	1.212	0.005		0.121	0.121		0.121	0.121	568.299	573.494
RT Loader	87	0.54	1.007	6.177	4.039	0.006		0.555	0.555		0.555	0.555	568.299	573.494
Grader	162	0.61	0.712	5.471	3.376	0.006		0.315	0.315		0.315	0.315	568.299	573.494
Tractor/Loader/Backhoe	75	0.55	0.835	5.394	3.908	0.006		0.474	0.474		0.474	0.474	568.300	573.495
Plate Compactor	8	0.43	0.661	4.142	3.469	0.008		0.165	0.165		0.165	0.165	568.300	573.495
Crushing/Proc. Equipment	85	0.78	1.042	6.269	3.984	0.006		0.582	0.582		0.582	0.582	568.299	573.494
Paver	89	0.62	1.205	7.217	4.194	0.006		0.637	0.637		0.637	0.637	568.299	573.494
Trencher	69	0.75	1.185	7.231	4.143	0.006		0.620	0.620		0.620	0.620	568.299	573.494
DIRECTIONAL DRILL RIG	2000	0.42	1.120	14.061	3.030	0.930		0.998	0.998		0.998	0.998	505.755	510.379
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

On-Road Vehicles and Trucks (Santa Clara & San Mateo Counties, weighted average - EMFAC2011

Vehicle Type			Pounds per vehicle mile											
			ROG	NOx	CO	SO2	PM10 Dust (TW&BW)	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
LDA			1.36E-04	3.92E-04	3.97E-03	7.34E-06	9.86E-05	5.96E-06	1.05E-04	3.91E-05	5.40E-06	4.45E-05	0.73	0.77
LDT1			3.41E-04	9.88E-04	9.53E-03	8.54E-06	9.86E-05	1.26E-05	1.11E-04	3.91E-05	1.14E-05	5.05E-05	0.84	0.88
T7 SC			1.14E-03	2.81E-02	5.15E-03	3.67E-05	2.15E-04	8.05E-04	1.02E-03	7.81E-05	7.41E-04	8.19E-04	3.84	3.88
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

On-Site Dust Emissions - Caleemod

Type of Activity		Unit												
			ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
Site Grading w/o mitigation		lb/VMT					1.543			0.167				
export/fill		lb/ton					0.022			0.003				
brake/tire wear						see above EMFAC			see above EMFAC					
onroad dust		lb/VMT					0.001			0.000				

Offroad Equipment

grader	Grader
70 ton crane	Crane
caterpillar (pile driver)	Other Construction Equipment
back hoe	Tractor/Loader/Backhoe
loader	RT Loader
jack hammer/concrete pulve	Crushing/Proc. Equipment
excavator	Excavator
asphalth paver	Paver
compactor	Plate Compactor
trencher	Trencher
DIRECTIONAL DRILL RIG	DIRECTIONAL DRILL RIG

Onroad

4 door pickup	LDT1
flat bed trailer truck	T7 SC
bucket truck	T7 SC
line truck	T7 SC
rope truck	T7 SC
2 door pickup	LDT1
2 ton tool truck w c	T7 SC
concrete truck	T7 SC
pump truck	T7 SC
water truck	T7 SC
dump truck (20 yd3	T7 SC
haul truck	T7 SC

Other

tensioner attached to trailer

	Equipmen	Reference
grader	Grader	Caleemod Table 3.3
70 ton crane	Crane	http://www.ma (HP from website, Load factor from Table 3.3 - OH Tractor)
pile driver (caterpillar)	Other Con	http://www.kellytractor.com/eng/products/foundation_drilling/pile_driving.aspx (HP from website, Load factor from Table 3.3 - other constru
back hoe	Tractor/Lo	Caleemod Table 3.3
loader	RT Loader	Caleemod Table 3.3
jack hammer/concrete pulverize	Crushing/F	Caleemod Table 3.3
excavator	Excavator	Caleemod Table 3.3
asphalth paver	Paver	Caleemod Table 3.3
compactor	Plate Com	Caleemod Table 3.3
trencher	Trencher	Caleemod Table 3.4
DIRECTIONAL DRILL RIG	DIRECTION	AP42 http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf

ıction equipment

On-Site Equipment Emission Rates

Caleemod is used to calculate emission rate for each type of construction equipment operating at 8 hours per day.

The load factors used for Caleemod modeling are updated to reflect the values presented in the 2011 Carl Moyer Guidelines, which are based on ARB's most recently released load factor data (ARB 2011).

8	Modeled Equipment Operating hours/day
8	Average Equipment Operating hours/day
24	Average Equipment Operating days/month (4 weeks * 6 days)

Reference:

California Air Resources Board (ARB). 2011. The Carl Moyer Program Guidelines. Release Date: June 6, 2011.

0.002204623	grams/pound
0.0005	tons/pound

Worker Commute Trips

The assumed percentages of vehicle types that workers used to commute are listed below:

Vehicle Type	Percent of Vehicle Type	
LDA	50%	Passenger Cars
LDT1	50%	Light-Duty Trucks (0-3750 lbs)

On-Road Vehicles Emission Rates

EMFAC2011 is used to calculate emission rates for worker commute vehicles and hauling trucks.

Emission rates used for the analysis are based on averaged travel speed and are the weighted average of gas and diesel rates.

For worker commute vehicles, it is assumed that 50% would be passenger cars (LDA) and 50% would be light-duty trucks (LDT1).

Hauling trucks are assumed to be heavy duty diesel single unit construction trucks (T7 SC)

GHG Assumptions

MT/Short Tons	0.90718
MT/lbs	0.00045

Diesel Fuel (on-site)

	CO2	CH4	N2O	Total GHGS (CO2e)
kg/gal diesel	10.15	0.00058	0.00026	10.24
GWP	1	21	310	
Ratio	1	0.0012	0.0079	1.009

Diesel Fuel (On-road)

	CO2	CH4 (g/mi)	N2O (g/mi)	
Passenger Cars (1983 - Present)		0.0005	0.001	
Light Trucks (1996 - Present)		0.001	0.0015	
Heavy-Duty Vehicles		0.0051	0.0048	
GWP	1	21	310	

Gasoline (on-road)

	CO2	Other GHGs (on road)		Total GHGS (CO2e)
Percent of GHGs	95%	5%		
GWP		1		
Ratio	1	0.053		1.053

Electricity

	CO2	CH4	N2O	Total GHGS (CO2e)
lbs/MWh	681	2.83E-02	6.23E-03	684
GWP	1	21	310	
Ratio	1	8.72E-04	2.84E-03	1.004

CH4 and N2O for Off-road diesel fuel are calculated by scaling the estimated CO2 emissions according to the California Climate Action Registry (2009a).

CH4 and N2O for On-road diesel fuel are calculated by scaling the estimated CO2 emissions according to the California Climate Action Registry (2009b).

Other GHGs for gasoline are calculated by scaling the estimated CO2 emissions according to the EPA (2011a).

GHGs for electricity are based on the eGRID subregion GHG output emission rates for year 2007 (EPA 2011b).

Reference:

Available: <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf>.

Available: <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf>.

Available: < http://www.epa.gov/oms/climate/420f05004.htm>.

EPA. 2011b. eGRID2010 Version 1.1. Available: < http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html>.

Fugitive Dust from Grading

EFpm15	2.571		
EFtsp	5.373		
mean vehical speed (S)	7.1	mph	AP-42
FPM25	0.031	scaling fact	AP-42
FPM10	0.600	scaling fact	AP-42
EFPM10	1.543	pound/VMT	
EFPM2.5	0.167	pound/VMT	
blade width	12	ft	Caleemod App A
conversion	8.25	43560 ft2/acre*5280 ft/mile	

Fugitive Dust from Truck Loading/Unloading

EFPM10	0.021795		
EFPM2.5	0.0033		
K10	0.35	AP-42	
K25	0.053	AP-42	
U	5	MPH wind speed WRCC for	
M	0.12	% moisture content AP-42	
	1.264166	tons per yd3	

Table 3.7 Grading Equipment Acres Per Day

Equipment Type	Acres per 8
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

Grams/Hour

Equipment Type	Year	Low HP	High HP	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Crane	2012	176	250	7.065	0.558	1.572	5.428	0.006	0.196	0.196	568.299	0.05
Excavator	2012	121	175	11.942	0.652	3.381	4.868	0.006	0.288	0.288	568.299	0.058
Other Construction Equipment	2012	251	500	25.291	0.339	1.212	3.704	0.005	0.121	0.121	568.299	0.03
RT Loader	2012	51	120	9.383	1.007	4.039	6.177	0.006	0.555	0.555	568.299	0.09
Grader	2012	121	175	7.384	0.712	3.376	5.471	0.006	0.315	0.315	568.299	0.064
Tractor/Loader/Backhoe	2012	51	120	7.016	0.835	3.908	5.394	0.006	0.474	0.474	568.3	0.075
Plate Compactor	2012	6	15	0.79	0.661	3.469	4.142	0.008	0.165	0.165	568.3	0.059
Crushing/Proc. Equipment	2012	51	120	5.173	1.042	3.984	6.269	0.006	0.582	0.582	568.299	0.094
Paver	2012	51	120	12.058	1.205	4.194	7.217	0.006	0.637	0.637	568.299	0.108
Trencher	2012	51	120	19.371	1.185	4.143	7.231	0.006	0.62	0.62	568.299	0.106
DIRECTIONAL DRILL RIG	2012	51	2600	0	1.1203732	3.029997	14.061363	0.9298644	0.9979032	0.9979032	505.75549	0
1	2	3	4	5	6	7	8	9	10	11	12	13
DIRECTIONAL DRILL RIG	2012	51	2600	0	0.00247	0.00668	0.031	0.00205	0.0022	0.0022	1.115	0

Crane	240
Excavator	157
Other Construction Equipment	350
RT Loader	87
Grader	162
Tractor/Loader/Backoes	75
Plate Compactor	8
Crushing/Proc. Equipment	85
Paver	89
Trencher	69
DIRECTIONAL DRILL RIG	2000

Paving

Emissions based on Calculation Details in CalEEMod Users Guide, Appendix A, pages 16-17

Eap = Efap x Aparking

	Unmitigated	Mitigated	
VOC Emissions (E)	0	0	pounds of VOC per day
EF	2.62	2.62	lbs of VOC p CalEEMod default, based on SMAQMD
A	0	0	paving acreage

Access Roads	length	width	acreage
Left levee	4250	16	1.561065
Right Levee	2400	16	0.881543
Left Floodb	1250	12	0.344353
Right Flood	2000	12	0.550964

ft2/acre 43560

ihr Day

Methodology

Calculation Methodology: USEPA AP-42, Paved Roads, Section 13.2.1, Revised January 2011:
http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf
Avg vehicle weight and silt loading on Local Roads within San Mateo and Santa Clara County:
http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9.pdf
Precipitation Days greater than 0.254mm (0.01 in):
http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6646

Emission Factor Calculation

$$E_{ext} = \left[k\,(sL)^{0.91} \times (W)^{1.02} \right] (1 - P/4N)$$

Pollutant	Variables					Emission Factor (lbs per VMT)
	k	sL	W	P	N	
PM_{10}	0.0022	0.2	2.4	56	365	0.00119
$PM_{2.5}$	0.00054	0.2	2.4	56	365	0.00029

E = particulate emission factor (lbs of particulate matter/VMT)	
k = particle size multiplier (lb/VMT)	*default from AP-42*
sL = roadway silt loading (g/m2)	*AP-42 Table 13.2.1-2, silt loading baseline for 500-5000 ADT roads*
W = average weight of vehicles on the road (tons)	*ARB Section 7.9, Table 3, San Diego County*
P = number of wet days with at least 0.254mm of precipitation	*WRCC 1914-2010 average for Lindbergh Field*
N = number of days in the averaging period	*annual days*

X

Project Component	start	end	9/1/2012	10/1/2012	11/1/2012	12/1/2012	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	10/1/2013	11/1/2013	12/1/2013	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	10/1/2014	11/1/2014	12/1/2014	Days	6 day/week
Project Component	**12/1/2012**	**12/9/2014**				**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	739	633
Utility Relocation	**12/1/2012**	**3/5/2013**				**X**	**X**	**X**	**X**																					94	81
Site and Road prep, Grading for access to East Palo	12/1/2012	12/15/2012				X																								14	12
Wood Pole Relocation, Demo, and Secondary Wire r	12/1/2012	12/13/2012				X																								12	10
Construction of Shoofly Towers (T1-4), new tower c	1/1/2013	3/5/2013					X	X	X																					63	54
Gas line work, Directional drilling	4/1/2013	4/29/2013								X																				28	24
export of material from gas line cut/fill	4/18/2013	4/26/2013								X																				8	7
demobilisation	4/27/2013	5/4/2013								X	X																			7	6
Phase 1	**1/1/2013**	**10/13/2013**					**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**														285	244
Site Prep	1/1/2013	2/12/2013					X	X																						42	36
Construction of New Left Bank Levee	4/1/2013	5/6/2013								X	X																			35	30
Removal of Old Left Bank Levee	6/1/2013	6/22/2013										X																		21	18
Removal of Old Right Bank Levee	6/1/2013	6/15/2013										X																		14	12
Haul Trips for Removal of Left and Right Banks	6/1/2013	8/10/2013										X	X	X																70	60
Construction of Right Bank Levee	7/1/2013	7/22/2013											X																	21	18
Construction of downstream access road on right an	8/1/2013	8/29/2013												X																28	24
Friendship Bridge	9/1/2013	10/13/2013													X	X														42	36
Channel Widening and Marshplain Terracing	6/1/2013	8/10/2013										X	X	X																70	60
Revegetation	9/1/2013	10/13/2013													X	X														42	36
Phase 2	**5/1/2014**	**12/9/2014**																				**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	223	191
Site Prep	5/1/2014	6/12/2014																				X	X							42	36
Installation of right and left bank floodwalls	6/1/2014	7/6/2014																					X	X						35	30
Construction of upstream access road on right and l	10/1/2014	11/21/2014																									X	X		52	44
Site Restoration	11/1/2014	12/9/2014																										X	X	39	33
Flat Bed Trailer Truck Trips for sheet pile delivery	6/1/2014	6/1/2014																					X							0	0

X denotes phase is active during this time period

Emission Summary

	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Project Component	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Utility Relocation	*9.3*	*116.4*	*101.3*	*2.5*	*3.1*	*3.8*	*6.9*	*0.8*	*3.8*	*4.5*	*0.1*	*1.4*	*1.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*89.5*	*90.2*
Site and Road prep, Grading for access to East Palo Alto side of creek	1.50	8.66	12.83	0.02	0.45	0.32	0.77	0.09	0.31	0.41	0.01	0.05	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.20	4.25
Wood Pole Relocation, Demo, and Secondary Wire removal	0.63	9.76	9.28	0.02	0.70	0.27	0.97	0.20	0.25	0.44	0.01	0.14	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	16.60	16.68
Construction of Shoofly Towers (T1-4), new tower construction and demolition of	3.33	26.82	18.29	0.05	0.67	0.75	1.42	0.15	0.74	0.89	0.09	0.72	0.49	0.00	0.02	0.02	0.04	0.00	0.02	0.02	57.08	57.58
Gas line work, Directional drilling	3.13	65.71	46.37	2.37	0.67	2.36	3.03	0.15	2.35	2.50	0.02	0.43	0.33	0.01	0.01	0.01	0.02	0.00	0.01	0.02	9.56	9.63
export of material from gas line cut/fill	0.31	2.45	6.85	0.01	0.26	0.05	0.31	0.08	0.05	0.13	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.16
demobilisation	0.35	2.99	7.66	0.01	0.31	0.07	0.39	0.09	0.07	0.16	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.94
Phase 1	*51.0*	*353.8*	*270.0*	*1.0*	*50.7*	*11.7*	*62.4*	*10.5*	*11.5*	*22.0*	*0.6*	*4.9*	*3.9*	*0.0*	*0.6*	*0.2*	*0.8*	*0.1*	*0.2*	*0.3*	*1042.3*	*1052.4*
Site Prep	3.01	15.10	19.60	0.03	0.62	0.86	1.48	0.14	0.86	0.99	0.05	0.27	0.35	0.00	0.01	0.02	0.03	0.00	0.02	0.02	32.71	33.09
Construction of New Left Bank Levee	9.84	110.45	53.02	0.38	21.25	2.66	23.91	4.57	2.56	7.13	0.15	1.66	0.82	0.01	0.30	0.04	0.33	0.06	0.04	0.10	467.98	472.34
Removal of Old Left Bank Levee	5.76	32.89	34.51	0.06	2.17	1.52	3.69	0.31	1.52	1.83	0.05	0.30	0.31	0.00	0.02	0.01	0.03	0.00	0.01	0.02	31.15	31.45
Removal of Old Right Bank Levee	5.76	32.89	34.51	0.06	2.17	1.52	3.69	0.31	1.52	1.83	0.03	0.20	0.21	0.00	0.01	0.01	0.02	0.00	0.01	0.01	20.76	20.97
Haul Trips for Removal of Left and Right Banks	0.32	5.97	1.46	0.03	1.62	0.08	1.69	0.36	0.07	0.43	0.01	0.18	0.04	0.00	0.04	0.00	0.05	0.01	0.00	0.01	69.02	69.68
Construction of Right Bank Levee	9.09	94.63	49.62	0.33	18.76	2.33	21.09	4.00	2.26	6.26	0.08	0.85	0.45	0.00	0.16	0.02	0.18	0.03	0.02	0.05	245.12	247.47
Construction of downstream access road on right and left banks	9.28	16.94	19.60	0.03	0.78	0.73	1.51	0.18	0.72	0.90	0.04	0.20	0.24	0.00	0.01	0.01	0.02	0.00	0.01	0.01	24.84	25.11
Friendship Bridge	1.79	9.23	14.94	0.02	0.62	0.49	1.10	0.14	0.48	0.62	0.03	0.17	0.27	0.00	0.01	0.01	0.02	0.00	0.01	0.01	22.87	23.15
Channel Widening and Marshplain Terracing	5.86	34.88	34.99	0.06	2.51	1.55	4.05	0.40	1.54	1.94	0.18	1.05	1.05	0.00	0.07	0.05	0.12	0.01	0.05	0.06	126.83	128.07
Revegetation	0.28	0.80	7.79	0.01	0.21	0.01	0.22	0.07	0.01	0.08	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
Phase 2	*14.7*	*87.3*	*82.1*	*0.1*	*4.4*	*3.7*	*8.1*	*1.0*	*3.6*	*4.6*	*0.4*	*3.6*	*2.2*	*0.0*	*0.1*	*0.1*	*0.3*	*0.0*	*0.1*	*0.2*	*397.5*	*400.1*
Site Prep	3.01	15.10	19.60	0.03	0.62	0.86	1.48	0.14	0.86	0.99	0.03	0.14	0.18	0.00	0.01	0.01	0.01	0.00	0.01	0.01	16.35	16.55
Installation of right and left bank floodwalls	5.22	29.78	30.62	0.05	1.53	1.39	2.91	0.26	1.38	1.64	0.30	1.75	1.48	0.00	0.08	0.08	0.16	0.01	0.08	0.09	186.06	187.98
Construction of upstream access road on right and left banks	5.22	16.94	19.60	0.03	0.78	0.73	1.51	0.18	0.72	0.90	0.04	0.20	0.24	0.00	0.01	0.01	0.02	0.00	0.01	0.01	24.84	25.11
Site Restoration	0.32	1.92	7.99	0.01	0.26	0.04	0.31	0.08	0.04	0.12	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.12
Flat Bed Trailer Truck Trips for sheet pile delivery	0.96	23.57	4.33	0.03	1.18	0.68	1.86	0.31	0.62	0.93	0.06	1.48	0.27	0.00	0.02	0.04	0.06	0.01	0.04	0.04	169.18	169.33
	9.18	68.45	54.55	0.11	3.33	2.92	6.25	0.71	2.86	3.57											1529.3	**1542.7** TOTAL
BAAQMD Thresholds	**54**	**54**				**82**			**54**													
	12.96	176.16	99.39	2.74	21.93	5.01	26.94	4.72	4.91	9.63												
QA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
sums match up?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

On-Site Equipment Emission

	Annual Emissions tons/year									
Project Element	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Utility Relocation										
Site and Road prep, Grading for access to East Palo Alto side of creek						0.002			0.002	
Wood Pole Relocation, Demo, and Secondary Wire removal						0.000			0.000	
Construction of Shoofly Towers (T1-4)						0.017			0.017	
Gas line work, Directional drilling						0.013			0.013	
export of material from gas line cut/fill						0.000			0.000	
demobilisation						0.000			0.000	
Phase 1										
Site Prep						0.015			0.015	
Construction of New Left Bank Levee						0.022			0.022	
Removal of Old Left Bank Levee						0.013			0.013	
Removal of Old Right Bank Levee						0.009			0.009	
Haul Trips for Removal of Left and Right Banks						0.000			0.000	
Construction of Right Bank Levee						0.013			0.013	
Construction of downstream access road on right and left banks						0.008			0.008	
Friendship Bridge						0.008			0.008	
Channel Widening and Marshplain Terracing						0.043			0.043	
Revegetation						0.000			0.000	
Phase 2										
Site Prep						0.007			0.007	
Installation of right and left bank floodwalls						0.078			0.078	
Construction of upstream access road on right and left banks						0.008			0.008	
Site Restoration						0.000			0.000	
Flat Bed Trailer Truck Trips for sheet pile delivery						0.000			0.000	

	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Project Component																												
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	3.33	3.33	3.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	3.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.35	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	3.01	3.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	9.84	9.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	5.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	5.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.32	0.32	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	9.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	9.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1.79	1.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	5.86	5.86	5.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.28	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.01	3.01	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.22	5.22	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.22	5.22	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32	0.32
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.96	-	-	-	-	-	-
	0.00	0.00	0.00	2.14	6.34	6.34	3.33	13.62	10.18	17.70	15.28	15.47	2.07	2.07	0.00	0.00	0.00	0.00	0.00	0.00	3.01	9.18	5.22	0.00	0.00	5.22	5.55	0.32
exceed threshold? 54	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component		9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces		-	-	-	8.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se		-	-	-	9.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)		-	-	-	-	26.82	26.82	26.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling		-	-	-	-	-	-	-	65.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi		-	-	-	-	-	-	-	2.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation		-	-	-	-	-	-	-	2.99	2.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep		-	-	-	-	15.10	15.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee		-	-	-	-	-	-	-	110.45	110.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee		-	-	-	-	-	-	-	-	-	32.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee		-	-	-	-	-	-	-	-	-	32.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig		-	-	-	-	-	-	-	-	-	5.97	5.97	5.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee		-	-	-	-	-	-	-	-	-	-	94.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro		-	-	-	-	-	-	-	-	-	-	-	16.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge		-	-	-	-	-	-	-	-	-	-	-	-	9.23	9.23	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te		-	-	-	-	-	-	-	-	-	34.88	34.88	34.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation		-	-	-	-	-	-	-	-	-	-	-	-	0.80	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.10	15.10	-	-	-	-	-
Installation of right and left bank floo		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29.78	29.78	-	-	-	-
Construction of upstream access road		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.94	16.94	-
Site Restoration		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.92	1.92
Flat Bed Trailer Truck Trips for sheet p		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.57	-	-	-	-	-
		0.00	0.00	0.00	18.42	41.92	41.92	26.82	181.59	113.43	106.63	135.48	57.79	10.03	10.03	0.00	0.00	0.00	0.00	0.00	0.00	15.10	68.45	29.78	0.00	0.00	16.94	18.86	1.92
exceed threshold?	54	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	12.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	9.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	18.29	18.29	18.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	46.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	6.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	7.66	7.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	19.60	19.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	53.02	53.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	34.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	34.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	1.46	1.46	1.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	49.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	19.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	14.94	14.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	34.99	34.99	34.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	7.79	7.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.60	19.60	-	-	-	-	-	-
Installation of right and left bank flood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.62	30.62	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.60	19.60	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.99	7.99
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.33	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	2.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	0.38	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.03	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	0.06	0.06	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.03	-	-	-	-	-	-
Installation of right and left bank flooc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.05	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.03	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	0.67	0.67	0.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	0.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.31	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.62	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	21.25	21.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	2.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	2.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	1.62	1.62	1.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	18.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	0.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.62	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	2.51	2.51	2.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.21	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.62	0.62	-	-	-	-	-	-
Installation of right and left bank flooc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.53	1.53	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	0.78	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	0.26
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.18	-	-	-	-	-	-

Project Component		9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces		-	-	-	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se		-	-	-	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)		-	-	-	-	0.75	0.75	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling		-	-	-	-	-	-	-	2.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi		-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation		-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep		-	-	-	-	0.86	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee		-	-	-	-	-	-	-	2.66	2.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee		-	-	-	-	-	-	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee		-	-	-	-	-	-	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig		-	-	-	-	-	-	-	-	-	0.08	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee		-	-	-	-	-	-	-	-	-	-	2.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro		-	-	-	-	-	-	-	-	-	-	-	0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge		-	-	-	-	-	-	-	-	-	-	-	-	0.49	0.49	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te		-	-	-	-	-	-	-	-	-	1.55	1.55	1.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation		-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.86	0.86	-	-	-	-	-
Installation of right and left bank floo		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.39	1.39	-	-	-	-
Construction of upstream access road		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.73	0.73
Site Restoration		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
Flat Bed Trailer Truck Trips for sheet p		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	-	-	-	-	-
		0.00	0.00	0.00	0.58	1.61	1.61	0.75	5.14	2.73	4.67	3.95	2.36	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.86	2.92	1.39	0.00	0.00	0.73	0.77
exceed threshold?	82	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	1.42	1.42	1.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	3.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.39	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	1.48	1.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	23.91	23.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	3.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	3.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	1.69	1.69	1.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	21.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	1.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	4.05	4.05	4.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.22	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.48	1.48	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.91	2.91	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.51	1.51	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.31
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.86	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	0.15	0.15	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.09	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.14	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	4.57	4.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.36	0.36	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	4.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	0.40	0.40	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.14	-	-	-	-	-	-
Installation of right and left bank flooc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	0.26	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18	0.18	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	0.08
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	0.74	0.74	0.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	2.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.86	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	2.56	2.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.07	0.07	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	2.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	0.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.48	0.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	1.54	1.54	1.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.86	0.86	-	-	-	-	-	-
Installation of right and left bank floo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.38	1.38	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.72	0.72	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.04
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.62	-	-	-	-	-	-
	0.00	0.00	0.00	0.56	1.60	1.60	0.74	5.02	2.63	4.64	3.87	2.33	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.86	2.86	1.38	0.00	0.00	0.72	0.76	0.04
exceed threshold? 54	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Project Component	9/1/2012	########	########	########	1/1/2013	2/1/2013	3/1/2013	4/1/2013	5/1/2013	6/1/2013	7/1/2013	8/1/2013	9/1/2013	########	########	########	1/1/2014	2/1/2014	3/1/2014	4/1/2014	5/1/2014	6/1/2014	7/1/2014	8/1/2014	9/1/2014	########	########	########
Utility Relocation																												
Site and Road prep, Grading for acces	-	-	-	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wood Pole Relocation, Demo, and Se	-	-	-	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Shoofly Towers (T1-4)	-	-	-	-	0.89	0.89	0.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas line work, Directional drilling	-	-	-	-	-	-	-	2.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
export of material from gas line cut/fi	-	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
demobilisation	-	-	-	-	-	-	-	0.16	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 1																												
Site Prep	-	-	-	-	0.99	0.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of New Left Bank Levee	-	-	-	-	-	-	-	7.13	7.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Left Bank Levee	-	-	-	-	-	-	-	-	-	1.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Removal of Old Right Bank Levee	-	-	-	-	-	-	-	-	-	1.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haul Trips for Removal of Left and Rig	-	-	-	-	-	-	-	-	-	0.43	0.43	0.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of Right Bank Levee	-	-	-	-	-	-	-	-	-	-	6.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction of downstream access ro	-	-	-	-	-	-	-	-	-	-	-	0.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Friendship Bridge	-	-	-	-	-	-	-	-	-	-	-	-	0.62	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel Widening and Marshplain Te	-	-	-	-	-	-	-	-	-	1.94	1.94	1.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revegetation	-	-	-	-	-	-	-	-	-	-	-	-	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase 2																												
Site Prep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.99	0.99	-	-	-	-	-	-
Installation of right and left bank flooc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.64	1.64	-	-	-	-	-
Construction of upstream access road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.90	0.90	-
Site Restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	0.12
Flat Bed Trailer Truck Trips for sheet p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.93	-	-	-	-	-	-

PG&E Electricity Transmission - Year 2012

		Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
		ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
	Project Element Total	9.3	116.4	101.3	2.5	3.1	3.8	6.9	0.8	3.8	4.5	0.1	1.4	1.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	89.5	90.2

Site and Road prep, Grading for access to East Palo Alto side of creek

Start date Dec-12
Duration in weeks 2
Total Acres Graded 0.92
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**1.24**	**7.63**	**5.88**	**0.01**	**0.00**	**0.30**	**0.30**	**0.00**	**0.30**	**0.30**	**0.01**	**0.05**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**3.09**	**3.12**
grader	Grader	1				0.5		1.24	7.63	5.88	0.01		0.30	0.30		0.30	0.30	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	3.09	3.12
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.03**	**0.37**	**0.46**	**0.00**	**0.01**	**0.00**	**0.02**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.95**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	1	1	40	40	0.5		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.18
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	1	1	40	40	0.5		0.02	0.33	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	**0.00**	**0.34**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	0.5						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					80	0.5						0.10		0.10	0.02		0.02					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	0.5		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.18**
Total Emissions								**1.50**	**8.66**	**12.83**	**0.02**	**0.45**	**0.32**	**0.77**	**0.09**	**0.31**	**0.41**	**0.01**	**0.05**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.20**	**4.25**

Wood Pole Relocation, Demo, and Secondary Wire removal

Start date Dec-12
Duration in weeks 5
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.41**	**9.10**	**2.79**	**0.01**	**0.08**	**0.26**	**0.34**	**0.03**	**0.24**	**0.27**	**0.01**	**0.14**	**0.04**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**16.60**	**16.68**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	3	1	40	120	1.25		0.04	0.12	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	1.32
flat bed trailer truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.92
bucket truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.76
line truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.76
rope truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.92
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.53**	**0.00**	**0.53**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	1.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	1.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					440	1.25						0.53		0.53	0.13		0.13					0.01		0.01	0.00		0.00		
Worker Commute		24	1	40	960	0.5		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.63**	**9.76**	**9.28**	**0.02**	**0.70**	**0.27**	**0.97**	**0.20**	**0.25**	**0.44**	**0.01**	**0.14**	**0.08**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**	**16.60**	**16.68**

Construction of Shoofly Towers (T1-4), new tower construction and demolition of shoo-fly

Start date Jan-13
Duration in weeks 9
Total Acres Graded 0.92
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.92**	**22.38**	**10.34**	**0.03**	**0.00**	**0.64**	**0.64**	**0.00**	**0.64**	**0.64**	**0.08**	**0.60**	**0.28**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**41.76**	**42.14**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				2.25		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.02	0.08	0.08	0.00		0.01	0.01		0.01	0.01	13.92	14.05
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	1				2.25		1.02	7.90	2.86	0.01		0.20	0.20		0.20	0.20	0.03	0.21	0.08	0.00		0.01	0.01		0.01	0.01	13.92	14.05
caterpillar (pile driver)	Other Con	1				2.25		1.30	11.34	4.64	0.02		0.25	0.25		0.25	0.25	0.04	0.31	0.13	0.00		0.01	0.01		0.01	0.01	13.92	14.05
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.18**	**3.78**	**1.46**	**0.01**	**0.04**	**0.10**	**0.14**	**0.02**	**0.09**	**0.11**	**0.00**	**0.10**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**15.32**	**15.44**
2 door pickup	LDT1	1	1	40	40	2.25		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.79
4 door pickup	LDT1	1	1	40	40	2.25		0.01	0.04	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.79
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.46
concrete truck	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.46
pump truck	T7 SC	1	1	40	40	2.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.46
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	1	1	40	40	2.25		0.02	0.33	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.48
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.54**	**0.00**	**0.54**	**0.10**	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	2.25						0.25		0.25	0.03		0.03					0.01		0.01	0.00		0.00		
truck loading					0	2.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	2.25						0.29		0.29	0.07		0.07					0.01		0.01	0.00		0.00		
Worker Commute		24	1	40	960	2.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.01**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**3.33**	**26.82**	**18.29**	**0.05**	**0.67**	**0.75**	**1.42**	**0.15**	**0.74**	**0.89**	**0.09**	**0.72**	**0.49**	**0.00**	**0.02**	**0.02**	**0.04**	**0.00**	**0.02**	**0.02**	**57.08**	**57.58**

PG&E Gas Transmission - Year 2013

		Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
		ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
	Project Element Total	3.8	71.1	60.9	2.4	1.2	2.5	3.7	0.3	2.5	2.8	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.7

Gas line work, Directional drilling

Start date Apr-13
Duration in weeks 4
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.69**	**60.48**	**38.30**	**2.35**	**0.00**	**2.22**	**2.22**	**0.00**	**2.22**	**2.22**	**0.02**	**0.36**	**0.23**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**2.75**	**2.78**
DIRECTIONAL DRILL RIG	DIRECTIOI	1				0.5		2.69	60.48	38.30	2.35		2.22	2.22		2.22	2.22	0.02	0.36	0.23	0.01		0.01	0.01		0.01	0.01	2.75	2.78
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.21**	**4.57**	**1.59**	**0.01**	**0.04**	**0.13**	**0.17**	**0.02**	**0.12**	**0.14**	**0.00**	**0.05**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.81**	**6.85**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	1		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.70
flat bed trailer truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.07
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	1	2	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.07

pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.54**	**0.00**	**0.54**	**0.10**	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	1						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	1		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**3.13**	**65.71**	**46.37**	**2.37**	**0.67**	**2.36**	**3.03**	**0.15**	**2.35**	**2.50**	**0.02**	**0.43**	**0.33**	**0.01**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.02**	**9.56**	**9.63**

export of material from gas line cut/fill

Start date **Apr-13**
Duration in weeks 1
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.08**	**1.79**	**0.37**	**0.00**	**0.03**	**0.04**	**0.07**	**0.01**	**0.04**	**0.05**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.15**	**1.16**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	2	1	40	80	0.25		0.04	0.66	0.16	0.00	0.02	0.01	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					120	0.25						0.14		0.14	0.04		0.04					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	0.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.31**	**2.45**	**6.85**	**0.01**	**0.26**	**0.05**	**0.31**	**0.08**	**0.05**	**0.13**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.15**	**1.16**

demobilisation

Start date **Apr-13**
Duration in weeks 1
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.12**	**2.32**	**1.17**	**0.00**	**0.03**	**0.07**	**0.09**	**0.01**	**0.06**	**0.07**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.94**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	0.25		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.18
flat bed trailer truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	1	1	40	40	0.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.25						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					160	0.25						0.19		0.19	0.05		0.05					0.00		0.00	0.00		0.00		
Worker Commute		24	1	40	960	0.25		**0.23**	**0.66**	**6.48**	**0.01**	**0.09**	**0.01**	**0.10**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.35**	**2.99**	**7.66**	**0.01**	**0.31**	**0.07**	**0.39**	**0.09**	**0.07**	**0.16**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.93**	**0.94**

Phase 1

	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Project Element Total	**51.0**	**353.8**	**270.0**	**1.0**	**50.7**	**11.7**	**62.4**	**10.5**	**11.5**	**22.0**	**0.6**	**4.9**	**3.9**	**0.0**	**0.6**	**0.2**	**0.8**	**0.1**	**0.2**	**0.3**	**1042.3**	**1052.4**

Site Prep

Start date Jan-13
Duration in weeks 6
Total Acres Graded 0.00
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.66**	**13.10**	**10.85**	**0.02**	**0.00**	**0.82**	**0.82**	**0.00**	**0.82**	**0.82**	**0.05**	**0.24**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**27.84**	**28.09**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				1.5		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	9.28	9.36
loader	RT Loader	1				1.5		0.83	4.09	3.35	0.00		0.25	0.25		0.25	0.25	0.02	0.07	0.06	0.00		0.00	0.00		0.00	0.00	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	1				1.5		1.22	5.86	4.66	0.01		0.37	0.37		0.37	0.37	0.02	0.11	0.08	0.00		0.01	0.01		0.01	0.01	9.28	9.36
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.10**	**1.28**	**1.73**	**0.00**	**0.02**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**4.42**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.11
flat bed trailer truck	T7 SC	1	1	40	40	1.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.30
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.49**	**0.00**	**0.49**	**0.09**	**0.00**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1.5						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	1.5						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.55**	**0.58**
Total Emissions								**3.01**	**15.10**	**19.60**	**0.03**	**0.62**	**0.86**	**1.48**	**0.14**	**0.86**	**0.99**	**0.05**	**0.27**	**0.35**	**0.00**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**32.71**	**33.09**

Construction of New Left Bank Levee

Start date Apr-13
Duration in weeks 5
Total Acres Graded 7.40
Total Fill/Export (yd3) 124300

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**29.77**	**25.55**	**0.04**	**0.00**	**1.45**	**1.45**	**0.00**	**1.45**	**1.45**	**0.08**	**0.45**	**0.38**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**46.40**	**46.82**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				1.25		3.09	18.44	16.01	0.03		0.75	0.75		0.75	0.75	0.05	0.28	0.24	0.00		0.01	0.01		0.01	0.01	23.20	23.41
back hoe	Tractor/Lc	1				1.25		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	7.73	7.80
loader	RT Loader	2				1.25		1.67	8.19	6.69	0.01		0.51	0.51		0.51	0.51	0.03	0.12	0.10	0.00		0.01	0.01		0.01	0.01	15.47	15.61
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**4.23**	**79.96**	**20.45**	**0.32**	**1.90**	**1.20**	**3.10**	**0.69**	**1.11**	**1.80**	**0.06**	**1.20**	**0.31**	**0.00**	**0.03**	**0.02**	**0.05**	**0.01**	**0.02**	**0.03**	**421.58**	**425.52**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.25		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.76
line truck	T7 SC	3	1	40	120	1.25		0.14	3.37	0.62	0.00	0.03	0.10	0.12	0.01	0.09	0.10	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	5.76
rope truck	T7 SC	1	1	40	40	1.25		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.92
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	1.25		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.84	3.84
dump truck (20 yd3)	T7 SC miti	6	35	40	8400	1.25		3.76	69.70	17.07	0.31	1.81	0.91	2.72	0.66	0.84	1.49	0.06	1.05	0.26	0.00	0.03	0.01	0.04	0.01	0.01	0.02	402.65	406.48
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**19.25**	**0.00**	**19.25**	**3.84**	**0.00**	**3.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.26**	**0.00**	**0.26**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**
grading					3.5	1.25						1.74		1.74	0.19		0.19					0.02		0.02	0.00		0.00		
truck loading					314	1.25						6.85		6.85	1.04		1.04					0.09		0.09	0.01		0.01		
road/offroad dust					8920	1.25						10.66		10.66	2.62		2.62					0.15		0.15	0.04		0.04		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**9.84**	**110.45**	**53.02**	**0.38**	**21.25**	**2.66**	**23.91**	**4.57**	**2.56**	**7.13**	**0.15**	**1.66**	**0.82**	**0.01**	**0.30**	**0.04**	**0.33**	**0.06**	**0.04**	**0.10**	**467.98**	**472.34**

Removal of Old Left Bank Levee

Start date Jun-13
Duration in weeks 3
Total Acres Graded 7.40
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**29.77**	**25.55**	**0.04**	**0.00**	**1.45**	**1.45**	**0.00**	**1.45**	**1.45**	**0.05**	**0.27**	**0.23**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**27.84**	**28.09**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.75		3.09	18.44	16.01	0.03		0.75	0.75		0.75	0.75	0.03	0.17	0.14	0.00		0.01	0.01		0.01	0.01	13.92	14.05
back hoe	Tractor/Lc	1				0.75		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.03	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	2				0.75		1.67	8.19	6.69	0.01		0.51	0.51		0.51	0.51	0.02	0.07	0.06	0.00		0.00	0.00		0.00	0.00	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.15**	**2.40**	**1.94**	**0.00**	**0.03**	**0.07**	**0.10**	**0.01**	**0.06**	**0.07**	**0.00**	**0.02**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.31**	**3.36**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.75		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.30
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**0.00**	**2.03**	**0.26**	**0.00**	**0.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					3.5	0.75						1.74		1.74	0.19		0.19					0.01		0.01	0.00		0.00		
truck loading					0	0.75						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	0.75						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.76**	**32.89**	**34.51**	**0.06**	**2.17**	**1.52**	**3.69**	**0.31**	**1.52**	**1.83**	**0.05**	**0.30**	**0.31**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.02**	**31.15**	**31.45**

Removal of Old Right Bank Levee

Start date Jun-13
Duration in weeks 2
Total Acres Graded 5.50
Total Fill/Export (yd3) 0

								Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**29.77**	**25.55**	**0.04**	**0.00**	**1.45**	**1.45**	**0.00**	**1.45**	**1.45**	**0.03**	**0.18**	**0.15**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**18.56**	**18.73**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.5		3.09	18.44	16.01	0.03		0.75	0.75		0.75	0.75	0.02	0.11	0.10	0.00		0.00	0.00		0.00	0.00	9.28	9.36
back hoe	Tractor/Lc	1				0.5		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	3.09	3.12
loader	RT Loader	2				0.5		1.67	8.19	6.69	0.01		0.51	0.51		0.51	0.51	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	6.19	6.24
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.15**	**2.40**	**1.94**	**0.00**	**0.03**	**0.07**	**0.10**	**0.01**	**0.06**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.20**	**2.24**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.70
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.54
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**0.00**	**2.03**	**0.26**	**0.00**	**0.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					3.5	0.5						1.74		1.74	0.19		0.19					0.01		0.01	0.00		0.00		
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					240	0.5						0.29		0.29	0.07		0.07					0.00		0.00	0.00		0.00		

Worker Commute		26	1	40	1040	0.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.76**	**32.89**	**34.51**	**0.06**	**2.17**	**1.52**	**3.69**	**0.31**	**1.52**	**1.83**	**0.03**	**0.20**	**0.21**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**20.76**	**20.97**

Haul Trips for Removal of Left and Right Banks

Start date	Jun-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Duration in weeks	10																												
Total Acres Graded	0.00																												
Total Fill/Export (yd3)	21800																												
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.32**	**5.97**	**1.46**	**0.03**	**0.16**	**0.08**	**0.23**	**0.06**	**0.07**	**0.13**	**0.01**	**0.18**	**0.04**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**69.02**	**69.68**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	6	3	40	720	2.5		0.32	5.97	1.46	0.03	0.16	0.08	0.23	0.06	0.07	0.13	0.01	0.18	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.02	69.68
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**1.46**	**0.00**	**1.46**	**0.30**	**0.00**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.00**	**0.04**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**
grading					0	2.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					28	2.5						0.60		0.60	0.09		0.09					0.02		0.02	0.00		0.00		
road/offroad dust					720	2.5						0.86		0.86	0.21		0.21					0.02		0.02	0.01		0.01		
Worker Commute		0	0	0	0	2.5		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.32**	**5.97**	**1.46**	**0.03**	**1.62**	**0.08**	**1.69**	**0.36**	**0.07**	**0.43**	**0.01**	**0.18**	**0.04**	**0.00**	**0.04**	**0.00**	**0.05**	**0.01**	**0.00**	**0.01**	**69.02**	**69.68**

Construction of Right Bank Levee

Start date	Jul-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Duration in weeks	3																												
Total Acres Graded	6.50																												
Total Fill/Export (yd3)	66500																												
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								**5.36**	**29.77**	**25.55**	**0.04**	**0.00**	**1.45**	**1.45**	**0.00**	**1.45**	**1.45**	**0.05**	**0.27**	**0.23**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**27.84**	**28.09**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				0.75		3.09	18.44	16.01	0.03		0.75	0.75		0.75	0.75	0.03	0.17	0.14	0.00		0.01	0.01		0.01	0.01	13.92	14.05
back hoe	Tractor/Lc	1				0.75		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.03	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	2				0.75		1.67	8.19	6.69	0.01		0.51	0.51		0.51	0.51	0.02	0.07	0.06	0.00		0.00	0.00		0.00	0.00	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**3.48**	**64.14**	**17.06**	**0.28**	**1.63**	**0.87**	**2.51**	**0.59**	**0.80**	**1.40**	**0.03**	**0.58**	**0.15**	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	**0.01**	**0.01**	**217.28**	**219.38**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	0.75		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.30
dump truck (20 yd3)	T7 SC miti	6	31	40	7440	0.75		3.33	61.74	15.12	0.27	1.60	0.81	2.41	0.58	0.74	1.32	0.03	0.56	0.14	0.00	0.01	0.01	0.02	0.01	0.01	0.01	213.98	216.02
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**17.03**	**0.00**	**17.03**	**3.36**	**0.00**	**3.36**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**
grading					3.5	0.75						1.74		1.74	0.19		0.19					0.01		0.01	0.00		0.00		
truck loading					280	0.75						6.11		6.11	0.92		0.92					0.05		0.05	0.01		0.01		
road/offroad dust					7680	0.75						9.17		9.17	2.25		2.25					0.08		0.08	0.02		0.02		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**9.09**	**94.63**	**49.62**	**0.33**	**18.76**	**2.33**	**21.09**	**4.00**	**2.26**	**6.26**	**0.08**	**0.85**	**0.45**	**0.00**	**0.16**	**0.02**	**0.18**	**0.03**	**0.02**	**0.05**	**245.12**	**247.47**

Construction of downstream access road on right and left banks

Start date	Aug-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Duration in weeks	4																												
Total Acres Graded	0.00																												
Total Fill/Export (yd3)	0																												
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								**2.45**	**13.45**	**10.18**	**0.02**	**0.00**	**0.65**	**0.65**	**0.00**	**0.65**	**0.65**	**0.03**	**0.16**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**18.56**	**18.73**
grader	Grader	1				1		1.24	7.63	5.88	0.01		0.30	0.30		0.30	0.30	0.01	0.09	0.07	0.00		0.00	0.00		0.00	0.00	6.19	6.24
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	1				1		1.17	5.62	4.08	0.01		0.34	0.34		0.34	0.34	0.01	0.07	0.05	0.00		0.00	0.00		0.00	0.00	6.19	6.24
compactor	Plate Com	1				1		0.04	0.20	0.21	0.00		0.01	0.01		0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	6.19	6.24
On-Road Vehicle Emissions		0				0		**0.18**	**2.77**	**2.40**	**0.01**	**0.05**	**0.07**	**0.12**	**0.02**	**0.07**	**0.08**	**0.00**	**0.03**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.28**	**6.38**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	1		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.07
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	1	1	40	40	1		0.02	0.33	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.55
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.63**	**0.00**	**0.63**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	1						0.38		0.38	0.09		0.09					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Paving					2			**6.40**										**0.00**											
Total Emissions								**9.28**	**16.94**	**19.60**	**0.03**	**0.78**	**0.73**	**1.51**	**0.18**	**0.72**	**0.90**	**0.04**	**0.20**	**0.24**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**24.84**	**25.11**

Friendship Bridge

Start date	Sep-13							Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
Duration in weeks	6																												
Total Acres Graded	0.00																												
Total Fill/Export (yd3)	0																												
Equipment		**No. of Pieces**	**Average Vehicle Trips/day**	**Roundtrip Miles**	**Disturbed Area (acre/day), Material (tons/day), VMT/day**	**Duration (months/year)**	**Duration (year)**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10 Dust**	**PM10 Exhaust**	**PM10**	**PM2.5 Dust (TW&BW)**	**PM2.5 Exhaust**	**PM2.5**	**CO2 (MT)**	**Total GHGs (MT CO2e)**
On-Site Equipment Emissions								**1.44**	**7.23**	**6.19**	**0.01**	**0.00**	**0.44**	**0.44**	**0.00**	**0.44**	**0.44**	**0.03**	**0.13**	**0.11**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**18.56**	**18.73**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	1				1.5		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	9.28	9.36
loader	RT Loader	1				1.5		0.83	4.09	3.35	0.00		0.25	0.25		0.25	0.25	0.02	0.07	0.06	0.00		0.00	0.00		0.00	0.00	9.28	9.36
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		**0.10**	**1.28**	**1.73**	**0.00**	**0.02**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**4.42**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	1.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	2.11
flat bed trailer truck	T7 SC	1	1	40	40	1.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.30
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC miti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.49**	**0.00**	**0.49**	**0.09**	**0.00**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1.5						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	1.5						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Total Emissions																														
								1.79	9.23	14.94	0.02	0.62	0.49	1.10	0.14	0.48	0.62	0.03	0.17	0.27	0.00	0.01	0.01	0.02	0.00	0.01	0.01	22.87	23.15

Channel Widening and Marshplain Terracing

Start date	Jun-13
Duration in weeks	10
Total Acres Graded	26.30
Total Fill/Export (yd3)	0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
								ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**5.36**	**29.77**	**25.55**	**0.04**	**0.00**	**1.45**	**1.45**	**0.00**	**1.45**	**1.45**	**0.16**	**0.89**	**0.77**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**92.80**	**93.65**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	3				2.5		3.09	18.44	16.01	0.03		0.75	0.75		0.75	0.75	0.09	0.55	0.48	0.00		0.02	0.02		0.02	0.02	46.40	46.82
back hoe	Tractor/Lc	1				2.5		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.02	0.09	0.09	0.00		0.01	0.01		0.01	0.01	15.47	15.61
loader	RT Loader	2				2.5		1.67	8.19	6.69	0.01		0.51	0.51		0.51	0.51	0.05	0.25	0.20	0.00		0.02	0.02		0.02	0.02	30.93	31.22
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pille driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		**0.25**	**4.39**	**2.43**	**0.01**	**0.08**	**0.09**	**0.18**	**0.03**	**0.09**	**0.12**	**0.01**	**0.13**	**0.07**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**34.03**	**34.43**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	2.5		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	3.52
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	2	1	40	80	2.5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.67	7.68
dump truck (20 yd3)	T7 SC mi ti	6	1	40	240	2.5		0.11	1.99	0.49	0.01	0.05	0.03	0.08	0.02	0.02	0.04	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01	23.23
haul truck	T7 SC mi ti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**2.32**	**0.00**	**2.32**	**0.33**	**0.00**	**0.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.06**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**
grading					3.5	2.5						1.74		1.74	0.19		0.19					0.05		0.05	0.01		0.01		
truck loading					0	2.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					480	2.5						0.57		0.57	0.14		0.14					0.02		0.02	0.00		0.00		
Worker Commute		26	1	40	1040	2.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.01**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.86**	**34.88**	**34.99**	**0.06**	**2.51**	**1.55**	**4.05**	**0.40**	**1.54**	**1.94**	**0.18**	**1.05**	**1.05**	**0.00**	**0.07**	**0.05**	**0.12**	**0.01**	**0.05**	**0.06**	**126.83**	**128.07**

Revegetation

Start date	Sep-13
Duration in weeks	6
Total Acres Graded	0.00
Total Fill/Export (yd3)	0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
								ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lc	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pille driver)	Other Con	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/I	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Com	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions						0		**0.03**	**0.08**	**0.76**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.01**	**1.06**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	2	1	40	80	1.5		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mi ti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC mi ti	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.00**	**0.10**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	1.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					80	1.5						0.10		0.10	0.02		0.02					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1.5		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.28**	**0.80**	**7.79**	**0.01**	**0.21**	**0.01**	**0.22**	**0.07**	**0.01**	**0.08**	**0.00**	**0.01**	**0.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.01**	**1.06**

Phase 2

	Maximum Daily Emissions in lbs/day										Annual Emissions in tons, except GHGs in metric tons CO2e											
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
Project Element Total	14.7	87.3	82.1	0.1	4.4	3.7	8.1	1.0	3.6	4.6	0.4	3.6	2.2	0.0	0.1	0.1	0.3	0.0	0.1	0.2	397.5	400.1

Site Prep

Start date: May-14
Duration in weeks: 3
Total Acres Graded: 0.00
Total Fill/Export (yd3): 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.66**	**13.10**	**10.85**	**0.02**	**0.00**	**0.82**	**0.82**	**0.00**	**0.82**	**0.82**	**0.02**	**0.12**	**0.10**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**13.92**	**14.05**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	1				0.75		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.01	0.03	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
loader	RT Loader	1				0.75		0.83	4.09	3.35	0.00		0.25	0.25		0.25	0.25	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	4.64	4.68
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/P	1				0.75		1.22	5.86	4.66	0.01		0.37	0.37		0.37	0.37	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	4.64	4.68
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.10**	**1.28**	**1.73**	**0.00**	**0.02**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.16**	**2.21**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	4	1	40	160	0.75		0.05	0.16	1.53	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.06
flat bed trailer truck	T7 SC	1	1	40	40	0.75		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.15
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.49**	**0.00**	**0.49**	**0.09**	**0.00**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	0.75						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	0.75						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					200	0.75						0.24		0.24	0.06		0.06					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.28**	**0.29**
Total Emissions								**3.01**	**15.10**	**19.60**	**0.03**	**0.62**	**0.86**	**1.48**	**0.14**	**0.86**	**0.99**	**0.03**	**0.14**	**0.18**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**16.35**	**16.55**

Installation of right and left bank floodwalls

Start date: Jun-14
Duration in weeks: 20
Total Acres Graded: 0.00
Total Fill/Export (yd3): 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**4.79**	**26.29**	**21.19**	**0.03**	**0.00**	**1.31**	**1.31**	**0.00**	**1.31**	**1.31**	**0.29**	**1.58**	**1.27**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**154.67**	**156.08**
grader	Grader	1				5		1.24	7.63	5.88	0.01		0.30	0.30		0.30	0.30	0.07	0.46	0.35	0.00		0.02	0.02		0.02	0.02	30.93	31.22
excavator	Excavator	1				5		1.03	6.15	5.34	0.01		0.25	0.25		0.25	0.25	0.06	0.37	0.32	0.00		0.02	0.02		0.02	0.02	30.93	31.22
back hoe	Tractor/Lo	1				5		0.61	3.14	2.84	0.00		0.19	0.19		0.19	0.19	0.04	0.19	0.17	0.00		0.01	0.01		0.01	0.01	30.93	31.22
trencher	Trencher	1				5		1.08	5.28	3.78	0.01		0.31	0.31		0.31	0.31	0.06	0.32	0.23	0.00		0.02	0.02		0.02	0.02	30.93	31.22
loader	RT Loader	1				5		0.83	4.09	3.35	0.00		0.25	0.25		0.25	0.25	0.05	0.25	0.20	0.00		0.02	0.02		0.02	0.02	30.93	31.22
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/P	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.18**	**2.77**	**2.40**	**0.01**	**0.05**	**0.07**	**0.12**	**0.02**	**0.07**	**0.08**	**0.01**	**0.17**	**0.14**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**31.39**	**31.90**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	5		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.38	8.80
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	5		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.01	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.34	15.36
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mitig	1	1	40	40	5		0.02	0.33	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.67	7.74
haul truck	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**1.38**	**0.00**	**1.38**	**0.20**	**0.00**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**	**0.08**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**
grading					2	5						1.00		1.00	0.11		0.11					0.05		0.05	0.01		0.01		
truck loading					0	5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	5						0.38		0.38	0.09		0.09					0.02		0.02	0.01		0.01		
Worker Commute		26	1	40	1040	0.75		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**5.22**	**29.78**	**30.62**	**0.05**	**1.53**	**1.39**	**2.91**	**0.26**	**1.38**	**1.64**	**0.30**	**1.75**	**1.48**	**0.00**	**0.08**	**0.08**	**0.16**	**0.01**	**0.08**	**0.09**	**186.06**	**187.98**

Construction of upstream access road on right and left banks

Start date: Oct-14
Duration in weeks: 4
Total Acres Graded: 0.00
Total Fill/Export (yd3): 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**2.45**	**13.45**	**10.18**	**0.02**	**0.00**	**0.65**	**0.65**	**0.00**	**0.65**	**0.65**	**0.03**	**0.16**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**18.56**	**18.73**
grader	Grader	1				1		1.24	7.63	5.88	0.01		0.30	0.30		0.30	0.30	0.01	0.09	0.07	0.00		0.00	0.00		0.00	0.00	6.19	6.24
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/P	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	1				1		1.17	5.62	4.08	0.01		0.34	0.34		0.34	0.34	0.01	0.07	0.05	0.00		0.00	0.00		0.00	0.00	6.19	6.24
compactor	Plate Comp	1				1		0.04	0.20	0.21	0.00		0.01	0.01		0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	6.19	6.24
On-Road Vehicle Emissions		0				0		**0.18**	**2.77**	**2.40**	**0.01**	**0.05**	**0.07**	**0.12**	**0.02**	**0.07**	**0.08**	**0.00**	**0.03**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.28**	**6.38**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	5	1	40	200	1		0.07	0.20	1.91	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.76
flat bed trailer truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	2	1	40	80	1		0.09	2.24	0.41	0.00	0.02	0.06	0.08	0.01	0.06	0.07	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	3.07
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mitig	1	1	40	40	1		0.02	0.33	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.55
haul truck	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.63**	**0.00**	**0.63**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0.5	1						0.25		0.25	0.03		0.03					0.00		0.00	0.00		0.00		
truck loading					0	1						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					320	1						0.38		0.38	0.09		0.09					0.00		0.00	0.00		0.00		
Worker Commute		26	1	40	1040	1		**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Paving					1			**2.35**										**0.00**											
Total Emissions								**5.22**	**16.94**	**19.60**	**0.03**	**0.78**	**0.73**	**1.51**	**0.18**	**0.72**	**0.90**	**0.04**	**0.20**	**0.24**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**24.84**	**25.11**

Site Restoration

Start date: Nov-14
Duration in weeks: 2
Total Acres Graded: 0.00
Total Fill/Export (yd3): 0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	Annual Emissions in tons, except GHGs in metric tons CO2e: ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/P	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.07**	**1.20**	**0.97**	**0.00**	**0.02**	**0.03**	**0.05**	**0.01**	**0.03**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.12**
2 door pickup	LDT1	2	1	40	80	0.5		0.03	0.08	0.76	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.35
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	1	1	40	40	0.5		0.05	1.12	0.21	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tool truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	1	40	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC mitig	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.14**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		

truck loading				0	0.5				0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust				120	0.5				0.14		0.14	0.04		0.04					0.00		0.00	0.00		0.00		
Worker Commute	26	1	40	1040	0.5	**0.25**	**0.72**	**7.02**	**0.01**	**0.10**	**0.01**	**0.11**	**0.04**	**0.01**	**0.05**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions						**0.32**	**1.92**	**7.99**	**0.01**	**0.26**	**0.04**	**0.31**	**0.08**	**0.04**	**0.12**	**0.00**	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.12**

Flat Bed Trailer Truck Trips for sheet pile delivery

Start date	**Jun-14**
Duration in weeks	21
Total Acres Graded	0.00
Total Fill/Export (yd3)	0

Equipment		No. of Pieces	Average Vehicle Trips/day	Roundtrip Miles	Disturbed Area (acre/day), Material (tons/day), VMT/day	Duration (months/year)	Duration (year)	Daily Emissions in lbs/day									Annual Emissions in tons, except GHGs in metric tons CO2e										
								ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2 (MT)	Total GHGs (MT CO2e)
On-Site Equipment Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**
grader	Grader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
excavator	Excavator	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
back hoe	Tractor/Lo	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
loader	RT Loader	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
70 ton crane	Crane	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
caterpillar (pile driver)	Other Cons	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
jack hammer/concrete pu	Crushing/F	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
asphalth paver	Paver	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
compactor	Plate Comp	0				0		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00
On-Road Vehicle Emissions		0				0		**0.96**	**23.57**	**4.33**	**0.03**	**0.18**	**0.68**	**0.86**	**0.07**	**0.62**	**0.69**	**0.06**	**1.48**	**0.27**	**0.00**	**0.01**	**0.04**	**0.05**	**0.00**	**0.04**	**0.04**	**169.18**	**169.33**
2 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 door pickup	LDT1	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
flat bed trailer truck	T7 SC	21	1	40	840	5.25		0.96	23.57	4.33	0.03	0.18	0.68	0.86	0.07	0.62	0.69	0.06	1.48	0.27	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.18	169.33
bucket truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
line truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
rope truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ton tood truck w compre	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
concrete truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pump truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
water truck	T7 SC	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
dump truck (20 yd3)	T7 SC mi\$	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
haul truck	T7 SC mi\$	0	0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dust Emissions								**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**0.00**	**1.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
grading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
truck loading					0	0.5						0.00		0.00	0.00		0.00					0.00		0.00	0.00		0.00		
road/offroad dust					840	0.5						1.00		1.00	0.25		0.25					0.01		0.01	0.00		0.00		
Worker Commute		0	0	0	0	0.5		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions								**0.96**	**23.57**	**4.33**	**0.03**	**1.18**	**0.68**	**1.86**	**0.31**	**0.62**	**0.93**	**0.06**	**1.48**	**0.27**	**0.00**	**0.02**	**0.04**	**0.06**	**0.01**	**0.04**	**0.04**	**169.18**	**169.33**

Emission Rates

On-Site Equipment - CALEEMOD

Equipment Name	Horse-power	Load Factor	Grams per hp-hour per equipment											
			ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
Crane	240	0.43	0.558	4.342	1.572	0.006		0.108	0.108		0.108	0.108	568.299	573.494
Excavator	157	0.57	0.652	3.894	3.381	0.006		0.158	0.158		0.158	0.158	568.299	573.494
Other Construction Equipment	350	0.62	0.339	2.963	1.212	0.005		0.067	0.067		0.067	0.067	568.299	573.494
RT Loader	87	0.54	1.007	4.942	4.039	0.006		0.305	0.305		0.305	0.305	568.299	573.494
Grader	162	0.61	0.712	4.377	3.376	0.006		0.173	0.173		0.173	0.173	568.299	573.494
Tractor/Loader/Backhoe	75	0.55	0.835	4.315	3.908	0.006		0.261	0.261		0.261	0.261	568.300	573.495
Plate Compactor	8	0.43	0.661	3.314	3.469	0.008		0.091	0.091		0.091	0.091	568.300	573.495
Crushing/Proc. Equipment	85	0.78	1.042	5.015	3.984	0.006		0.320	0.320		0.320	0.320	568.299	573.494
Paver	89	0.62	1.205	5.774	4.194	0.006		0.350	0.350		0.350	0.350	568.299	573.494
Trencher	69	0.75	1.185	5.785	4.143	0.006		0.341	0.341		0.341	0.341	568.299	573.494
DIRECTIONAL DRILL RIG	2000	0.42	0.181	4.082	2.585	0.159		0.150	0.150		0.150	0.150	505.755	510.379
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

On-Road Vehicles and Trucks (Santa Clara & San Mateo Counties, weighted average - EMFAC2011

Vehicle Type	Pounds per vehicle mile												
	ROG	NOx	CO	SO2	PM10 Dust (TW&BW)	PM10 Exhaust	PM10	PM2.5 Dust (TW&BW)	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)	
LDA	1.36E-04	3.92E-04	3.97E-03	7.34E-06	9.86E-05	5.96E-06	1.05E-04	3.91E-05	5.40E-06	4.45E-05	0.73	0.77	
LDT1	3.41E-04	9.88E-04	9.53E-03	8.54E-06	9.86E-05	1.26E-05	1.11E-04	3.91E-05	1.14E-05	5.05E-05	0.84	0.88	
T7 SC	1.14E-03	2.81E-02	5.15E-03	3.67E-05	2.15E-04	8.05E-04	1.02E-03	7.81E-05	7.41E-04	8.19E-04	3.84	3.85	
T7 SC mitigated	0.00045	0.0083	0.00203	3.68E-05	0.0002153	1.08E-04	3.24E-04	7.81E-05	9.98E-05	1.78E-04	3.8428	3.88	mitigated
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

On-Site Dust Emissions - Caleemod

Type of Activity	Unit												
		ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2	Total GHGs (CO2e)
Site Grading w mitigation	lb/VMT					0.725			0.078				
Site Grading w/o mitigation						1.543			0.167				
export/fill	lb/ton					0.022			0.003				
						0.010			0.002				
brake/tire wear						see above EMFAC			see above EMFAC				
onroad dust	lb/VMT					0.001			0.000				
						0.000			0.000				

Offroad Equipment

grader	Grader
70 ton crane	Crane
caterpillar (pile driver)	Other Construction Equipment
back hoe	Tractor/Loader/Backhoe
loader	RT Loader
jack hammer/concrete pulve	Crushing/Proc. Equipment
excavator	Excavator
asphalth paver	Paver
compactor	Plate Compactor
trencher	Trencher
DIRECTIONAL DRILL RIG	DIRECTIONAL DRILL RIG

Onroad

4 door pickup	LDT1
flat bed trailer truck	T7 SC
bucket truck	T7 SC
line truck	T7 SC
rope truck	T7 SC
2 door pickup	LDT1
2 ton tool truck w c	T7 SC
concrete truck	T7 SC
pump truck	T7 SC
water truck	T7 SC
dump truck (20 yd3	T7 SC
haul truck	T7 SC

Other

tensioner attached to trailer

	Equipmen	Reference
grader	Grader	Caleemod Table 3.3
70 ton crane	Crane	http://www.m (HP from website, Load factor from Table 3.3 - OH Tractor)
pile driver (caterpillar)	Other Con	http://www.kellytractor.com/eng/products/foundation_drilling/pile_driving.aspx (HP from website, Load factor from Table 3.3 - other construction equip
back hoe	Tractor/Lo	Caleemod Table 3.3
loader	RT Loader	Caleemod Table 3.3
jack hammer/concrete pulverize	Crushing/F	Caleemod Table 3.3
excavator	Excavator	Caleemod Table 3.3
asphalth paver	Paver	Caleemod Table 3.3
compactor	Plate Com	Caleemod Table 3.3
trencher	Trencher	Caleemod Table 3.4
DIRECTIONAL DRILL RIG	DIRECTION	AP42 http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf

ıment

On-Site Equipment Emission Rates

Caleemod is used to calculate emission rate for each type of construction equipment operating at 8 hours per day.

The load factors used for Caleemod modeling are updated to reflect the values presented in the 2011 Carl Moyer Guidelines, which are based on ARB's most recently released load factor data (ARB 2011).

8	Modeled Equipment Operating hours/day
8	Average Equipment Operating hours/day
24	Average Equipment Operating days/month (4 weeks * 6 days)

Reference:

California Air Resources Board (ARB). 2011. The Carl Moyer Program Guidelines. Release Date: June 6, 2011.

0.002204623	grams/pound
0.0005	tons/pound

Worker Commute Trips

The assumed percentages of vehicle types that workers used to commute are listed below:

Vehicle Type	Percent of Vehicle Type	
LDA	50%	Passenger Cars
LDT1	50%	Light-Duty Trucks (0-3750 lbs)

On-Road Vehicles Emission Rates

EMFAC2011 is used to calculate emission rates for worker commute vehicles and hauling trucks.

Emission rates used for the analysis are based on averaged travel speed and are the weighted average of gas and diesel rates.

For worker commute vehicles, it is assumed that 50% would be passenger cars (LDA) and 50% would be light-duty trucks (LDT1).

Hauling trucks are assumed to be heavy duty diesel single unit construction trucks (T7 SC)

GHG Assumptions

MT/Short Tons	0.90718
MT/lbs	0.00045

Diesel Fuel (on-site)

	CO2	CH4	N2O	Total GHGS (CO2e)
kg/gal diesel	10.15	0.00058	0.00026	10.24
GWP	1	21	310	
Ratio	1	0.0012	0.0079	1.009

Diesel Fuel (On-road)

	CO2	CH4 (g/mi)	N2O (g/mi)	
Passenger Cars (1983 - Present)		0.0005	0.001	
Light Trucks (1996 - Present)		0.001	0.0015	
Heavy-Duty Vehicles		0.0051	0.0048	
GWP	1	21	310	

Gasoline (on-road)

	CO2	Other GHGs (on road)		Total GHGS (CO2e)
Percent of GHGs	95%	5%		
GWP		1		
Ratio	1	0.053		1.053

Electricity

	CO2	CH4	N2O	Total GHGS (CO2e)
lbs/MWh	681	2.83E-02	6.23E-03	684
GWP	1	21	310	
Ratio	1	8.72E-04	2.84E-03	1.004

CH4 and N2O for Off-road diesel fuel are calculated by scaling the estimated CO2 emissions according to the California Climate Action Registry (2009a).

CH4 and N2O for On-road diesel fuel are calculated by scaling the estimated CO2 emissions according to the California Climate Action Registry (2009b).

Other GHGs for gasoline are calculated by scaling the estimated CO2 emissions according to the EPA (2011a).

GHGs for electricity are based on the eGRID subregion GHG output emission rates for year 2007 (EPA 2011b).

Reference:

Available: <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf>.

Available: <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf>.

Available: < http://www.epa.gov/oms/climate/420f05004.htm>.

EPA. 2011b. eGRID2010 Version 1.1. Available: < http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html>.

Fugitive Dust from Grading

EFpm15	2.571		
EFtsp	5.373		
mean vehical speed (S)	7.1	mph	AP-42
FPM25	0.031	scaling fact	AP-42
FPM10	0.600	scaling fact	AP-42
EFPM10	1.543	pound/VMT	
EFPM2.5	0.167	pound/VMT	
blade width	12	ft	Caleemod App A
conversion	8.25	43560 ft2/acre*5280 ft/mile	

Table 3.7 Grading Equipment Acres Per Day

Equipment Type	Acres per 8hr Day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

Fugitive Dust from Truck Loading/Unloading

EFPM10	0.021795	
EFPM2.5	0.0033	
K10	0.35	AP-42
K25	0.053	AP-42
U	5	MPH wind speed WRCC for
M	0.12	% moisture content AP-42
	1.264166	tons per yd3

Crane	240
Excavator	157
Other Construction Equipment	350
RT Loader	87
Grader	162
Tractor/Loader/Backoes	75
Plate Compactor	8
Crushing/Proc. Equipment	85
Paver	89
Trencher	69
DIRECTIONAL DRILL RIG	2000

Grams/Hour

Equipment Type	Year	Low HP	High HP	TOG	ROG	CO	NOX (mitigate	SO2	PM10 mitigat	PM2.5 mitigat	CO2	CH4
Crane	2012	176	250	7.065	0.558	1.572	4.3424	0.006	0.1078	0.1078	568.299	0.05
Excavator	2012	121	175	11.942	0.652	3.381	3.8944	0.006	0.1584	0.1584	568.299	0.058
Other Construction Equipment	2012	251	500	25.291	0.339	1.212	2.9632	0.005	0.06655	0.06655	568.299	0.03
RT Loader	2012	51	120	9.383	1.007	4.039	4.9416	0.006	0.30525	0.30525	568.299	0.09
Grader	2012	121	175	7.384	0.712	3.376	4.3768	0.006	0.17325	0.17325	568.299	0.064
Tractor/Loader/Backhoe	2012	51	120	7.016	0.835	3.908	4.3152	0.006	0.2607	0.2607	568.3	0.075
Plate Compactor	2012	6	15	0.79	0.661	3.469	3.3136	0.008	0.09075	0.09075	568.3	0.059
Crushing/Proc. Equipment	2012	51	120	5.173	1.042	3.984	5.0152	0.006	0.3201	0.3201	568.299	0.094
Paver	2012	51	120	12.058	1.205	4.194	5.7736	0.006	0.35035	0.35035	568.299	0.108
Trencher	2012	51	120	19.371	1.185	4.143	5.7848	0.006	0.341	0.341	568.299	0.106
DIRECTIONAL DRILL RIG	2012	51	2600	0	0.1814369	2.5854765	4.0823313	0.1587573	0.1496855	0.1496855	505.75549	0
	1	2	3	4	5	6	7	8	9	10	11	12	13
DIRECTIONAL DRILL RIG Tier 2	2012	51	2600	0	0.0004	0.0057	0.009	0.00035	0.00033	0.00033	1.115	0	lb/hp-hr

unmitigated

TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
7.065	0.558	1.572	5.428	0.006	0.196	0.196	568.299	0.05
11.942	0.652	3.381	4.868	0.006	0.288	0.288	568.299	0.058
25.291	0.339	1.212	3.704	0.005	0.121	0.121	568.299	0.03
9.383	1.007	4.039	6.177	0.006	0.555	0.555	568.299	0.09
7.384	0.712	3.376	5.471	0.006	0.315	0.315	568.299	0.064
7.016	0.835	3.908	5.394	0.006	0.474	0.474	568.3	0.075
0.79	0.661	3.469	4.142	0.008	0.165	0.165	568.3	0.059
5.173	1.042	3.984	6.269	0.006	0.582	0.582	568.299	0.094
12.058	1.205	4.194	7.217	0.006	0.637	0.637	568.299	0.108
19.371	1.185	4.143	7.231	0.006	0.62	0.62	568.299	0.106
0	1.1203732	3.029997	14.061363	0.9298644	0.9979032	0.9979032	505.75549	0
1	2	3	4	5	6	7	8	9
0	0.00247	0.00668	0.031	0.00205	0.0022	0.0022	1.115	0

Paving

Emissions based on Calculation Details in CalEEMod Users Guide, Appendix A, pages 16-17

Eap = Efap x Aparking

	Unmitigated	Mitigated	
VOC Emissions (E)	0	0	pounds of VOC per day
EF	2.62	2.62	lbs of VOC p CalEEMod default, based on SMAQMD
A	0	0	paving acreage

	length	width	acreage
Access Roads			
Left levee	4250	16	1.561065
Right Levee	2400	16	0.881543
Left Floodb	1250	12	0.344353
Right Flooc	2000	12	0.550964

ft2/acre 43560

On-Site Dust Emission Control (Basic Construction Mitigation Measures 1-5)

Water exposed surfaces and unpaved haul roads at least 2 times daily.

Reduce speed on unpaved roads to less than 15 mph.

PM 53% reduction

On-Site Equipment Emission Control (Basic Mitigation Measures 6-7 plus Additional Mitigation Measure 10

Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes.

All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.

Use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and add-on devices such as particulate filters.

Develop a plan achieve a project wide fleet-average reduction of

20% NOx

45% PM

Addition MMs

Require the use of Tier 2 drilling http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/jonah.Par.9245.File.dat/29FAQTSDvolII.pdf

Methodology

Calculation Methodology: USEPA AP-42, Paved Roads, Section 13.2.1, Revised January 2011:
http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf
Avg vehicle weight and silt loading on Local Roads within San Mateo and Santa Clara County:
http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9.pdf
Precipitation Days greater than 0.254mm (0.01 in):
http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6646

Emission Factor Calculation

$$E_{ext} = \left[k\,(sL)^{0.91} \times (W)^{1.02} \right] (1 - P/4N)$$

Pollutant	Variables					Emission Factor (lbs per VMT)
	k	sL	W	P	N	
PM_{10}	0.0022	0.2	2.4	56	365	0.00119
$PM_{2.5}$	0.00054	0.2	2.4	56	365	0.00029

E = particulate emission factor (lbs of particulate matter/VMT)	
k = particle size multiplier (lb/VMT)	*default from AP-42*
sL = roadway silt loading (g/m2)	*AP-42 Table 13.2.1-2, silt loading baseline for 500-5000 ADT roads*
W = average weight of vehicles on the road (tons)	*ARB Section 7.9, Table 3, San Diego County*
P = number of wet days with at least 0.254mm of precipitation	*WRCC 1914-2010 average for Lindbergh Field*
N = number of days in the averaging period	*annual days*

Bay Area Air Quality Management District
Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

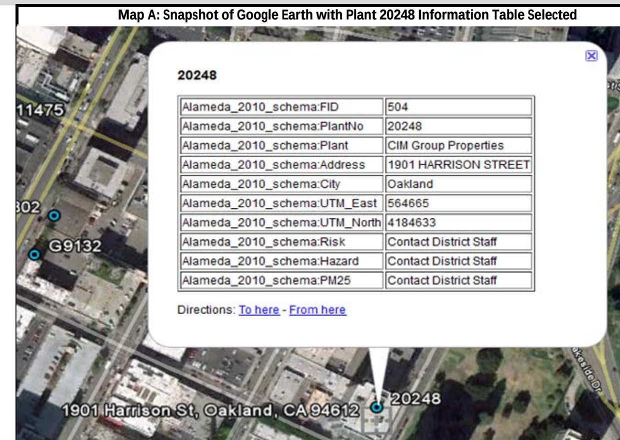
Also see the District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requestor Contact Information	
Contact Name:	Nicholas Dreves
Affiliation:	ICF International
Phone:	949-333-6609
Email:	nicholas.dreves@icfi.com
Date of Request	5/25/2012
Project Name:	San Francisquito Creek Flood Reduction Project
Address:	San Francisquito Creek Lower Reach
City:	Palo Alto/East Palo Alto
County:	Santa Clara and San Mateo Counties
Type (residential, commercial, mixed use, industrial, etc.):	Levee Upgrade/Degrade, Floodwall Construction, Marshplain Restoration
Project size (# of units, or building square feet):	Approx. 1.5 miles of SF Creek northeast of US101
Comments:	

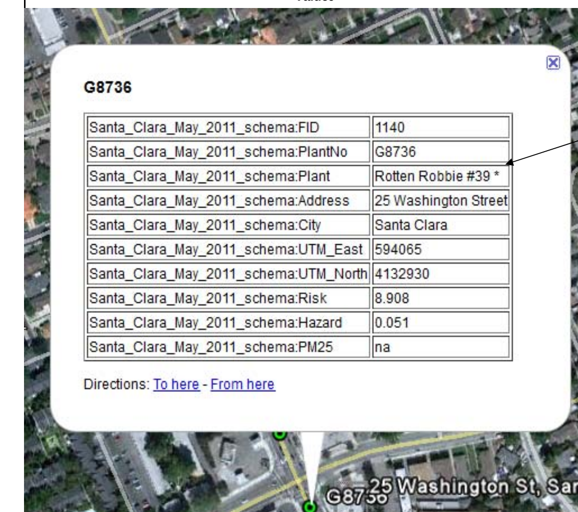
For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, http://www.google.com/earth/download/ge/, and then download the county specific Google Earth stationary source application files from the District's website, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Using the Google Earth ruler function, measure the distance in feet between the project's fenceline and the stationary source's fenceline for all the sources that are within 1,000 feet of the project's fenceline. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm that the source is within 1,000 feet of the project. Please report any mapping errors to the District (District contact information in Step 9).
5. If the stationary source is within 1,000 feet of the project's fenceline and the stationary source's information table does not list the cancer risk, hazard index, and PM2.5 concentration, and instead says to "Contact District Staff", list the stationary source information in Table B Section 1 below.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff (Step 9). District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.
8. **Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.**
9. **Submit forms, maps, and questions to Alison Kirk at 415-749-5169, or akirk@baaqmd.gov**.

Map A: Snapshot of Google Earth with Plant 20248 Information Table Selected



Map B: Snapshot of Google Earth with Plant G8736 Information Table Selected Showing HRSA Values



Note the asterisk next to the plant name. This means that the values that appear below are from the HRSA. These values cannot be further adjusted using our screening tools, such as the diesel multiplier sheet. These values are based on modeling. If the Information Table says "Contact District Staff" include in Table B below.

Table B: Stationary Sources within 1,000 feet of Receptor that say "Contact District Staff"

Table B Section 1: Requestor fills out these columns based on Google Earth data				Table B Section 2: BAAQMD returns form with additional information in these columns as needed															
Distance from Receptor (feet)	Plant # or Gas Dispensary #	Facility Name	Street Address	Screening Level Cancer Risk (1)	Screening Level Hazard Index (1)	Screening Level PM2.5 (1)	Permit #s (2)	Source #s (2)	Fuel Code (3)	Type of Source(s) (4)	HRSA Ap # (5)	HRSA Date (6)	HRSA Engineer (7)	HRSA Cancer Risk in a million	Age Sensitivity Factor (8)	HRSA Adjusted Cancer Risk	HRSA Chronic Health (9)	HRSA PM2.5 Risk	Status/Comments
500	18938	City Of Palo Alto-San Francisquito Pump	2027 E Bayshore Road	39.36	0.014	0.07	17391	diesel pump		diesel pump	17391	4/3/2008	RTH	1.700	1.7	2.89	0.010	0.009059561	Use HRSA values
																		0	
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Footnotes:

1. These Cancer Risk, Hazard Index, and PM2.5 columns represent the rows in the Google Earth Plant Information Table that say "Contact District Staff" (Map A above). BAAQMD will return this form to you with this screening level information entered in these columns.
2. Each plant may have multiple permits and sources.
3. Fuel codes: 98 = diesel, 189 = Natural Gas.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
6. The date that the HRSA was completed.
7. Engineer who completed the HRSA. For District purposes only.
8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
9. The HRSA "Chronic Health" number represents the Hazard Index.
10. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is 0.003 for these sources.
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
3/12/12

Bay Area Air Quality Management District

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Address:	San Francisquito Creek Lower Reach
City:	Palo Alto/East Palo Alto
County:	Santa Clara and San Mateo Counties
Type (residential, commercial, mixed use, industrial, etc.):	Levee Upgrade/Degrade, Floodwall Construction, Marshplain Restoration
Project size (# of units, or building square feet):	Approx. 1.5 miles of SF Creek northeast of US101
Comments:	

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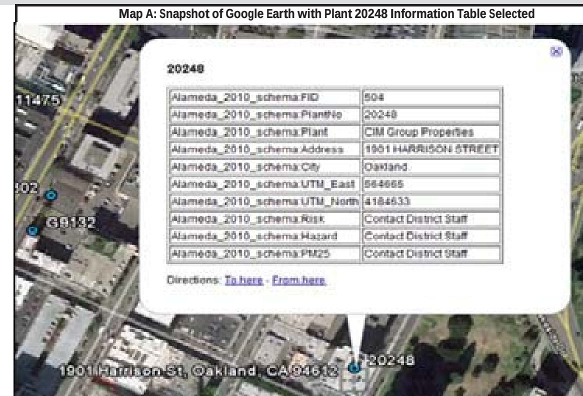

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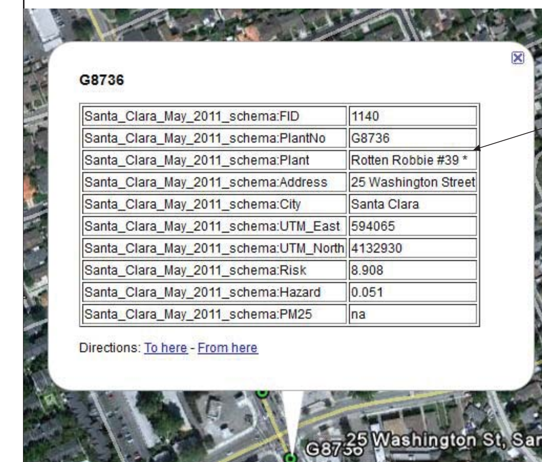

Note the asterisk next to the plant name. This means that the values that appear below are from the HRSA. These values cannot be further adjusted using our screening tools, such as the diesel multiplier sheet. These values are based on modeling. If the Information Table says "Contact District Staff" include in Table B below.

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500	18938	City Of Palo Alto-San Francisquito Pump	2027 E Bayshore Road	39.36	0.014	0.07	17391	diesel pump		diesel pump	17391	4/3/2008	RTH	1.700	1.7	2.89	0.010	0.009059561	Use HRSA values
																		0	
																		0	
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6. The date that the HRSA was completed.
7. Engineer who completed the HRSA. For District purposes only.
8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
9. The HRSA "Chronic Health" number represents the Hazard Index.
10. Further information about common sources:
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    - b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is 0.003 for these sources.
    - c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
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    - e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    - f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    - g. This spray booth is considered to be insignificant.

Date last updated:
3/12/12

Health Risk Assessment

Project Level Analysis

Project Element	Average Hourly PM10 Concentration (ug/m3)	Average Hourly PM2.5 Concentration (ug/m3)	Average Annual PM10 Concentration (ug/m3)	DPM Non-Cancer Hazard Index (HI)	DPM Cancer Risk (per Million)	Average Annual PM2.5 Concentration (ug/m3)	Mitigated DPM Non-Cancer Hazard Index (HI)	Mitigated DPM Cancer Risk (per Million)	Mitigated Annual PM2.5 Concentration (ug/m3)
Utility Relocation									
Site and Road prep, Grading for access to East Palo Alto side of creek	85.6	85.6	0.09	0.02	0.03	0.09	0.01	0.02	0.06
Wood Pole Relocation, Demo, and Secondary Wire removal	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Construction of Shoofly Towers (T1-4)	234.1	234.1	1.15	0.23	1.44	1.15	0.13	0.80	0.65
Gas line work, Directional drilling	1199.0	1199.0	2.63	0.53	1.45	2.63	0.08	0.22	0.40
export of material from gas line cut/fill	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
demobilisation	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 1							0.00	0.00	0.00
Site Prep	252.8	252.8	0.83	0.17	0.69	0.83	0.09	0.38	0.46
Construction of New Left Bank Levee	347.8	347.8	0.95	0.19	0.66	0.95	0.10	0.36	0.52
Removal of Old Left Bank Levee	221.2	221.2	0.36	0.07	0.15	0.36	0.04	0.08	0.20
Removal of Old Right Bank Levee	187.2	187.2	0.21	0.04	0.06	0.21	0.02	0.03	0.11
Construction of Right Bank Levee	215.7	215.7	0.35	0.07	0.15	0.35	0.04	0.08	0.20
Construction of downstream access road on right and left banks	191.7	191.7	0.42	0.08	0.23	0.42	0.05	0.13	0.23
Friendship Bridge	192.9	192.9	0.63	0.13	0.53	0.63	0.07	0.29	0.35
Channel Widening and Marshplain Terracing	518.9	518.9	2.84	0.57	3.93	2.84	0.31	2.17	1.57
Revegetation	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2							0.00	0.00	0.00
Site Prep	273.5	273.5	0.45	0.09	0.19	0.45	0.05	0.10	0.25
Installation of right and left bank floodwalls	572.9	572.9	6.28	1.26	17.37	6.28	0.69	9.57	3.46
Construction of upstream access road on right and left banks	244.1	244.1	0.54	0.11	0.30	0.54	0.06	0.16	0.29
Site Restoration	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			BAAQMD Threshold	**1**	**10**	**0.3**	**1**	**10**	**0.3**

Cumulative Level Analysis

Project Element	Background DPM Non-Cancer Hazard Index (HI)	Background DPM Cancer Risk (per Million)	Background Average Annual PM2.5 Concentration (ug/m3)	Cumulative DPM Non-Cancer Hazard Index (HI)	Cumulative DPM Cancer Risk (per Million)	Cumulative Average Annual PM2.5 Concentration (ug/m3)	Mitigated Cumulative DPM Non-Cancer Hazard Index (HI)	Mitigated Cumulative DPM Cancer Risk (per Million)	Mitigated Cumulative Average Annual PM2.5 Concentration (ug/m3)
Utility Relocation									
Site and Road prep, Grading for access to East Palo Alto side of creek				0.02	0.03	0.09	0.01	0.02	0.06
Wood Pole Relocation, Demo, and Secondary Wire removal				0.00	0.00	0.00	0.00	0.00	0.00
Construction of Shoofly Towers (T1-4)				0.23	1.44	1.15	0.13	0.80	0.65
Gas line work, Directional drilling				0.53	1.45	2.63	0.08	0.22	0.40
export of material from gas line cut/fill				0.00	0.00	0.00	0.00	0.00	0.00
demobilisation				0.00	0.00	0.00	0.00	0.00	0.00
Phase 1									
Site Prep				0.17	0.69	0.83	0.09	0.38	0.46
Construction of New Left Bank Levee				0.19	0.66	0.95	0.10	0.36	0.52
Removal of Old Left Bank Levee				0.07	0.15	0.36	0.04	0.08	0.20
Removal of Old Right Bank Levee				0.04	0.06	0.21	0.02	0.03	0.11
Construction of Right Bank Levee				0.07	0.15	0.35	0.04	0.08	0.20
Construction of downstream access road on right and left banks				0.08	0.23	0.42	0.05	0.13	0.23
Friendship Bridge				0.13	0.53	0.63	0.07	0.29	0.35
Channel Widening and Marshplain Terracing	0.1	139.7	0.89	0.68	143.60	3.73	0.43	141.83	2.45
Revegetation				0.00	0.00	0.00	0.00	0.00	0.00
Phase 2									
Site Prep	0.1	139.7	0.89	0.21	139.85	1.34	0.17	139.77	1.13
Installation of right and left bank floodwalls	0.1	139.7	0.89	1.37	157.04	7.17	0.81	149.23	4.35
Construction of upstream access road on right and left banks	0.1	139.7	0.89	0.22	139.96	1.42	0.17	139.83	1.18
Site Restoration				0.00	0.00	0.00	0.00	0.00	0.00
			BAAQMD Threshold	**10**	**100**	**0.8**	**10**	**100**	**0.8**

Cancer Risk Calculation Factors

Hourly to Annual Concentration Conversion Factor	0.1
Chronic Reference Exposure Level (REL) per OEHHA	5
Lifetime Years	70
Days per Year	350
Daily Breath Rate (L/kg)	302
Conversion Factor ([mg/ug] * [m3/L])	1.E-06
Average Age Sensitivity Factor (ASF) for Resident	1.7
Average Age Sensitivity Factor (ASF) for Office	1
Cancer Potency Factor ($[mg/kg\text{-}day]^{-1}$)	1.1

Project SCREEN3 Inputs

Project Element	Annual On-site PM10 Exhaust (tons/year)	Annual On-site PM2.5 Exhaust (tons/year)	Construction hours/day	Construction days/year	Average Hourly PM10 Exhaust (lbs/hr)	Average Hourly PM2.5 Exhaust (lbs/hr)	Average Daily Construction Area (sqft)	square root of avg daily construction	Average Distance (ft)	Exposure year	Annual Construction Area (sqft)	
Utility Relocation											43560	ft2/acre
Site and Road prep, Grading for access to East Palo Alto side of creek	0.003	0.003	8	12	**0.0627**	**0.0627**	22500.0	**150.0**	25	1	270000	
Wood Pole Relocation, Demo, and Secondary Wire removal	0.000	0.000	8	10	**0.0000**	**0.0000**	0.0	**0.0**	25	1	0	
Construction of Shoofly Towers (T1-4)	0.031	0.031	8	54	**0.1426**	**0.1426**	4444.4	**66.7**	25	1	240000	
Gas line work, Directional drilling	0.089	0.089	8	24	**0.9240**	**0.9240**	10000.0	**100.0**	25	1	240000	
export of material from gas line cut/fill	0.000	0.000	8	7	**0.0000**	**0.0000**	0.0	**0.0**	25	1	0	
demobilisation	0.000	0.000	8	6	**0.0000**	**0.0000**	0.0	**0.0**	25	1	0	
Phase 1		0.000							25			
Site Prep	0.027	0.027	8	36	**0.1857**	**0.1857**	16819.0	**129.7**	25	1	605484	
Construction of New Left Bank Levee	0.039	0.039	8	30	**0.3285**	**0.3285**	29782.5	**172.6**	25	1	893475	
Removal of Old Left Bank Levee	0.024	0.024	8	18	**0.3285**	**0.3285**	49637.5	**222.8**	25	1	893475	
Removal of Old Right Bank Levee	0.016	0.016	8	12	**0.3285**	**0.3285**	60000.0	**244.9**	25	1	720000	
Construction of Right Bank Levee	0.024	0.024	8	18	**0.3285**	**0.3285**	43541.7	**208.7**	25	1	783750	
Construction of downstream access road on right and left banks	0.014	0.014	8	24	**0.1474**	**0.1474**	9975.0	**99.9**	25	1	239400	
Friendship Bridge	0.014	0.014	8	36	**0.1006**	**0.1006**	2777.8	**52.7**	25	1	100000	
Channel Widening and Marshplain Terracing	0.079	0.079	8	60	**0.3285**	**0.3285**	19093.8	**138.2**	25	1	1145628	
Revegetation	0.000	0.000	8	36	**0.0000**	**0.0000**	0.0	**0.0**	25	1	0	
Phase 2		0.000	8						25			
Site Prep	0.013	0.013	8	18	**0.1857**	**0.1857**	18055.6	**134.4**	25	1	325000	
Installation of right and left bank floodwalls	0.142	0.142	8	120	**0.2968**	**0.2968**	2708.3	**52.0**	25	1	325000	
Construction of upstream access road on right and left banks	0.014	0.014	8	24	**0.1474**	**0.1474**	4333.3	**65.8**	25	1	104000	
Site Restoration	0.000	0.000	8	12	**0.0000**	**0.0000**	0.0	**0.0**	25	1	0	

means there are ZERO offroad emissions from this component

Background Health Risk Sources

DPM Non-Cancer Hazard Index

Project Element	G2867, Rainer's Gas, 25 m	18938, City of Palo Alto-San Francisquito Pump, 25 m	Link 247, US101 100 ft	Link 248, US101 50 ft	Total Sources
Utility Relocation					
Site and Road prep, Grading for access to East Palo Alto side of creek					
Wood Pole Relocation, Demo, and Secondary Wire removal					
Construction of Shoofly Towers (T1-4)					
Phase 1					
Site Prep					
Construction of New Left Bank Levee					
Removal of Old Left Bank Levee					
Removal of Old Right Bank Levee					
Construction of Right Bank Levee					
Construction of downstream access road on right and left banks					
Friendship Bridge					
Channel Widening and Marshplain Terracing	0.00437	0.0119	0.041	0.059	0.116268
Revegetation					
Phase 2					
Site Prep	0.00437	0.0119	0.041	0.059	0.116268
Installation of right and left bank floodwalls	0.00437	0.0119	0.041	0.059	0.116268
Construction of upstream access road on right and left banks	0.00437	0.0119	0.041	0.059	0.116268
Site Restoration					

	G2867, Rainer's Gas, 25 m	18938, City of Palo Alto-San Francisquito Pump, 25 m	Link 247, US101 100 ft	Link 248, US101 50 ft	determine the distance of these sources from each project element!
DPM Non-Cancer Hazard Index	0.004	0.012	0.041	0.059	
DPM Cancer Risk	4.601	33.456	40.791	60.820	
PM2.5 Concentration	NA	0.070	0.382	0.435	

Diesel IC m 0.85 conservative, assumes distance o
gas station 0.728

DPM Cancer Risk

Project Element	G2867, Rainer's Gas, 550 ft	18938, City of Palo Alto-San Francisquito Pump, 250 ft	2628, Yeoman Auto Body, 700 ft	16315, Mathews Carlsen Body Works, 950 ft	Total Sources
Utility Relocation					
Site and Road prep, Grading for access to East Palo Alto side of creek					
Wood Pole Relocation, Demo, and Secondary Wire removal					
Construction of Shoofly Towers (T1-4)					
Phase 1					
Site Prep					
Construction of New Left Bank Levee					
Removal of Old Left Bank Levee					
Removal of Old Right Bank Levee					
Construction of Right Bank Levee					
Construction of downstream access road on right and left banks					
Friendship Bridge					
Channel Widening and Marshplain Terracing	4.60096	33.456	40.791	60.82	139.66796
Revegetation					
Phase 2					
Site Prep	4.60096	33.456	40.791	60.82	139.66796
Installation of right and left bank floodwalls	4.60096	33.456	40.791	60.82	139.66796
Construction of upstream access road on right and left banks	4.60096	33.456	40.791	60.82	139.66796
Site Restoration					

PM2.5 Concentration

Project Element	G2867, Rainer's Gas, 550 ft	18938, City of Palo Alto-San Francisquito Pump, 250 ft	2628, Yeoman Auto Body, 700 ft	16315, Mathews Carlsen Body Works, 950 ft	Total Sources
Utility Relocation					
Site and Road prep, Grading for access to East Palo Alto side of creek					
Wood Pole Relocation, Demo, and Secondary Wire removal					
Construction of Shoofly Towers (T1-4)					
Phase 1					
Site Prep					
Construction of New Left Bank Levee					
Removal of Old Left Bank Levee					
Removal of Old Right Bank Levee					
Construction of Right Bank Levee					
Construction of downstream access road on right and left banks					
Friendship Bridge					
Channel Widening and Marshplain Terracing	NA	0.07	0.382	0.435	0.887

Revegetation					
Phase 2					
Site Prep	NA	0.07	0.382	0.435	0.887
Installation of right and left bank floodwalls	NA	0.07	0.382	0.435	0.887
Construction of upstream access road on right and left banks	NA	0.07	0.382	0.435	0.887
Site Restoration					

f <25 meters to receptors

Health Risk Assessment

Project Level Analysis

25 ft

Project Element	Average Hourly PM10 Concentration (ug/m3)	Average Hourly PM2.5 Concentration (ug/m3)	Average Annual PM10 Concentration (ug/m3)	DPM Non-Cancer Hazard Index (HI)	DPM Cancer Risk (per Million)	Average Annual PM2.5 Concentration (ug/m3)
Utility Relocation						
Site and Road prep, Grading for access to East Palo Alto side of creek	52.1	52.1	0.06	0.01	0.02	0.06
Wood Pole Relocation, Demo, and Secondary Wire removal	0.0	0.0	0.00	0.00	0.00	0.00
Construction of Shoofly Towers (T1-4)	131.1	131.1	0.65	0.13	0.80	0.65
Gas line work, Directional drilling	180.3	180.3	0.40	0.08	0.22	0.40
export of material from gas line cut/fill	0.0	0.0	0.00	0.00	0.00	0.00
demobilisation	0.0	0.0	0.00	0.00	0.00	0.00
Phase 1						
Site Prep	139.4	139.4	0.46	0.09	0.38	0.46
Construction of New Left Bank Levee	191.5	191.5	0.52	0.10	0.36	0.52
Removal of Old Left Bank Levee	121.8	121.8	0.20	0.04	0.08	0.20
Removal of Old Right Bank Levee	103.1	103.1	0.11	0.02	0.03	0.11
Construction of Right Bank Levee	118.8	118.8	0.20	0.04	0.08	0.20
Construction of downstream access road on right and left banks	105.1	105.1	0.23	0.05	0.13	0.23
Friendship Bridge	106.3	106.3	0.35	0.07	0.29	0.35
Channel Widening and Marshplain Terracing	285.8	285.8	1.57	0.31	2.17	1.57
Revegetation	0.0	0.0	0.00	0.00	0.00	0.00
Phase 2						
Site Prep	150.8	150.8	0.25	0.05	0.10	0.25
Installation of right and left bank floodwalls	315.6	315.6	3.46	0.69	9.57	3.46
Construction of upstream access road on right and left banks	133.9	133.9	0.29	0.06	0.16	0.29
Site Restoration	0.0	0.0	0.00	0.00	0.00	0.00
			BAAQMD Threshold	**1**	**10**	**0.3**
Scenario 1	371.8	371.8	0.9	0.2	0.6	0.9
Scenario 2	466.3	466.3	3.7	0.7	9.7	3.7

Cumulative Level Analysis

Project Element	Background DPM Non-Cancer Hazard Index (HI)	Background DPM Cancer Risk (per Million)	Background Average Annual PM2.5 Concentration (ug/m3)	Cumulative DPM Non-Cancer Hazard Index (HI)	Cumulative DPM Cancer Risk (per Million)	Cumulative Average Annual PM2.5 Concentration (ug/m3)
Utility Relocation						
Site and Road prep, Grading for access to East Palo Alto side of creek				0.01	0.02	0.06
Wood Pole Relocation, Demo, and Secondary Wire removal				0.00	0.00	0.00
Construction of Shoofly Towers (T1-4)				0.13	0.80	0.65
Gas line work, Directional drilling				0.08	0.22	0.40
export of material from gas line cut/fill				0.00	0.00	0.00
demobilisation				0.00	0.00	0.00
Phase 1						
Site Prep				0.09	0.38	0.46
Construction of New Left Bank Levee				0.10	0.36	0.52
Removal of Old Left Bank Levee				0.04	0.08	0.20
Removal of Old Right Bank Levee				0.02	0.03	0.11
Construction of Right Bank Levee				0.04	0.08	0.20
Construction of downstream access road on right and left banks				0.05	0.13	0.23
Friendship Bridge				0.07	0.29	0.35
Channel Widening and Marshplain Terracing	0.1	139.7	0.89	0.43	141.83	2.45
Revegetation				0.00	0.00	0.00
Phase 2						
Site Prep	0.1	139.7	0.89	0.17	139.77	1.13
Installation of right and left bank floodwalls	0.1	139.7	0.89	0.81	149.23	4.35
Construction of upstream access road on right and left banks	0.1	139.7	0.89	0.17	139.83	1.18
Site Restoration				0.00	0.00	0.00
			BAAQMD Threshold	**10**	**100**	**0.8**
Scenario 2				1.6	149.3	4.6
Scenario 1				0.2	0.6	0.9

Cancer Risk Calculation Factors

Hourly to Annual Concentration Conversion Factor	0.1
Chronic Reference Exposure Level (REL) per OEHHA	5
Lifetime Years	70
Days per Year	350
Daily Breath Rate (L/kg)	302
Conversion Factor ([mg/ug] * [m3/L])	1.E-06
Average Age Sensitivity Factor (ASF) for Resident	1.7
Average Age Sensitivity Factor (ASF) for Office	1
Cancer Potency Factor ([mg/kg-day]$^{-1}$)	1.1

Project SCREEN3 Inputs

Project Element	Annual On-site PM10 Exhaust (tons/year)	Annual On-site PM2.5 Exhaust (tons/year)	Construction hours/day	Construction days/year	Average Hourly PM10 Exhaust (lbs/hr)	Average Hourly PM2.5 Exhaust (lbs/hr)	Average Daily Construction Area (sqft)	square root of avg daily construction	Average Distance (ft)	Exposure year	Annual Construction Area (sqft)
Utility Relocation											43560 ft2/acre
Site and Road prep, Grading for access to East Palo Alto side of creek	0.002	0.002	8	12	0.0377	0.0377	22500.0	**150.0**	25	1	270000
Wood Pole Relocation, Demo, and Secondary Wire removal	0.000	0.000	8	10	0.0000	0.0000	0.0	**0.0**	25	1	0
Construction of Shoofly Towers (T1-4)	0.017	0.017	8	54	0.0801	0.0801	4444.4	**66.7**	25	1	240000
Gas line work, Directional drilling	0.013	0.013	8	24	0.1386	0.1386	10000.0	**100.0**	25	1	240000
export of material from gas line cut/fill	0.000	0.000	8	7	0.0000	0.0000	0.0	**0.0**	25	1	0
demobilisation	0.000	0.000	8	6	0.0000	0.0000	0.0	**0.0**	25	1	0
Phase 1									25		
Site Prep	0.015	0.015	8	36	0.1021	0.1021	16819.0	**129.7**	25	1	605484
Construction of New Left Bank Levee	0.022	0.022	8	30	0.1807	0.1807	29782.5	**172.6**	25	1	893475
Removal of Old Left Bank Levee	0.013	0.013	8	18	0.1807	0.1807	49637.5	**222.8**	25	1	893475
Removal of Old Right Bank Levee	0.009	0.009	8	12	0.1807	0.1807	60000.0	**244.9**	25	1	720000
Construction of Right Bank Levee	0.013	0.013	8	18	0.1807	0.1807	43541.7	**208.7**	25	1	783750
Construction of downstream access road on right and left banks	0.008	0.008	8	24	0.0811	0.0811	9975.0	**99.9**	25	1	239400
Friendship Bridge	0.008	0.008	8	36	0.0553	0.0553	2777.8	**52.7**	25	1	100000
Channel Widening and Marshplain Terracing	0.043	0.043	8	60	0.1807	0.1807	19093.8	**138.2**	25	1	1145628
Revegetation	0.000	0.000	8	36	0.0000	0.0000	0.0	**0.0**	25	1	0
Phase 2			8						25		
Site Prep	0.007	0.007	8	18	0.1021	0.1021	18055.6	**134.4**	25	1	325000
Installation of right and left bank floodwalls	0.078	0.078	8	120	0.1632	0.1632	2708.3	**52.0**	25	1	325000
Construction of upstream access road on right and left banks	0.008	0.008	8	24	0.0811	0.0811	4333.3	**65.8**	25	1	104000
Site Restoration	0.000	0.000	8	12	0.0000	0.0000	0.0	**0.0**	25	1	0

means there are ZERO offroad emissions from this component

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at San Jose-Jackson Street

iADAM

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Apr 25	41.1	Jan 8	44.2	Jan 21	40.1
Second High:	Dec 3	40.6	Nov 4	37.4	Feb 11	35.4
Third High:	Jan 31	38.2	Jul 19	36.4	Jan 27	32.1
Fourth High:	Jan 19	35.9	Aug 24	33.4	Jan 12	31.4
California:						
First High:	Apr 25	43.3	Jan 8	46.8	Jan 21	42.0
Second High:	Dec 3	43.0	Nov 4	38.0	Feb 11	37.2
Third High:	Jan 31	40.3	Jul 19	37.2	Jan 27	33.6
Fourth High:	Jan 19	37.9	Aug 24	32.8	Jan 12	33.1
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		*
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		*
Annual Average:		*19.5*		*18.9*		*17.1*
3-Year Average:		*21*		*20*		*19*
California:						
Estimated # Days > 24-Hour Std:		0.0		0.0		*
Measured # Days > 24-Hour Std:		0		0		0
Annual Average:		20.3		19.5		*
3-Year Maximum Annual Average:		23		23		20
Year Coverage:		100		99		69

Notes:

Daily PM10 averages and related statistics are available at San Jose-Jackson Street between 2002 and 2011. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and

national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Cal/EPA | ARB | DPR | DTSC | OEHHA | SWRCB

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Redwood City

iADAM

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 10	31.7	Jan 7	36.5	Jan 16	24.2
Second High:	Dec 11	28.4	Dec 3	31.2	Jan 21	21.9
Third High:	Dec 19	28.0	Jan 8	30.8	Jan 12	21.7
Fourth High:	Dec 31	26.5	Jan 6	29.9	Jan 7	20.3
California:						
First High:	Jan 18	34.2	Jan 8	32.7	Jan 21	20.5
Second High:	Jan 17	28.5	Dec 4	16.7	Jan 15	15.0
Third High:	Jan 8	26.9	Jun 13	15.4	Jan 27	14.7
Fourth High:	Dec 3	26.7	Dec 16	14.0	Jan 3	14.1
National:						
Estimated # Days > 24-Hour Std:		0.0		1.0		*
Measured # Days > 24-Hour Std:		0		1		0
24-Hour Standard Design Value:		27		25		*
24-Hour Standard 98th Percentile:		24.9		24.8		*
Annual Standard Design Value:		8.7		8.7		*
Annual Average:		8.6		8.3		*
California:						
Annual Std Designation Value:		11		*		*
Annual Average:		*		*		*
Year Coverage:		92		97		46

Notes:

Daily PM2.5 averages and related statistics are available at Redwood City between 1999 and 2011. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
An exceedance of a standard is not necessarily related to a violation of the standard.
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at Redwood City

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jan 14	1.76	Jan 6	1.72	Dec 14	1.67
Second High:	Jan 30	1.72	Jan 11	1.69	Dec 9	1.52
Third High:	Dec 19	1.68	Jan 7	1.59	Dec 9	1.46
Fourth High:	Feb 2	1.67	Jan 10	1.53	Jan 27	1.43
California:						
First High:	Jan 14	1.76	Jan 6	1.72	Dec 14	1.67
Second High:	Jan 30	1.72	Jan 11	1.69	Dec 9	1.52
Third High:	Dec 18	1.68	Jan 7	1.59	Jan 27	1.43
Fourth High:	Feb 2	1.67	Jan 9	1.53	Dec 2	1.43
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		2.21		1.93		1.82
Year Coverage:		97		95		97

Notes:

Eight-hour carbon monoxide averages and related statistics are available at Redwood City between 1967 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Redwood City

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Apr 19	0.063	Aug 24	0.077	Jun 20	0.061
Second High:	Apr 20	0.063	Aug 23	0.060	May 4	0.058
Third High:	May 16	0.060	Sep 25	0.057	May 1	0.053
Fourth High:	Apr 21	0.059	Sep 28	0.056	Sep 28	0.053
California:						
First High:	Apr 19	0.063	Aug 24	0.077	Jun 20	0.062
Second High:	Apr 20	0.063	Aug 23	0.061	May 4	0.059
Third High:	May 16	0.061	Sep 25	0.057	Sep 28	0.054
Fourth High:	Apr 5	0.059	Sep 28	0.056	May 1	0.053
National:						
# Days Above the Standard:		0		1		0
Nat'l Standard Design Value:		0.056		0.057		0.056
National Year Coverage:		97		98		94
California:						
# Days Above the Standard:		0		1		0
California Designation Value:		0.063		0.063		0.061
Expected Peak Day Concentration:		0.064		0.063		0.061
California Year Coverage:		96		92		92

Notes:

Eight-hour ozone averages and related statistics are available at Redwood City between 1976 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Redwood City

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Nov 3	0.056	Oct 12	0.059	Oct 23	0.056
Second High:	Feb 2	0.047	Oct 14	0.053	Oct 28	0.047
Third High:	Feb 4	0.046	Nov 4	0.051	Dec 2	0.046
Fourth High:	Jan 19	0.043	Oct 13	0.050	Dec 6	0.046
California:						
# Days Above the Standard:		0		0		0
Annual Average:		0.012		0.012		0.012
Year Coverage:		99		96		86

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Redwood City between 1967 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Redwood City

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Aug 28	0.087	Aug 24	0.113	Sep 28	0.076
Second High:	Apr 21	0.082	Sep 28	0.098	Oct 23	0.071
Third High:	May 16	0.082	Sep 25	0.091	Jun 20	0.070
Fourth High:	Apr 19	0.078	Sep 27	0.086	May 4	0.065
California:						
# Days Above the Standard:		0		2		0
California Designation Value:		0.08		0.09		0.08
Expected Peak Day Concentration:		0.078		0.085		0.081
National:						
# Days Above the Standard:		*0*		*0*		*0*
Nat'l Standard Design Value:		*0.082*		*0.087*		*0.087*
Year Coverage:		98		97		93

Notes:

Hourly ozone measurements and related statistics are available at Redwood City between 1976 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Appendix E

Response to Comments

Table E-1. Key to Comments Received for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101 Draft EIR

Letter	Commenter
1	Eric Mruz, U.S. Fish and Wildlife Service
2	Margarete Beth, San Francisco Bay Regional Water Quality Control Board, S. F. Estuary Partnership
3	Transcript of Public Hearing, East Palo Alto Government Center, Wednesday, August 15, 2012
4	Transcript of Public Hearing, East Palo Alto Government Center, Wednesday, August 29, 2012
5	Libby Lucas
5b	Libby Lucas
6	Shani Kleinhaus, Ph.D., Santa Clara Valley Audubon Society
7	Eileen P. McLaughlin, Board Member, Citizens Committee to Complete the Refuge
8	Brandon Huerta, Chair of East Palo Alto Public Works and Transportation Commission, Planning Commission
9	Eric Alms, California Department of Transportation
10	City of Palo Alto Planning and Transportation Commission Meeting, September 12, 2012
11	Scott Wilson, California Department of Fish and Game Bay Delta Region

Print | Close Window

Subject: Re: Notice of Availability - San Francisquito 'Bay-101' DEIR and public hearings
From: Eric_Mruz@fws.gov
Date: Mon, Aug 06, 2012 3:28 pm
To: <kmurray@sfcjpa.org>
Cc: <Daren.Anderson@CityofPaloAlto.org>, <Melisa_Amato@fws.gov>, <Ryan_Olah@fws.gov>, <Cheryl_Strong@fws.gov>, <Rachel_Tertes@fws.gov>
Attach: graycol.gif
pic30093.gif
ecblank.gif

Kevin,

Thanks for including us with your draft EIR.. As I was skimming through the document I noticed that there are still plans to remove/lower the levee for the Faber Tract. (FT) As you know, the Faber Tract is owned by the City of Palo Alto, but managed as part of the Don Edwards NWR through an MOU with the City.

Is this the plan to lower this levee , what you call the right bank in the DEIR ?

Clapper rails and salt marsh harvest mice are located in this property at high levels for the Bay area, removal of this levee may impact these species with hydrology , vegetation, sediment, and loss of refugia, may impact this sensitive area.

This concerns me as this DEIR is considering removal of an important levee on US Fish and Wildlife Service managed property and was not consulted during design phase.

Eric Mruz
Refuge Manager
Don Edwards San Francisco Bay National Wildlife Refuge
1 Marshlands Road
Fremont, CA 94555
Phone: (510)792-0222, ext 125
Email: Eric_Mruz@fws.gov

<kmurray@sfcjpa.org>

<kmurray@sfcjpa.org>

08/03/2012 03:38 PM

To"'Margarete Beth'" <mabeth@waterboards.ca.gov>, "Darcie Collins" <darcie@savesfbay.org>, "Cynthia D'Agosta" <cynthia@greenfoothills.org>, "Max Delaney" <maxd@bcdc.ca.gov>, "Dave Dockter" <dave.dockter@cityofpaloalto.org>, "Claire Elliott" <clairee@acterra.org>, "Alex Feldt" <alexv@acterra.org>, "Matt Gerhart" <mgerhart@scc.ca.gov>, "Forrest Richardson" <forrest@golfgroupltd.com>, "A.L. Riley" <ALRiley@waterboards.ca.gov>, "Lennie Roberts" <lennie@greenfoothills.org>, "Steve Rothert" <srothert@amrivers.org>, "Sandra Scoggin" <sscoggin@sfbayjv.org>, "Judy Sheen" <Judy.P.Sheen@usace.army.mil>, "Gary Stern" <gary.stern@noaa.gov>, "Matt Stoecker" <matt@stoeckerecological.com>, "Caitlin Sweeney" <CSweeney@waterboards.ca.gov>, "Zlatunich Thomas" <TLZ2@PGE.COM>,

"Laura Thompson" <laurat@abag.ca.gov>, "Sally Tomlinson" <sallytomlinson@tomlinsonmail.com>, "Alicia Torregrosa" <atorregrosa@usgs.gov>, "Jim Wiley" <jim.wiley@gmail.com>, "Scott Wilson" <swilson@dfg.ca.gov>, "Tom Zigterman" <twz@stanford.edu>, "Philippe Cohen" <philippe.cohen@stanford.edu>, "Robin Grossinger" <robin@sfei.org>, "Deborah Hirst" <dhirst@scc.ca.gov>, "Bernardo Huerta" <bnaudnaud@yahoo.com>, "Amy Hutzel" <ahutzel@scc.ca.gov>, "Laura Jones" <ljones@stanford.edu>, "Jennifer Krebs" <JKrebs@waterboards.ca.gov>, "Alan Launer" <aelauner@stanford.edu>, "Yvonne LeTellier" <yvonne.c.letellier@usace.army.mil>, "Michael Lightstone" <MxLd@pge.com>, "Rick Lodwick" <R4L1@pge.com>, "Libby Lucas" <jlucas1099@aol.com>, "Jean McCown" <jmccown@stanford.edu>, "Lester McKee" <lester@sfei.org>, "Ron Moriguchi" <ron_moriguchi@dot.ca.gov>, "Carl Morrison" <cmorrison@morrisonassociates.com>, "Eric Mruz" <Eric_Mruz@fws.gov>, "Winnie Chan" <Winnie_chan@fws.gov>

cc

Subject Notice of Availability - San Francisquito 'Bay-101' DEIR and public hearings

Dear Interested Parties:

On July 30, 2012 The San Francisquito Creek Joint Powers Authority (JPA) released a Draft Environmental Impact Report (DEIR) for the 'Bay-101' flood protection, ecosystem restoration, and recreational enhancement project on San Francisquito Creek between Highway 101 and San Francisco Bay. This project is the first of a series being planned and designed by the JPA to provide comprehensive flood protection, ecosystem restoration, and recreational benefits to the communities surrounding San Francisquito Creek, and, when implemented, will enable future upstream improvements between Highway 101 and El Camino Real, including the modification of several in channel constrictions such as the 101, Newell, Pope-Chaucer, and Middlefield Bridges. The document is available for download at www.sfcjpa.org. Hard copies are also available for public review at Palo Alto City Hall and at the Palo Alto Main Library. The JPA will host two public hearings, on **August 15, 2012** and **August 29, 2012** at 6:00pm in the East Palo Alto City Council Chambers. Comments on the DEIR may be given at either of the two scheduled public hearings, by mail to the SFCJPA, Attn: Bay-101 DEIR, 615-B Menlo Ave, Menlo Park, CA 94025, or by email to jpa@sfcjpa.org. Comments on the DEIR must be sent to the JPA by **September 13, 2012,** the end of the 45-day scheduled public comment period.

Kevin Murray
Project Manager
San Francisquito Creek Joint Powers Authority
650-324-1972

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Subject: RE: Notice of Availability - San Francisquito 'Bay-101' DEIR and public hearings
From: "Beth, Margarete@Waterboards" <Margarete.Beth@waterboards.ca.gov>
Date: Wed, Aug 22, 2012 9:14 am
To: "kmurray@sfcjpa.org" <kmurray@sfcjpa.org>

Dear Mr. Murray:

The San Francisco Bay Regional Water Quality Control Board (Water Board) appreciates the opportunity to review the *Draft Environmental Impact Report for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101* (Draft EIR). The Draft EIR assesses anticipated environmental impacts resulting from various flood protection activities along the San Francisquito Creek in the city of Palo Alto. The San Francisquito Creek Join Powers Authority (SFCJPA) proposes a project with five elements: 1) sediment removal for flow increased flow conveyance; 2) levee alteration and relocation; 3) floodwalls; 4) overflow weir to existing marsh basin; and 5) bridge extension.

We have the following comments on the Project as presented in the Draft EIR, which may impact waters of the State. Full responses to these comments should be useful in developing a revised EIR that would facilitate future permitting of the Project by the Water Board.

1. The SFCJPA should design the Project that avoids and minimizes impacts within the bed and bank and riparian corridor to the maximum extent practicable. Compensatory mitigation should be proposed where impacts are unavoidable. The SFCJPA must identify and include all impacts to waters of the State in the final EIR and the CWA Section 401 application.
2. The EIR should include a discussion on geomorphic and hydraulic impacts downstream and upstream of the Project Site due to Project design. These should be included in the Final EIR.

3. Pages 2-17 to 2-21 (Water Quality Protection)
    a. The Draft EIR states specific measures will be implemented to reduce and minimize pollution during “maintenance activities.” The Draft EIR should include BMPs to avoid and minimize impacts to water quality during construction activities, post-construction, and maintenance activities.
    b. The SFCJPA should propose adequate BMPs associated with stockpiles and protecting water quality.
    c. The Draft EIR states the dump truck would tilt the truck to drain water, but does not indicate where this activity would occur.
    d. The Draft EIR states “Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site.” Natural watercourse turbidity measurements are typically taken upstream of the diversion structure and not the discharge location. Also, baseline measurements are typically taken at the beginning of construction, after a rain event, and/or a change in construction activity with daily water quality monitoring conduct at least twice per day.
    e. Coffer dams constructed of gravel shall be covered with material to prevent

seepage.

f. Coffer dams shall not be constructed of earthen fill due to potential adverse water quality impacts in the event of a failure.

If you have any questions, please contact me at 510-622-2338 or mabeth@waterboards.ca.gov.

Margarete “Maggie” Beth
Environmental Specialist
S.F. Regional Water Quality Control Board
S.F. Estuary Partnership
1515 Clay Street, 14th Floor
Oakland, CA 94612
Ph: 510:622-2338
Fx: 510-622-2501
mabeth@waterboards.ca.gov

From: kmurray@sfcjpa.org [mailto:kmurray@sfcjpa.org]
Sent: Friday, August 03, 2012 3:39 PM
To: Laura Thompson; Alex Feldt; Claire Elliott; Steve Rothert; Libby Lucas; MaxDelaney; Dave Dockter; Scott Wilson; Ron Moriguchi; Eric Mruz; WinnieChan; Jim Wiley; Forrest Richardson; Cynthia D'Agosta; Lennie Roberts; Beth, Margarete@Waterboards; Carl Morrison; Gary Stern; Michael Lightstone; Rick Lodwick; Zlatunich Thomas; Darcie Collins; Amy Hutzel; DeborahHirst; MattGerhart; SandraScoggin; Lester McKee; Robin Grossinger; Alan Launer; Jean McCown; Laura Jones; Philippe Cohen; Tom Zigterman; Matt Stoecker; SallyTomlinson; Judy Sheen; YvonneLeTellier; Alicia Torregrosa; Riley, AL@Waterboards; Sweeney, Caitlin@Waterboards; Krebs, Jennifer@Waterboards; Bernardo Huerta
Subject: Notice of Availability - San Francisquito 'Bay-101' DEIR and public hearings

Dear Interested Parties:

On July 30, 2012 The San Francisquito Creek Joint Powers Authority (JPA) released a Draft Environmental Impact Report (DEIR) for the 'Bay-101' flood protection, ecosystem restoration, and recreational enhancement project on San Francisquito Creek between Highway 101 and San Francisco Bay. This project is the first of a series being planned and designed by the JPA to provide comprehensive flood protection, ecosystem restoration, and recreational benefits to the communities surrounding San Francisquito Creek, and, when implemented, will enable future upstream improvements between Highway 101 and El Camino Real, including the modification of several in channel constrictions such as the 101, Newell, Pope-Chaucer, and Middlefield Bridges. The document is available for download at www.sfcjpa.org. Hard copies are also available for public review at Palo Alto City Hall and at the Palo Alto Main Library. The JPA will host two public hearings, on **August 15, 2012** and **August 29, 2012** at 6:00pm in the East Palo Alto City Council Chambers. Comments on the DEIR may be given at either of the two scheduled public hearings, by mail to the SFCJPA, Attn: Bay-101 DEIR, 615-B Menlo Ave, Menlo Park, CA 94025, or by email to jpa@sfcjpa.org. Comments on the DEIR must be sent to the JPA by **September 13, 2012,** the end of the 45-day scheduled public comment period.

Kevin Murray
Project Manager
San Francisquito Creek Joint Powers Authority

SAN FRANCISQUITO CREEK JOINT POWERS AUTHORITY

FLOOD PROTECTION PROJECT

PUBLIC HEARING

ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

WEDNESDAY, AUGUST 15, 2012

6:20 P.M.

EAST PALO ALTO GOVERNMENT CENTER, FIRST FLOOR

2415 UNIVERSITY AVENUE

EAST PALO ALTO, CA 94303

REPORTED BY: FREDDIE REPPOND, SHORTHAND REPORTER

A P P E A R A N C E S

FOR THE JOINT POWERS AUTHORITY:

LEN MATERMAN

KEVIN MURRAY

FOR ICF INTERNATIONAL, PROJECT CONSULTANTS:

MATTHEW JONES

JENNIFER ROGERS

FROM THE PUBLIC:

ROBERT ALLEN

NANCY EDELSON

BOB GOMEZ

DENNIS PARKER

ANNETTE ROSS

--oOo--

SFJPA DRAFT EIR PUBLIC HEARING 8/15/2012

[The project presentation and public comment period began at 6:20 p.m.]

MATTHEW JONES: Hello. Welcome. This is a public comment meeting on the draft environmental impact report for the San Francisquito Creek Joint Powers Authority Bay-to-101 Flood Control Project. My name is Matthew Jones. I work for ICF International. We are the environmental consultants to the JPA and we have been tasked with analyzing the potential environmental effects associated with this project.

So what you've received, as you came in and you signed in, is a brief agenda that has some information about where you can get more information. You can actually pull up and read the EIR. And a comment card. Part of this process is to receive public comment on what's in the EIR and on issues surrounding the project and people's concerns associated with construction and operation of this facility.

And as I said, we're going to give a brief presentation here. We're going to talk through some of

the elements of the project, what the project is being designed for, what it's going to do, and a brief overview of what the results of the draft environmental

impact report were and some of the impact conclusions that were reached.

And this is really for us to hear you talk. The hope is that we can talk very quickly and give you a brief sense of what's going on and what we're doing. And then you can provide us with feedback on the project and hopefully go back, be able to go to one of the libraries, pull it up online, and actually read the report and provide for substantial comment from there.

And as I said, my name is Matthew Jones. I'm joined today by Len Materman, who is director of the Joint Powers Authority; Kevin Murray, who is the project manager with the Joint Powers Authority; and Jennifer Rogers, who is an outreach consultant with my firm.

And with that I will turn it over to Len to talk about kind of the overview of the watershed itself and the problems that have led to this project.

LEN MATERMAN: Thank you, Matthew. Welcome. And please get up and get food and drink during this meeting, if you feel like it.

The Joint Powers Authority is an agency of

the three cities -- East Palo Alto, Palo Alto, and Menlo Park -- San Mateo County, and the Santa Clara Valley Water District, which is a government-wide

agency in Santa Clara County. And I'll go briefly over the context where this project fits within the work of the Joint Powers Authority and the activities on the creek.

The watershed -- this is San Francisquito Creek. To orient you, the foothills are up here. Portola Valley, Woodside, Stanford University, and San Francisco Bay is down here in this image. The watershed is the area that's completely outlined in yellow. That, combined with the floodplain, is about fifty square miles. The watershed is basically the area that collects the water that goes into San Francisquito. And the floodplain is the area that, in a so-called hundred-year event, water would exit the channel. That's the farthest downstream area where we're standing, as well as in Palo Alto. As I said, the Joint Powers Authority was started by three cities and two county-wide agencies. It was formed in 1999 following a floodplain in 1998 which was the so-called flood of record; and flooding occurred in Palo Alto and East Palo Alto and Menlo Park at that time.

The objectives of the JPA are to protect the

communities from flooding, to enhance environments and recreation opportunities, as well as support the natural function of the creek and provide emergency

response agencies with information to improve their work.

In this image it's the opposite of what we saw before. The Bay's out there. This is Highway 101. This is the floodplain area only; and this has essentially two different floodplains. There's a tidal floodplain of water coming in from the Bay. There's also a floodplain of water exiting the creek. In this image the areas in dark blue are just areas that are impacted by water exiting the creek. The areas in green are just the areas impacted by tidal flow; and areas that are purple are areas that are both.

So here's the creek. It runs under Highway 101 and then cuts between Palo Alto and East Palo Alto as it heads to the Bay. On both sides of the creek, in the area that this project concerns, there are primarily in both the tidal creek floodplains, which is important for the work that we're doing.

As this slide goes forward, you'll see the first project is here. And the goal of the project would be to take these areas out of the creek

floodplain at the same time that there's a hundred-year tide and twenty-six inches of sea-level rise. But the areas adjacent to the creek will still remain in the tidal floodplain because tidal waters would come from

the areas outside of the project, from the Bay, into these neighborhoods.

So as you'll see, Kevin will advance the slide. And when we build the project down here, the area becomes just green, meaning it's just tidal floodplain.

Moving farther upstream, the JPA is in the planning and design phases of projects between 101 and El Camino to address the flooding concerns up there. These projects include modifying the bridges and removing structures from within the channel. We're also looking at building floodwalls or a bypass channel to provide a substantial level of protection. Finally, the JPA on the San Mateo side is looking at the coastal levee system and the Santa Clara Valley Water System is looking at a coastal levee system to protect the areas from this tidal-flooding issue I discussed.

So the project schedule is we are in the middle of the comment period. This is the first public hearing; and the comment period closes on September 13th. Our anticipation is to then bring the document

to our board for certification in mid-October and construction to start as soon as possible thereafter. We're still kind of working out the details on that, assuming that the document is certified, of course.

Okay. So actually I'm handing it back to -- oh, actually I'm going to keep going for a while. So I'm going to describe some of the kinds of specifics of this project.

This is what we call the Bay-to-101 project because it extends from the Bay to Highway 101. And, again, the objectives of the project are to eliminate this area from creek flooding -- hundred-year creek flooding, the so-called hundred-year flood, which is a very substantial flood and that we haven't seen yet. But that's the basis of the federal government determining who would be required to pay flood insurance. So we're trying to eliminate the area here from hundred-year flooding at the same time as a hundred-year tide, which is a very large tide, and at the same time as twenty-six inches of sea-level rise. The twenty-six-inches figure was determined because that's the most extreme scenario for sea-level rise in fifty years; and the life of this project once it's built would be anticipated to be a fifty-year life span.

The mechanisms to achieve that so-called project elements are to lower the levee between the

creek and the Palo Alto Baylands, which is on the north side of the channel, so that in high flows the water

would exit the channel and go into the Baylands, which, of course, it used to do before the levees were built about 75 years ago.

The other element includes widening the channel here by building a new levee on the Palo Alto side that's within the current golf course and rebuilding the levee on the East Palo Alto side. And by moving the levee towards the golf course, we widen the channel and increase its capacity.

Other elements include building new flood walls, which are in the orange/yellow-dashed area here. The reason we're proposing floodwalls here rather than levees is we don't have the geographic area to widen the channel because of the constrictions of homes and structures on the other side of the site of where, of course, with the golf course we have this situation where there's the course. So we can't reconfigure the golf course as part of the movement of that levee. We are creating approximately fourteen acres of new habitat. And this would be what I call high-value marshland which is important to the critters, especially the endangered critters that call this area

home.

And we're improving new recreational facilities, trails, and areas for interpretive signage

and reflection by members of the public that recreate in this area, people who walk and bike especially. Other benefits of this project allows for additional work upstream. It allows PG&E to upgrade their utilities which are very significant in this area. What they call the most important gas-transmission line on the Peninsula runs up under the creek right here. They also, of course, have electric transmission towers and kind of a network of electrical transmission and poles.

The final benefit is the Palo Alto golf course that gives the City of Palo Alto the opportunity to reconfigure the golf course.

Okay. So the typical cross-section, Highway 101 to the Baylands Athletic Center. This is the area of floodwall. And basically what's going on is the creek channel remains in the middle. What's built above it at a certain elevation is called marshplain. And that's again an area that is of high environmental value and it's an area that would receive daily high tides. And so that kind of constant action allows certain species of plants to grow and creates good

habitats for the species of animals that we want to create good habitat for.

The daily high tide is this dashed line here.

In a hundred-year tide, the flow would be significantly greater and so it's represented by this kind of dotted line and it would go up to what -- the design that we have is that it would go about three feet or a little over three feet below the top of the flood wall. And we need those three feet, according to the federal government, FEMA, in order to certify these levees as ones that would provide the hundred-year protection and thus again make those properties eligible for getting out of the flood insurance program when we do the tidal protection as well.

So moving on, here's a cross-section from the Baylands Athletic Center to the Friendship Bridge. So the golf course is on this side, East Palo Alto homes here, and this is now a leveed area as described in the previous slide. So the daily high tide would be at this level; and again it would kind of provide a new transfer of plans there. And the hundred-year flow with a hundred-year tide and sea-level rise would be at this level. So, again, contained within in the new

levees on both sides.

Okay. And in the Friendship Bridge area, specifically we are keeping the Friendship Bridge. And here is the footing to the Friendship Bridge on the Palo Alto side. And because the channel will be

widened here because the levee will be moved out into the golf course, we're designing a boardwalk to take pedestrians and bicyclists from one side to the other. So if you were on the East Palo Alto side you would walk over the existing Friendship Bridge. You would get to the Friendship Island and you would continue on the boardwalk to the Palo Alto side and, again, along on the golf course in the other direction. It's over here that we intend to build some kind of a platform at the end of the boardwalk, some kind of signage and interpretive materials about what people are looking at. And we're also working on the possibility of creating a similar experience with different information on the other side of Friendship Bridge.

UNIDENTIFIED SPEAKER: Does that say a widening of 200 feet?

LEN MATERMAN: No. Well, yeah. Almost 200 feet from one end of Friendship Bridge out to the new levee at that point. That's not the widest point in the whole area in terms of widening.

Could you go back and I'll show you what I mean by that comment. So you see the levees are the

purple lines. And the area right here is about the widest point of the whole channel. We're widening it from here to there, but this area is widened less than

the other area. All right.

So in terms of habitat improvement and recreational opportunities, we are going to increase tidal and marsh habit, as I mentioned, within the channel; about fourteen acres of new marshland; and about four acres will be converted marshland, but it will be improved from what exists now. We're providing greater connectivity between the creek and the Palo Alto Baylands to the north of the creek -- it's also known as the Faber Tract -- enlarging the creek/baylands interface, as I just talked about; providing increased access to trails, educational signage, and designated areas where the cities, especially the City of East Palo Alto, could establish pocket parks, which is part of their Bay access master plan.

Construction details. I'm actually going to turn it over to Matthew for this to talk about kind of -- this is getting into now what the EIR determined and asking him to talk about the construction details.

MATTHEW JONES: So I will get into the analysis of those elements a little later. Part of what

they've done in terms of coming up with the design for this project is coming up with the kind of construction details, how you build it. Obviously, you can imagine

building a major flood control project within an existing built-out community is a fairly substantial effort. Part of that includes identify the routes with which the trucks will have to get to the site. As was mentioned, the levee on the East Palo Alto side is being rebuilt. And there's an assumption that they can use -- quite a bit of that material is good for the rebuilt levee and they will be able to reuse that material. However, it will be tested as they start deconstructing that levee to ensure that it's capable to be reused to rebuild the levee. As it is there's going to be a significant amount of truck trips coming into the area bringing the equipment that you would use to do the construction effort and bringing the dirt in that would build these new levee facilities and carrying away any levee material that would have to go away. These are the primary routes that have been identified to get to the project, kind of coming up Pulgas, coming down Camelia Road, and then to Verbena and out to Daphne, or coming down O'Connor Street and coming out at the pump

station. And also, hopefully, the JPA intends that the primary access point for the project will be Geng Road, as that would not be going through residential areas. But all of these are potential routes that trucks could be going down.

And as the JPA moves from this design effort to actually constructing the project, they would be working with the cities of East Palo Alto and Palo Alto to determine traffic plans for how trucks would actually get to the site when they would be allowed to go and how they would be set up. As it says here, based on both regulations of the City of East Palo Alto and Palo Alto, they can only have construction hours Monday through Friday, 8:00 a.m. to 6:00 p.m., in order to not be disturbing residents in the evenings. And as far as construction timing is concerned, the hope is that they would begin at the end of this year, early next year, and that the project would be built between now and 2014, over the course of a two-year period, roughly.

So now I will talk about kind of our piece of the puzzle. The California Environmental Quality Act requires the JPA to analyze the potential environmental effects associated with this project. Part of that includes a fairly significant outreach process. We

went before the communities of East Palo Alto and Palo Alto about a year ago. And you can see that this is a meeting we had at the East Palo Alto Senior Center at that time.

Just to note that last bullet there, as the

JPA represents a number of communities and agencies, they're handing the CEQA. They are what's called the lead agency for this analysis. In lieu of all those agencies doing their own documents, they are doing the document for those member agencies.

So this is the cover of the environmental document that is now public and available for review at the local public libraries in Menlo Park, Palo Alto, East Palo Alto, and available online at the JPA's Website. What it does is it describes kind of the purpose and need for the project; the purpose and need being, as Len described, the flooding issues associated with the watershed. It describes the project as it's set out. This project is to build floodwalls and reconstruct levees. It discusses kind of the construction methodology, how they would build those things, what equipment they would use, and how this would be put together. What it goes through, it looks at the environmental setting and the potential impacts on environmental areas, which I will show in the next slide. And then it requires the Joint Powers Authority

to look at all possible measures to reduce or eliminate or avoid any environmental impacts on the community and the environment associated with the project. It also, because it's an environmental impact report, looks at

potential alternatives that could be considered instead of this project, including not doing any project at all. So there is a lot of material on this page, but there are a lot of sections in the CEQA document.

What we went through is a process of looking at all of the resources in the area and initially determining what resources weren't affected at all. We determined that agriculture -- obviously, not a lot of agriculture going on in this area anymore. Mineral resources. And because it's a flood-control project, is not affecting population and housing in any manner.

From there we went on and looked at resources that potentially could be impacted by the project. Those include the aesthetics, the air quality, trucks driving through the neighborhoods, the biological resources. The project is adjacent to a fish and wildlife service refuge in the Baylands.

Cultural paleontology resources. This is obviously a historic area of use. Pre-European settlement. Geology and soils. Greenhouse gasses and climate change, which is now required by the state. The potential for the project to impact hazardous

materials or to hit hazardous materials that could be released into the environment. Hydrology and water resources. Obviously, this will have an impact on

hydrology and water resources and noise and vibration association with the project. Land use associated with the project. Impacts on public services. Fires. Sewer. Water transportation and traffic. Recreation and utilities and service systems.

Through this process what the JPA determined is that we were able to come up with mitigation measures or plans or processes to eliminate or reduce almost all of the impacts associated with the project to what is considered less than significant. Obviously, there are impacts on the community; but they have been mitigated to the most stringent standard required by CEQA, except in two instances which I will now discuss.

The first is air quality. Because we are in the Bay Area there are significant impacts that exist on the air quality of the area. In addition, the project is very close to 101, which has a very high air-quality footprint in of itself. That, combined with the potential for having a lot of construction vehicles doing a lot of work in the area, suggests that this project is going to have a significant impact on

air quality. The JPA is implementing all of the regional air quality board's recommended measures for raising the age of the vehicles used in the project,

putting appropriate mufflers and other facilities on the vehicles used in the project, and using every known measure to try and reduce those impacts as much as possible. But they still do fall above the threshold for the air quality management district for nitrous oxides, which are kind of greenhouse gas precursor elements. So that's where we're at.

And what the JPA has determined is that the benefit of this project in terms of providing flood control outweigh the impacts that would occur on air quality during the two-year period that they are constructing the project. And obviously, once construction of the project ends, all of these air-quality impacts associated with the project would go away.

The other impacts to this project, which is as much a technicality as anything, is the impacts on the golf course. As mentioned, they are moving the levee onto the golf course. They are providing monetary compensation to the golf course so they can reconfigure those holes and maintain the playability of that course. But ultimately all the JPA can do is

provide that compensation that those two parties have agreed upon and then hope they implement. Obviously, we would presume that the golf course would fix their

golf course with that money, but because the Joint Powers Authority cannot guarantee that the money would be used for that purpose once it's in that agency's hands, we couch that as a significant and unavoidable impact.

And now we are to the public comment period. So what we're going to do now is that we're providing several opportunities for comment. We have a court reporter here who is recording every word that's being said and we will record your comments if you wish to voice them. Once we get through this, we will also be having an open-house period at which time you can go over and give the comment to the court reporter if you don't wish to speak in public. And, obviously, we've handed out comment cards to everybody so you can write down your comments.

So for the period when I'm going to come around, I will come around and allow you to speak your comment. And we will have some discussion. What I'm hoping for, because we have a few people here and we want to make sure that we're not too pressed for time, is that we'd like to limit comments to one general comment more associated with specifics, how the project

impacts you, but general comments on the nature and the context of the project. And then we will obviously be

around for a significant period of time, all of us with badges, to talk to individuals specifically and work through issues that are more detailed.

Okay. So who --

ANNETTE ROSS: Have you done a similar project like this anywhere?

MATTHEW JONES: Lots of agencies have done many projects like this. Flood-control expansion projects are being done by the Santa Clara Valley Water District, who is one of the partners in the project throughout the area, on Guadalupe River and Coyote Creek. So flood-control projects are not something new to the State of California.

I mean inherently this is an old flood-control project that is now no longer suitable. This is the first project of this nature that the JPA has undertaken since its formation.

ANNETTE ROSS: Have you had experience with traffic control, because that's my concern.

MATTHEW JONES: Yes. And, obviously, in order to construct this project once the EIR is certified, the

JPA has to go and get permits to construct from both of the cities. And at that point the EIR does require them to develop traffic planning in concert with both of those agencies that would allow it to be implemented

during the construction period because obviously, yes, that is a very significant concern, especially for routing trucks through the city of East Palo Alto and past residences.

Anyone else?

BOB GOMEZ: Yeah. First of all, I have several questions. I can't put them all into one nutshell. One thing that I'm concerned about is that the trucks are going to be coming into the East Palo Alto area, the town. Why not the golf course, since you're going to be working on remodeling that?

MATTHEW JONES: As I said, we have to assume that not all of those trips -- obviously, the intent of JPA is to move as many trips as possible down Geng Road and into the project through that route because it doesn't go through neighborhoods. In order to construct the project though, there's going to have to be a certain number of trips that are not going to be able to get over to that side of the creek that are going to have to provide materials to that side of the creek. As part of environmental commitments to the project,

they're trying to not impact the low flow and driving vehicles through the low-flow channel as much as possible. So inherently there are going to have to be some trips, but obviously the intent is to try to do

everything possible down the Geng Road corridor because, obviously, you're not affecting residences.

BOB GOMEZ: What about Cooley Landing? How would that affect Cooley Landing?

MATTHEW JONES: I would anticipate it wouldn't have any material effect on Cooley Landing other than temporary disturbances in people trying to get out to that facility in terms of traffic.

Okay. Other comments?

NANCY EDELSON: When this project was presented to the Public Works Commission, it was -- let me ask the question first.

Nancy Edelson, East Palo Alto.

When it was presented, it was presented how you said, the levees' being reinforced and widened on both sides of the Friendship Bridge and also the levee being reinforced underneath where you're building the boardwalk. Then the other plan was to deconstruct, tear down the levee opposite the golf course where it takes a turn after Friendship; am I correct?

MATTHEW JONES: Partially correct. If you want to finish your question or do you want me to --

NANCY EDELSON: Well, it's my understanding that -- well, you said that the levee will be torn down or reconfigured in a way so that the creek will flow out

into the Baylands right there -- the wetlands.

MATTHEW JONES: Yes, with some details I can share, but --

NANCY EDELSON: So the concern of the Public Works Commission was that, if you configure it like that, then all that water going into the Baylands will be a threat to the homes that are east of the Friendship Bridge in East Palo Alto, because the levees that protect the Baylands from those homes are not in great shape. So we were told that after you do the project then you will study those levees that are protecting the homes in the gardens from the Baylands. So it was our concern and it's my concern that as part of the project you include the reconstruction of the levees that are east of the Friendship Bridge that protect the city of East Palo Alto from the Baylands.

MATTHEW JONES: I can say a few things and then I'll probably bring Len in here.

So in terms of the project itself -- I will come over here. The area that the engineers are degrading the levee is so the levee is going to come around and there will be a remnant spur coming around

this way, around the edge of the O'Connor pump station.

Part of that -- so we are degrading the levee through this reach. Water would spill over. The engineering

consultant that the JPA has brought in has determined that there would be some additional water that would come into that that is going to raise the level of the water against these back levees about two inches at this point and then decreasing as you go down the length of this levee. Because you're putting in the spur and because this Faber Track naturally is draining bayward and because in reality this is only being accessed slowly at the highest flows, most of the water is moving away from the levee.

Also, one of the things, as part of this project -- this project is part of a holistic package that the JPA is working on for the watershed. At the time this project is constructed, because of all of the bridges upstream which are still pinch points, the amount of water that would cause that impact won't occur until you fix all of the other bridges upstream. So it would only be at that cumulative point at which the JPA has built all of their facilities would that maximum flow come down that would generate that impact.

And so, Len, do you want to add something

here?

So part of that package and part of the JPA's work is including, as Len mentioned, those Bay tidal flooding levees; and those do need to be improved as

part of the holistic package for the watershed.

LEN MATERMAN: I actually think that was a pretty good summary.

The JPA with the support of the City of East Palo Alto, which actually is the City providing the lion's share of the local match, will begin the investigation of that particular levee and of all Bay levees around East Palo Alto, I would say, about the end of the year, beginning of next year. But the two most important points are the maximum, after all the JPA projects are done, that our consultant found that the additional water that could be put on that levee is about two inches of additional water surface elevation.

And, most importantly, at the point at which if it's found that there is an impact two inches or beyond two inches on this levee from this project, the point at which it becomes real, that impact is the point at which we do this work upstream. And so what we are planning on is incorporating this work that will be starting the investigation and planning and design and environmental review of this levee starting, as I said, around the end of the year, beginning of next year,

incorporating that into the projects that are on the creek upstream, because that's when it would make sense to do this -- we can do it any time. We can do it

sooner if we have the money. But the point at which we have to do it, we believe, is when these projects allow all the flow down here that could then in turn impact that levee that you're concerned about. Does that make sense?

NANCY EDELSON: Yeah. But my concern is just that at the same time that you're configuring everything -- my concern is that it's happening at the same time, not just to maybe build up those levees to East Palo Alto, but to make sure that they're safe, they're doing their job.

LEN MATERMAN: Absolutely. And as I said, we'll be beginning investigation shortly. This is based on a grant that we were notified about a month ago from the State of California, again with East Palo Alto's support. When I said we will be doing evaluation, it's the evaluation of those levees to see what condition they're in right now. So it's not just increasing the height of them; its turning them into certifiable levees

that the federal government can then say, Okay, this is a real levee that's going to do its job. Right now I think most people believe that it's not a real levee that will do its job.

BOB GOMEZ: I'm not too worried about the golf course, but I can't see how this is going to help Palo

Alto with the new levees if you don't utilize more of the golf course land. So can you maybe redirect the flow of the water more into the golf course instead of East Palo Alto?

Another thing --

LEN MATERMAN: I guess what I would say is what we asked our consultant -- and it's not the ICF consultant -- our design consultant to do was to design a project that could accommodate a hundred-year creek flow, which is the maximum flow that anyone has designed these projects to do here in the Bay Area with the sea-level rise in a hundred-year tide, which is a very extreme kind of scenario because we've never seen any of those three things; and to see them all at the same time is something that would be highly unusual. Possible in fifty years, but highly unusual. So what we said to the consultant is, Design a project to accommodate all of that water that's in the creek and they pushed the levee out far enough into the golf course to design that

particular scenario and to protect both sides from that particular scenario. We looked at other options that included, let's say, a more kind of aggressive use of golf course for flood control. But the golf course, like many parts of East Palo Alto, is below sea level in many places. And so the idea of sending water into the

golf course and then figuring out how to get it out of the golf course in a timely fashion while more water is being poured into the golf course, that created a big problem.

And if you think about it, the golf course is open land. A lot of people place value on that land. But around the golf course is a lot of businesses, an airport, all kinds of facilities, water-treatment plant. And so it's just, okay, there's this very large open green space that maybe we could use for flood control. Once water goes into the golf course there are other spaces that may be -- they're certainly not open space, but they're used by businesses and water treatment, et cetera. So we needed to find a way that didn't result in the periodic flooding of the golf course. And we asked our consultants to design a project that would allow us to do that and they moved out the levee as far as they needed to accommodate that.

BOB GOMEZ: Like I said, I'm more concerned about East Palo Alto.

In your planning, is there going to be any

digging making the runoff deeper and maybe not -- to make it deeper and wider? In a way this is the same thing more or less that the Chicago River back in

Illinois had the problem with too.

KEVIN MURRAY: I'll speak to that a little bit.

One of the project design elements that we didn't talk a lot about tonight is to excavate the deposited sediments that are currently in the channel to maximize the area, to maximize the geometry of the cross-section. You might want to go back to one of those slides.

MATTHEW JONES: Absolutely. I think you may remember when Len was going through and discussing the project elements, he was showing that first line of the daily tide going up onto the benches. In order to get those benches, you do have cut that fill that's accumulated in the channel over the years down to what is kind of a mean daily high tide. That has some environmental benefits associated with the project; and obviously it increases the flood-control capacity of the channel such that it creates a more stable channel, a more -- a channel with a greater longevity and less maintenance requirements.

LEN MATERMAN: Just to follow up, because you did use the word "dredging" and I want to make sure that there's a distinction between excavation and dredging. In the cross-section the current levee occupies a space

like this. And we would be excavating those sediments to allow for additional capacity for the creek to move through the channel. Now, if you dig down deeper, that would be what most people would consider dredging. If you excavate those below sea-level sediments, we find that those tend to reestablish. In other words, they're replaced very quickly. And so that material comes back as soon as the Bay brings in high tides. So you don't really effectively increase your capacity by digging down deeper. But the areas above that tide level we can certainly eliminate from that level and out. That's part of the project.

MATTHEW JONES: I want to provide other people the opportunity to comment. And if we have a little bit of time, obviously, we are going to be here after the comment period to take further questions. So any additional comments?

DENNIS PARKER: Dennis Parker. I just wanted to verify that the hydrologic monitoring for the Faber Tract was within a frame of reference of the

hundred-year tidal flow and sea-level rise, the calculations that yielded the two-inch increase.

MATTHEW JONES: Yes, it is the hundred-year fluvial event at the same moment as the hundred-year tide with twenty-six inches of accommodated sea-level

rise over the life of the project. So it is all of those factors happening at the same moment.

DENNIS PARKER: Is that constant through all of your modeling?

MATTHEW JONES: Yes. You're always looking at -- as that is the design capacity that the engineers are building for, that is always the most extreme thing you want to model, that it is what you're building this thing to actually accommodate.

ROBERT ALLEN: Robert Allen, East Palo Alto.

One of your diagrams showed the elevation for the new levee for the golf course seemed to be higher than the other side of the Friendship Bridge.

MATTHEW JONES: Because the way the levee is aligned and the way the flow moves down, so obviously when you're doing a modeling of the flow, two points that are seemingly opposite each other or the same points of each other in that cross-section may not be the actual cross-section of where the flood flow is at that point. And we have been trying to work through that in a way that doesn't create an issue where people

think there's a perception. The engineers are the same people doing the flow model and the ones doing the design of this project. And they are ensuring that at every coincident point where you have a certain height

of flow, you have an equivalent height of levee. So there are some small differences based on the stationing and the engineering of the drawings, but they have modeled this to ensure that you have protection at every point for the entire reach of the project.

ROBERT ALLEN: Wouldn't it be more important to protect the housing on the East Palo Alto side than the golf course? And so why wouldn't the levees be higher on the East Palo Alto side?

MATTHEW JONES: Because the Army Corps of Engineers' requirements say that you have equivalent heights on both sides. And that's just a matter of course so nobody can build a project that does the opposite or that could build a project that potentially -- you want that equivalent protection on both sides; and that's part of the Corps' standards.

ROBERT ALLEN: Or equal damage on both sides.

MATTHEW JONES: As you would say.

But in addition to that design flow -- on top of that design flow throughout the whole project there is additionally three feet of Corps-mandated freeboard

above that design elevation. Then once you get to Friendship Bridge, because it's a bridge structure, the Corps mandates four feet of freeboard at that point. So there is significant additional freeboard above and

beyond that design elevation.

ROBERT ALLEN: What's freeboard?

MATTHEW JONES: It's freeboard. It's extra space that the Corps requires you to do in order to make sure that if you got it a little wrong, you got some room to play with.

Additional comments?

ANNETTE ROSS: Is there any impact on the airport? Nothing is happening -- just around the golf course, but nothing around the airport?

MATTHEW JONES: No. And the airport is still theoretically subject to tidal flooding. The elevations that they've designed will obviously take them out of the fluvial plain, but the fluvial plain, by the time you get down to the airport, really isn't the dominant factor. The dominant factor is the tides. And, obviously, that would need to be taken care of at the point that the JPA does those tidal-levee projects. But this project, the effluvial doesn't do anything for the airport.

DENNIS PARKER: Dennis Parker again.

I think you may want to do more public outreach on this perception of one side being higher than the other, because at this point a lot of people in East Palo Alto feel as though the golf course side

is higher. And I know it's difficult to site across the turn of that, but the perception, especially with the riprap or whatever it's called, where you have the caged rocks and so forth, that erosion on one side and not the other side. The perception is that that side will maintain itself and the East Palo Alto side will settle just from the natural forces of nature.

What I'm hearing from you is there's some hydrologic forces that would cause the water level to be higher or lower, not necessarily aligned with the natural height or the perceived height. But that is a selling point, because at this height a lot of East Palo Alto people feel as though the golf course side will never flood and the East Palo Alto side will always flood because of what appears to be a difference in the height of the levee.

MATTHEW JONES: I would say one thing. In order to get this certified and in order for the JPA to get their money back from the Feds, eventually they have to do that. They have to provide equal protection at every point. They can't get this done without doing it.

It's a requirement. And as the engineers responsible for designing this project can be held liable for the design, there's no way they would do that. Their licenses would be on the line.

BOB GOMEZ: One more.

Mr. Jones, as you probably know, there's a study on utilizing well water here in East Palo Alto. And I just wonder whether that would make any effect on the quality of the water that's already in there in the wells.

MATTHEW JONES: No. There would be no effects on water quality per se. The flows that are coming down the creek now are the flows that will be there in the future. There was an analysis done of potential contaminant sources that could be hit once you start excavating; and there were no material issues encountered.

Additionally, as they are pulling out these sediments, they are going to continually be doing random testing. That's part of what they have to do to ensure that they still can reuse that material when they build those levees.

So with that, unless we have any final comments, I'll going to close out the public comment period. I want to thank all of you for coming tonight

and commenting on this project. And if you have any additional comments or didn't want to speak them out publicly, you can go over and talk to our court reporter and give your comments to him. You can also

fill out the comment cards and return them to Jennifer or you can email. On your agenda is Kevin's email address; and you can email any comments at any time.

JENNIFER ROGERS: You can leave them right there in the basket.

MATTHEW JONES: And take food. Thank you.

[The public comment period ended at 7:10 p.m.]

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CERTIFICATE OF REPORTER

I, FREDDIE REPPOND, a duly authorized Shorthand Reporter and licensed Notary Public, do hereby certify that on the date indicated herein that the above proceedings were taken down by me in stenotype and thereafter transcribed into typewriting and that this transcript is a true record of the said proceedings.

IN WITNESS WHEREOF I have hereunto set my hand on this 24th day of August 2012.

_____

FREDDIE REPPOND

SAN FRANCISQUITO CREEK JOINT POWERS AUTHORITY

FLOOD PROTECTION PROJECT

PUBLIC HEARING

ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

WEDNESDAY, AUGUST 29, 2012

6:24 P.M.

EAST PALO ALTO GOVERNMENT CENTER, FIRST FLOOR

2415 UNIVERSITY AVENUE

EAST PALO ALTO, CA 94303

REPORTED BY: FREDDIE REPPOND

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A P P E A R A N C E S

FOR THE JOINT POWERS AUTHORITY:

LEN MATERMAN

KEVIN MURRAY

FOR ICF INTERNATIONAL, PROJECT CONSULTANTS:

MATTHEW JONES

VALERIE HOLCOMB

FOR THE CITY OF PALO ALTO:

JOE TERESI

FROM THE PUBLIC:

SHANI KLEINHAUS

BERNARDO HUERTA

--oOo--

SFJPA DRAFT EIR PUBLIC HEARING, 8/29/2012

[The project presentation and public comment period began at 6:24 p.m.]

MATTHEW JONES: Hi. My name is Matthew Jones. I'm with ICF International. We are the CEQA consultant for the JPA on this flood-control project. And I want to welcome you to our public comment meeting on the draft environmental impact report. So we've had a bit of an open house. We are going to do, we hope, a fairly quick and succinct presentation; and then we're going to open up the floor to comments on the project or full comments on the EIR, if you've had a chance to read it yet. We have a court reporter in attendance who's recording everything. So if you want to get your comments heard that way, we're recording them. We also have the comment cards that we've given to everyone to fill out, if you feel like doing it that way. And we have also, on the agenda, provided an email address to which you can send comments to Kevin Murray, who's the JPA project manager, by email or regular mail.

So I think we're going to go ahead and just jump right into this quick presentation. Really, this

presentation, like I said, is going to be quick. The point is to hear your comments on the project, not for us to speak interminably. We're going to quickly go

over what the JPA is all about and their mission, some of the project elements, some of the conclusions, just a brief overview of the conclusions of the environmental impact report, some of the methods we used to assess it, some of the mitigation measures, and then we're going to open it up for comment.

Like I said, my name is Matthew Jones. We have Len Materman, who is the director of the Joint Powers Authority, here today to speak; and Kevin Murray, who is the project manager for this project; and then myself and then -- not Jennifer Rogers this evening -- Valerie Holcomb is our outreach person with our firm.

With that, I think I'll hand it over to Len.

LEN MATERMAN: Thank you, Matthew.

Okay. I'll try to quickly go over what this is all about, how we got to this point.

San Francisquito Creek has a watershed that is in the faint yellow outline here. It's about forty-six square miles. And in addition to that, there's a floodplain in the area closest to San Francisco Bay that is approximately forty square miles.

And the San Francisquito JPA is composed of San Mateo County; Santa Clara Valley Water District; and the

cities of East Palo Alto, Palo Alto, and Menlo Park.

And so we work on projects related to the creek and now we're going beyond the creek to work on other kinds of projects that these jurisdictions have in common.

So here's the members of JPA, as I mentioned. Our objectives are to deal with flooding, enhancing environment, and create recreational opportunities to build connectivity between these communities, support the natural functions of the creek, and provide some benefit regarding emergency response. The creek and the Bay create floodplains. And the areas in blue here are floodplains created by the creek alone. Areas in green are the areas that are just in the Bay one-hundred-year floodplain. The areas in purple are in both floodplains.

And we have a series of projects that were in planning and design in collaboration with some of our member agencies right now. And this project right here is the one closest to the Bay. Here's Highway 101. San Francisco Bay is out here and what you'll see when Kevin advances the slide is that the outline of the project will occur, which is the orange levees and floodwalls; and that will turn this area from an area that's influenced by the Bay hundred-year floodplain

into -- I'm sorry -- an area that's influenced both by the creek and the Bay into an area that's now green,

meaning that it's just influenced by the Bay and it sits within the hundred-year floodplain on tidal courses.

And other projects we're looking at include -- the yellow circles are bridges, Highway 101, Newell Road, University Avenue, Pope/Chaucer/Middlefield Road. City of Palo Alto is working on the Newell Road bridge project right now in terms of design and environmental review. Caltrans is designing a new 101 crossing over the creek. And Santa Clara Valley Water District will shortly be engaging a consultant to design the Pope-Chaucer bridge. When those projects are done, those won't meet the hundred-year protection level; and so none of the colors change on this image. But we're also looking at projects that would address the hundred-year flood concern and that would get rid of the creek floodplain and turn everything into just a coastal problem. And the scenarios for that are floodwalls or underground bypass channel or upstream detention.

Then finally we're also working on the Bay levees, which is a flood-protection ecosystem project. The JPA is dealing with the project north of the creek channel up to Redwood City; and the Santa Clara Valley

25 Water District is working with the City of Palo Alto to

address the issue on the Palo Alto side.

So the project schedule. We're within the comment period right now. We have another couple of weeks. And we plan to certify the EIR -- if everything goes according to plan, we plan to certify it on October 11, meaning our board would certify it at a board meeting. And with construction to start in kind of the early phases this fall, but really get going in the spring of next year. That's the plan.

So the project overview. Project objectives are to protect against the hundred-year creek flow at the same time as the hundred-year tide and at the same time as the fifty years of sea-level rise, which for our criteria meant twenty-six inches, a fairly extreme scenario for sea-level rise. To do that, we plan on lowering the levee between the creek and the Faber Tract. This is called the Faber Tract, or Palo Alto Baylands. It's part of the Don Edwards National Wildlife Refuge.

So we'd lower the levee here between the creek and the Baylands. We also build a new levee on the East Palo Alto side here and we build a new levee on the Palo Alto side that is within the golf course as it currently sits; and that would increase the width of

25 the creek channel. And then down here, where it's kind

of red and yellow, that would be an area where we build floodwalls because we're constrained by the buildings on either side -- the homes on the East Palo Alto side and the International School, post office, et cetera, on the Palo Alto side.

And some of the project elements. We would create about fourteen acres of new marsh habitat and basically build new trails on top of these levees and connect into the Bay Trails system. Other benefits are that it allows for work to be upstream, such as the bridges I previously talked about; and that PG&E will update their facilities and Palo Alto will build a new golf course and athletic fields in conjunction with that, according to the plan that was approved by the Palo Alto City Council.

So to look at the cross-section in the areas where there are floodwalls. Basically, this is post project. There will still be a creek channel in the middle; and the sides of the channel will be a marshplain that's at an elevation that it gets daily tide action. So when there's a high tide and the water level is up here, this area will be kind of subject to Bay water. And at a hundred-year tide, the water level

would be up here; and it would still be three feet to the top of the floodwall. And that three feet is

necessary to get people out of the flood insurance program on both sides of the flood walls. That's called freeboard. Then in the levee areas, it's a similar situation, where there's a low-flow channel surrounded by marshplain that is subject to daily tides. And when there's a hundred-year flow with a hundred-year tide and sea-level rise, it would still be three feet below the height of the levees.

In the Friendship Bridge area our plan is -- this is the Friendship Bridge as it currently exists. And we would keep it there. This is the East Palo Alto side. And currently this is the levee right next to the levee that's at the Palo Alto side of the golf course. Because the levee is moving into the golf course, as I mentioned, we would build a boardwalk between the new levee out here and the new island -- Friendship Island -- that will still be the footing for the existing bridge. This boardwalk, even though it's shown to be kind of not straight but slightly sloped in various directions, it would actually just have a 1.29-percent grade. So it would be -- the slope will be barely noticeable.

And so there are habitat improvements and

recreational opportunities, as I mentioned; benefits for steelhead in terms of greater connectivity between

the creek and the Baylands. Enlarged creek/Bay interface to provide other kinds of benefits. We would increase access to trails and put in some new signage, new areas for stopping near the Friendship Bridge and taking a look at kind of the wildlife that's there, and some interpretive panels and accommodate designated areas for future pocket parks, mostly on the East Palo Alto side.

Construction details. So construction access. What this slide shows are the hauling routes for trucks coming into Palo Alto and East Palo Alto. Basically, the beginning point for this EIR, or the haul routes, is at the intersection of Highway 101 and Embarcadero Road. On the Palo Alto side they would come in Geng Road through the parking lot between the golf course and the athletic center and then onto the levee or into the golf course area, et cetera, that way. In the East Palo Alto side -- I can't see all the roads from here, but basically it would go up East Bayshore and then up Pulgas and then turn on Camelia and then down Verbena here or here and then here.

Remind me. That's Jasmine. Thank you very much.

And that's to get essentially through Verbena to get to the pocket park area right here at this bend

and then to go on Daphne to be able to work on the levee and floodwall on the east side. And then otherwise go up Pulgas and turn right on O'Connor to get access to this area. So those are the truck routes.

And construction will be potentially eight to six, Monday through Friday. Construction timing. Again, the plans are to start bringing in dirt this fall. I would say kind of the very significant construction activities would start in the spring and they would go through the end of 2014.

And I think that might be it for me. So I'm going to turn it back to Matthew. I think there's one more slide. I guess not. Okay.

MATTHEW JONES: I guess as we get into talking about the CEQA analysis, the JPA --

LEN MATERMAN: Can I add one thing?

MATTHEW JONES: Certainly.

LEN MATERMAN: Food and drink. So as we had two weeks ago, there's plenty of it, for people that are here, so dive in if you're hungry.

Sorry. Go ahead.

MATTHEW JONES: In terms of analyzing this, we have to conservatively assume that a large number of

trips may have to go through these neighborhoods in

order to satisfy the needs of CEQA. The JPA's intent is to try and move the maximum number of trips as possible, not in the neighborhoods of East Palo Alto, but up through the Geng Road site and accessing much of the facility through there. But for terms of the analysis, we have assumed that pretty much everything for the East Palo Alto side facility might have to come through East Palo Alto under certain conditions. And that way we're kind of conservatively assuming a worst-case scenario that is reasonable.

We'll go into the environmental analysis now. So what we're at, obviously, we're looking at things under the California Environmental Quality Act, which analyzes the impacts of the project on the built environment and natural environment. We had some scoping meetings about 18 months ago in both East Palo Alto and Palo Alto and generated comment on the project, because CEQA is really a public-facing process in order to inform the public about the impacts associated with the project so agencies can understand their impacts, share them with the public, and come to a determination on the validity and the need for a project.

So the EIR, the cover of it, is right there.

It is now available in local libraries. It's available

in hard copy at the JPA offices. It is also available online at the JPA's website. The EIR, the content of that document, is a full description of the project; what it will be like as it's built; what it will take to build the project; and then looks at the local setting, the environmental resources that exist in the community; receptors, homeowners; receptors in terms of schools and natural resources, like biological resources; and so on and so forth. Then looks at the environmental impacts of both construction and the operation -- the existence of the project on those resources and look at ways to avoid or minimize those impacts in all ways possible.

And then we looked -- it also looks at potential alternatives to that project. So when we looked at this project, the areas where there was no impact whatsoever was on area resources called "agricultural." Obviously there isn't a lot of agriculture in this area anymore. Mineral resources. There are no mineral resources within the proximity of the project. And population and housing. What that section is most about is about driving population growth for increasing the people that come into the community. And this would not generate any of those types of impacts. Resources that were impacted are

pretty much all of them. This is a major capital project and it does have significant impacts on a wide range of the environment, including aesthetics, air quality, biological resources. There's steelhead in the creek. There are salt-marsh harvest mouse and Bay tidal species that exist here. Cultural resources. Geology. Greenhouse gasses and climate change. Hazardous materials could potentially be affected. Hydrology and water resources, quite obviously, will be affected. Land use. Noise and vibration. Public services, recreation, transportation and utilities, because we are relocating some PG&E facilities, including an older gas line and electrical towers.

So in the context of this project, just as kind of a brief summary for almost all of these resources, we came up with mitigation measures as traffic plans in order to guide traffic and in order for the City of Palo Alto and East Palo Alto to communicate how they want construction traffic going to the site and other types of mitigation measures for biological resources, for air quality, and so on and so forth that reduce these impacts to what we consider to be less than significant under CEQA. That does not necessarily mean that they don't affect the lives of

people within the community, but they are mitigated as

much as possible in order to minimize that effect of the project on people and the resources within the community.

So in the end we had two impacts that we considered significant and unavoidable, meaning that we do apply mitigation measures in all of these cases to get them as low as we can, but we did not feel that they came below the threshold where they were no longer significant. The two of these are air quality. The Bay Area Air Quality Management District has guidelines for air quality. Because of the project's proximity to Highway 101, there's already a significant air-quality footprint within the area. By adding the construction trips during that two-year construction period we presume that there will be a significant and unavoidable impact on air quality, even with the implementation of the Bay Area Air Quality Management District guidelines on engines, motors, mufflers, all of the things that we could do to reduce those air quality impacts.

The other one is in terms of recreation. And this one is probably as much a technicality as anything. Obviously, the JPA, by moving the levee not

towards the community but towards the golf course, is impacting a section of the golf course. They're

compensating the golf course what they have agreed upon as a fair value for that impact. But ultimately the ability to rebuild that golf course lies with the City of Palo Alto, who manages that facility. So as rebuilding that golf course is really outside the JPA's jurisdiction, we can't guarantee that they'll do that. We would presume that they would do that, and it seems highly likely that they will. But we can't guaranteed it, so it's considered a significant unavoidable impact.

With that, I'm done talking. Well, I'm probably not done talking, but we are going to open up the floor to comments. Given that we have a smaller number of people here, usually I would try and limit the comments to one. But I think to start I will limit everybody to one initial comment so we give everyone an opportunity to speak. And then we'll open up the floor.

So who would like to go first? Who has a comment?

SHANI KLEINHAUS: I have a question.

MATTHEW JONES: Can you state your name, please?

SHANI KLEINHAUS: Shani Kleinhaus, Santa Clara Valley Audubon Society. We are on that side of

the levee.

You're showing the trail and it talks about trails on both sides. Is the trail part of the project?

MATTHEW JONES: Yes, as much as they have to restore it. It is a segment of the Bay Trail. It needs to be restored to those standards. The City of Palo Alto does have some specific guidelines for that trail and how it exists. It also does have to be used as it is now as a levee-maintenance road for the water district and other maintenance vehicles. So it would need to continue to fulfill those roles as well.

SHANI KLEINHAUS: Can I have a follow-up question?

MATTHEW JONES: Yes.

SHANI KLEINHAUS: The impact of traffic on that trail and the endangered species that they're trying to restore and other species, like the clapper rail, will not like a lot of traffic there.

MATTHEW JONES: Not typically, because we're not theoretically increasing the traffic of pedestrians. We're simply replacing a facility that already exists in kind.

SHANI KLEINHAUS: It's paved already?

MATTHEW JONES: Yes, it is. So the trail is

already there. We are not providing any new access. We are simply maintaining the access that currently exists. As such, we will be improving the facility and adding some signage and some education materials, some places to sit. But we are not increasing recreational access.

SHANI KLEINHAUS: Thank you.

JOE TERESI: Just to clarify, it's paved from the Baylands Athletic Center to the Friendship Bridge. The levee on the other side, the other parts of the levee aren't paved. That part is the official part of the Bay Trail.

SHANI KLEINHAUS: Thank you.

MATTHEW JONES: Other comments?

BERNARDO HUERTA: Bernardo Huerta, 2124 Cooley Avenue, here in the city of East Palo Alto. I'm on the Public Works and Transportation Commission. I'm the chair. I'm also on the Planning commission. We are here for the City. I've got a bunch of issues I'd like to let the community know.

For one, I was on the Public Works and Transportation Commission two years ago. I've been there for eleven years. But this project came through

and it did not include -- what we approved was the removal of the levee beyond the San Francisquito

Bridge -- I mean the Friendship Bridge. It should have been brought to us at that time, not included afterwards. Our commission had a very hard time trying to find out what it was. We don't always have enough information from our staff because they don't have enough time. To put in that afterwards is not dealing with us straight.

MATTHEW JONES: What part of the city facility was put in after?

BERNARDO HUERTA: The removal of the levee beyond Friendship Bridge down to the Bay.

MATTHEW JONES: As a CEQA consultant, the entire time I've been involved in this project, including the public scoping period, that's been a part of the project since the day I was brought into this project. It's always been. And it was brought forward during the public scoping period. I think we discussed it.

Len, would you like to address that?

LEN MATERMAN: Yeah. Public scoping was in October of 2010, right?

MATTHEW JONES: Right. So we knew about the levee degrade at that time.

LEN MATERMAN: It was about twenty-two months ago. That was part of the design of the project back

then.

BERNARDO HUERTA: It wasn't in what we got. I have that material at home. I can show it to you, but it was not.

LEN MATERMAN: I can't speak to what you received, but I can just speak to what the project is as it was presented to the public since the beginning. And so anyway we'll work that out.

BERNARDO HUERTA: I saw on it, also, there was a call for where there could be a weir there instead, just beyond the pump house as the creek turns toward the Bay, that was in it. I remember that.

And I remember previously there was an iteration of that when this -- the worries with the community about flooding began. I've seen that twice, but I did not see it in what was presented to the Public Works and Transportation Commission to degrade that levee. I think that levee should be saved. I think East Palo Alto should make a trail out of it some day in the future when these birds and mice are less endangered. To me, maybe the City of East Palo Alto should not be looking for it as far as its planning, as far as making more habitat for the clapper rail or the salt-water harvest mouse, because I don't see other

communities doing the same.

MATTHEW JONES: There's a couple of things I can clarify, possibly. For the area of the degrade, there may be some confusion of terminology, because it's not being degraded down to the exact elevation of Baylands. It's being degraded down to an elevations that is above the daily tidal prism. So it's only going to be inundated at higher fluvial events. It's still predominantly going to have that fluvial event. In that sense it might act somewhat weir-like in that the water is going to come up and spill over it. But it's not -- I guess I'm trying to clarify what we know about it. And what we have analyzed is that it's only going to be an episodic flooding into this area. And our analysis and the analyses provided to us by the hydrologic engineers is that it adds about two inches of elevation at this point. So when it does spill in, it is going to mound the water a couple of inches up against this back levee and then it starts to downgrade as it spills out toward this exit of the existing Faber Tract and into the Bay. So that's what I know.

The other thing, in terms of the trail, our understanding is that this is currently -- all this down here is part of the national wildlife refuge; and the land is owned by them. There's an existing

chain-link across the end of the trail here and that

there's nothing that can really be done on that land without consulting with the fish and wildlife, because they own it -- or they don't own it. They have some kind of easement on it.

KEVIN MURRAY: I can add to that. In 2010 when we presented to the Public Works and Transportation Commission, we were at 30-percent design. So clearly we didn't have as much detail as we do now. And we'll be back on September 10th to give a dedicated -- I believe it's going to the Public Works and Transportation and Planning Commission on the 10th.

I'm getting a no from city staff. But I know on September 10th we're coming. We are presenting to somebody. I think it's you. So we have a lot more detail now. It's time to talk this through with the specific commissions.

LEN MATERMAN: I think it might be Planning we're coming to. The reason I'm interjecting is because I don't want you to --

KEVIN MURRAY: He's there either way.

BERNARDO HUERTA: I'm not, like, against flooding the Faber Tract. I'm for it, because I jog along there. I've been jogging for thirty-four years.

And I've seen this dry up more and more over the years.

All those waterways used to be very wide. Now they're

filled in with vegetation. I think it needs a lot more water. I'm for a weir. But I would like to see the City of East Palo Alto to one day make a trail out of it, though it probably wouldn't be used -- that levee -- very much, as people going out there, because they don't use the end of Runnymede very much at all. So it would be something for the community in the future.

And like you were saying about the clapper rail and habitat restoration, not many other cities are doing this. We have the dredging of a canal right on -- just north of the levee that runs to Runnymede to the pump station; and that took us another year and a half just because of the mitigation with the harvest mouse. That's us, just the city, you know. Other cities don't have this habitat restoration for the harvest mouse or the clapper rail, because it is a planning impediment. I'm for East Palo Alto should do more if the other communities do more because it only allows us to have more problems in the future when we want to develop or anything.

MATTHEW JONES: In the context of this project, because both of those species exist in the Baylands -- and the mouse is a state not just federal;

it's a state, fully protected species -- the JPA is

required to take measures in order to protect that species. They do not have any take of that species. So part of that -- and it's part of their mandate, also, to deal with steelhead in the stream, which almost all communities -- and I'm sure the water district representative could tell you that they deal with those issues all the time -- but those are the requirements that exist within the state and federal regulatory environment; and these are measures that need to be taken that the JPA had to take in order to get the project built.

BERNARDO HUERTA: But I'm talking about adding more. It has its habitat right now; but increasing its habitat more when other cities are not increasing those specific endangered species habitat more, it impacts us more -- this community.

MATTHEW JONES: Well, increasing the habitat within the context of this project is -- a lot of the marshland that you're gaining is within the channel and that provides -- additionally, it's a benefit to both sides that you have this additional habitat and you get a significant amount of it through the project. But it also provides that flood capacity that they need in order to not have to move the levee out further. So

it's a win-win on both sides of the project. It's a

hydrological and a species win.

LEN MATERMAN: And most of that habitat is coming from what is currently golf course land, right?

MATTHEW JONES: Yeah.

BERNARDO HUERTA: You have the sixty-five-foot power poles. I guess they're going to be new power poles.

MATTHEW JONES: It's replacement of the existing power poles. One of them is being relocated.

BERNARDO HUERTA: But are they sixty-five feet? Or is that new? Are they going to be higher than they are now?

MATTHEW JONES: They're going to be a little bit. I think it's five to ten feet higher.

KEVIN MURRAY: A maximum of fifteen.

BERNARDO HUERTA: As a planning commissioner, I'm going to hear it from the community. So keep that in mind what you can do to mitigate that. I know one of them is like a grounding line for the gas line down there. So try to get that -- I mean I hoped our planning commissioners would be here to explain that to you because we get a lot of heat from people for anything.

And I am also wondering about the storm drain

outflow for the pump station here in East Palo Alto.

Why would it be dumping its water into the new canal or the --

KEVIN MURRAY: There will be no change to its discharge. It will still discharge into the creek channel as it does now, at the same place.

BERNARDO HUERTA: And I'm also worried sometimes about, when there's projects like this, we don't know what kind of signage is going to go up. We should know, hey, no horses. People do ride horses through there. And there's a place right here just in East Palo Alto that says no horses and people do have horses here in East Palo Alto. So we would like to know what the signage is going to look like.

MATTHEW JONES: I would also say it's probably important to note that for a lot of these things, like the traffic plan that will be developed, a lot of these facilities, once the JPA certifies the document, they are still going to have to get construction-level permits from both communities. They're going to have to work with the communities to finalize the traffic plan that's used during the construction period. There's a lot of things that are called for in the project that are not fully defined at

this stage that do get defined as you move into implementation of a project.

BERNARDO HUERTA: And just one last one. I have more, but I'll write to you about that. But as far as the levee that runs between Runnymede and the pump station, for it to be enhanced or rebuilt by the Army Corps of Engineers, didn't Feinstein work on that to about 2006 and then found that it was too expensive and the Army Corps of Engineers said no? And that's where we're at now, because of that. So, you know, to me, I don't think it's going to be done, because they're going to again say it's too expensive or they need to come up with a lot more money than before. But what's to stop this organization from stepping away from that when they find it's just too expensive?

MATTHEW JONES: Len, would you like to speak to the coastal levees?

LEN MATERMAN: Sure.

A couple of things. The JPA received a grant from the state. And with the support of East Palo Alto and the U.S. Fish and Wildlife Service and almost assuredly Menlo Park, we are going to be starting a project to design new coastal levees up to Redwood City from the Hunter pump station in Redwood City. And we are going to start that with an evaluation process that

will begin before the end of the year and it will go into design and review on those levees sometime in

2013, probably fall of 2013.

In terms of your question about when we actually build it and maybe it cost too much and who's to be sure that it would be built, so what we have right now is we have funding to get it to the point of construction, meaning the design and environmental review. The important thing to think about is Matthew mentioned in an extreme flow event when water is coming down the channel and exiting into the Faber Tract, remember that he mentioned that would create an additional two inches in this location and it would be kind of less of an impact as we go farther away from the creek, which you would expect. Our plan is to -- let me step back.

That condition of the high flows from the creek channel exiting into the Faber Tract commingled with the high tide and thus creating the new pressure on this levee wouldn't be realized until this project is done all the way to 101 and it wouldn't be realized until Caltrans opened up the 101 and it wouldn't be realized until we open up the bridges farther upstream.

So what we're planning is we do this project, there's still no impact here because water can't get to that location -- the excess amount of water -- Caltrans does

its project, but still water can't get to put

pressure -- can't get to those locations with that added amount of pressure. But any project that we do upstream of 101 would be tied to the rebuild of this levee. And that the impact of our work upstream of 101 would then finally be felt here, even though it's two inches.

And so by doing this project alone, there's no added harm done to this levee from what currently exists. And to be sure, this levee is not in great shape and it needs to be rebuilt. And we know that and the City knows that. Everybody knows that. What we're trying to do at the JPA is figure out what is the most efficient way to get that done. While one way is we've applied for state money and we've gotten it and we've gotten the local match to start doing design.

In terms of the construction, we're working with the City of Palo Alto on a future grant that may pay for the construction of that levee. But what we can say is that we wouldn't be doing work upstream that would actually put any additional harm on that levee until we know that we can incorporate into the upstream project that mitigation.

Does that make sense?

BERNARDO HUERTA: Yes.

And just one more question about ground

squirrels. Will there be some barrier down below underneath the soil where the ground squirrels can't cross through and maybe poke a hole to the other side?

MATTHEW JONES: I have been assured by the engineers that the compaction necessary to meet Corps standards will take care of the ground squirrel problem.

BERNARDO HUERTA: That's it for me right now.

MATTHEW JONES: Ma'am, you were at the last public meeting as well. Do you have any comments you would like to speak about?

UNIDENTIFIED SPEAKER: [indicates no]

MATTHEW JONES: I just wanted to ask.

SHANI KLEINHAUS: What type of towers are going to be raised? Are those like big transmission towers?

MATTHEW JONES: Yeah. They're the larger transmission towers.

SHANI KLEINHAUS: Can I ask to mitigate against bird strikes?

MATTHEW JONES: It's not significant contextually. I mean I understand it's an issue now.

SHANI KLEINHAUS: If you're going across the creek and increase the height, it's -- maybe. Did you study flight patterns of egrets and other large birds

over that area to determine --

MATTHEW JONES: Bird traffic through the Baylands is usually along the Bay fringe, as I understand it. And there's already pretty tall trees in that area that are as tall as or close to those towers.

SHANI KLEINHAUS: That's why I'm worried, because of those trees and because you're crossing the creek here. It's not a huge mitigation. What you need to do is a few of those round aviation balls on the --

MATTHEW JONES: Which don't fully mitigate, but --

SHANI KLEINHAUS: It helps. And it would be really, really nice, because it will --

MATTHEW JONES: I presume because of some PG&E needs they were doing a lot of that already.

SHANI KLEINHAUS: In some places where they have records of strikes they do, but you're increasing the height, which may cause a problem; and we don't know. I don't see this as a mitigation that is so expensive and outrageous that it's not good to do to be safe.

MATTHEW JONES: It's something that we can look into. It was not something that was brought

forward by our ornithologists as a significant concern.

SHANI KLEINHAUS: Well, I'm bringing it.

JOE TERESI: So you're saying when they have those balls on the wires that's so the birds don't hit it?

SHANI KLEINHAUS: Sometimes it's for aviation purposes, which is also something that can hurt birds in this area, since there's an airport. But also it's for bird strike. And usually it's for the large birds like egrets, storks, cranes -- all these guys with the long necks. And it's not really a difficult thing to do. It's not like outrageously expensive difficult maintenance, whatever. It's just put one of those balls there.

MATTHEW JONES: Obviously, we will incorporate some of PG&E's work into our process because we need to, but it is not something that has come up, to date. It's a good comment.

SHANI KLEINHAUS: Ask Mike Best at PG&E if he's got any recommendations.

MATTHEW JONES: Anything else?

Okay. What I was going to suggest is at this point we are going to open up back in open house. If you would like to talk directly to the court reporter and not speak publicly, you can feed him some comments

and he is more than happy to take them. Or you can

talk to any one of us -- Len, with the JPA, Kevin, or myself.

And thank you for coming this evening.

[The hearing concluded at 7:06 p.m.]

CERTIFICATE OF REPORTER

I, FREDDIE REPPOND, a duly authorized Shorthand Reporter and licensed Notary Public, do hereby certify that on the date indicated herein that the above proceedings were taken down by me in stenotype and thereafter transcribed into typewriting and that this transcript is a true record of the said proceedings.

IN WITNESS WHEREOF I have hereunto set my hand on this 6th day of September, 2012.

_____

FREDDIE REPPOND

-------- Original Message --------
Subject: San Francisquito Creek Flood Reduction, Ecosystem Restor.& Recr. Proj. SFBay/101
From: JLucas1099@aol.com
Date: Wed, September 12, 2012 12:45 pm
To: kmurray@sfcjpa.org

Kevin Murray
San Francisquito Creek Joint Powers Authority
615-B Menlo Avenue, Menlo Park, CA 94025

September 12, 2012

Dear Kevin Murray,

In regards the San Francisquito Creek Flood Reduction, Ecosystem Restoration and Recreation Project, San Francisco Bay to Highway 101 Draft EIR, thank you for receipt of a hard copy of this report and for consideration of my continuing concerns.

~ Any proposal to induce San Francisquito Creek to overbank into the Faber Tract in high storm flow events runs counter to previous flood flow reports and analysis and therefore it appears there is a critical deficiency in this Draft EIR in presenting such a design as the only alternative.

As technical reference please review the 1984 Hydrologic Analysis of the Palo Alto Flood Basin - by Linsley Kraeger Associates Ltd. which states "a careful analysis of the effects of time of occurrence and magnitude of the 100-year flood demonstrated that the most critical conditions occurred when the peak flow of a 100-year flood coincided with time of occurrence of mean sea level on the rising tide of the design tide cycle."

The report goes on to note that it is not uncommon to see a combination of deluge and high tide and low barometric pressure. "A composite flood hydrograph for the three streams (Adobe, Barron and Matadero) was used as the inflow flood to the Basin. It was also found that the most critical condition existed when a tide peak occurred 4 hours after the inflow peak." (The tidal cycle Plate 4, Inflow hydrograph of composite 100-year flood Plates 3 and 5).

It is these same high storm event conditions that will constrain San Francisquito Creek from alleviating peak flood flows by overbanking into Faber Tract, because the Faber Tract will already be inundated by high tides. Please include in this EIR detailed records of tide elevations during recent twenty years of high stream flows. This is critical data that must be used in levee design, either in build-up height or in lowering of levee height.

In the recent US COE Napa River flood control project EIR hydrologic analysis of stream and bay inter-tidal flow was carefully documented and resulted in an extensive wetlands holding basin adjacent to Highway 12. This was a complicated analysis which restructured land but which seemed to be supported by hard data. I do not find equivalent hydrologic data to support a 'Faber Tract alternative' that appears to be only EIR option.

In view of the Palo Alto Flood Basin's recent degradation of levee and substrata at the flood gates' structure it confirms my concern that San Francisquito Creek is bound to reestablish its historic alignment to S.F. Bay. Believe it is an accepted fact that underflow of a stream will persist in river bed gravels that were created over centuries even though its surface flows may be redirected. This was only too evident in February 1998 flood flows from San Francisquito Creek that extended to Matadero Creek and attempted exit at Mayfield Slough.

The inevitable degradation by flood flow sediment will mean ultimate loss of the Faber Tract marsh and a marsh of equivalent viability needs to be created for the endangered species of Salt Marsh Harvest

Mouse and California Clapper Rail to compensate for mitigation marsh loss mitigation in an EIR proposal alternative. Is it feasible in this location to establish an equivalent marsh with continuity of high caliber wetlands habitat? Mitigation riparian corridor and wetlands for SCVWD's Matadero Creek project will be lost in levee upgrade? EIR needs to say how mitigation requirements for all wetlands and vegetation loss will be accommodated?

Also, any alteration of the Faber Tract levee adjacent to East Palo Alto might further endanger their outboard levee interface with Bay tidal action and erosion. Are such possible impacts fully addressed in this EIR?

As an adjunct to the feasibility of San Francisquito Creek returning to its historic alignment under extreme 100-year flood flow conditions it would seem advisable for utilities along this old stream channel to pad up to at least a ten-foot elevation. In particular this would affect upgrade of the Palo Alto Water Treatment Plant.

Would it also be a conservative measure to address choke points upstream where San Francisquito Creek has historically overbanked to the southeast, in this EIR alternative, to avoid CEQA conflict in piecemealing of the project? I suggest this in consideration of an increase in estimated 100 year level of flows to 9400 cfs from 7860 cfs.

I would like to submit this comment at this time but hand deliver an extended post script with maps of 1998 flood flow and salt water flood zones, and Stanford's Lake Lagunita percolation unconfined aquifer zone.

Thank you for this consideration.

Libby Lucas
174 Yerba Santa Ave.,
Los Altos, CA 94022

-------- Original Message --------
Subject: San Francisquito Creek Flood Reduction, Ecosystem Restor.& Recr. SFBay/101 cont.
From: JLucas1099@aol.com
Date: Wed, September 12, 2012 8:32 pm
To: kmurray@sfcjpa.org

San Francisquito Creek Flood Reduction, Ecosystem Restoration & Recreation Project San Francisco Bay to #101 .....Postscript re attachments September 12, 2012

Attachment A:
California Department of Water Resources Groundwater Resources of South Bay, Groundwater Areas map depicts San Francisquito Creek historic channel to Mayfield Slough and San Francisco Bay, with watershed retention reservoirs and lakes showing Lake Lagunita as a percolation resource in unconfined aquifer zone, while Searsville Lake and Felt Lake lie over confined geologic strata. EIR 3-106 analysis is imprecise on this aspect of Santa Clara Valley groundwater resources in general and these reservoirs in particular. It needs to be pointed out Los Trancos Creek diversions to Felt Lake do not retain beneficial uses of winter stream flows in San Francisquito Creek for endangered steelhead trout to degree historic diversions to Lake Lagunita did. Also fencing at fish ladder on Los Trancos Creek is likely to impound storm flow woody debris.

Attachment B:
SCVWD 1990 map of 100-year saltwater flood zone in Palo Alto appears to follow original parameters of San Francisco Bay shoreline. This and an updated version of saltwater intrusion should be included in EIR, plus perhaps map of projected saltwater flood zone and intrusion as anticipated for bay rise in 50 years.

Attachment C
SCVWD Report on Flooding and Flood Related Damages in Santa Clara County, February 2-9, 1998 map of San Francisquito Creek flood zone appears to bear strong resemblance to contours of historic shoreline.

Not attached is drawing of Peter Coutts, Esq. Ayrshire Farm (1876 Thompson's Atlas of Santa Clara County) of 1242 acres and an historic map showing reservoir as part of extensive water features adjacent to foothills, previous to Leland Stanford's acquisition of 'the farm'. Coutts was a highly prosperous agriculturist from Bordeaux region who ran racing stable and extensive stock farm relying solely on local watershed supply.

Missing from San Francisquito Creek EIR:
Map of SCVWD Matadero mitigation riparian vegetation and wetlands impacted by project levee redesign
Map of upstream habitat that supports endangered species of Tiger Salamander and Red-Legged Frog, or Western Pond Turtle that might be washed into project area from upper watershed by winter storm flows.
Map of COE feasible super levee alignments in proposed San Francisquito Creek flood project area
September 2000, San Francisquito Creek Bank Stabilization and Revegetation Master Plan Report (This is a professional guide for best management practices along San Francisquito Creek's natural riparian corridor and needs to be referenced in this EIR. High western banks in San Mateo County erode under storm flows, while lower Santa Clara County banks overflow. 1998 emergency conditions were challenging in this regard.)

Thank you for ensuring that the San Francisquito Creek Flood Project EIR considers all impacts, avoidable and unavoidable, to this unique natural stream that still seems able to retain prime steelhead habitat.

Libby Lucas,
174 Yerba Santa Ave.,
Los Altos, CA 94022

Santa Clara Valley
Audubon Society

September 13th, 2012 *via email*

Mr. Kevin Murray
San Francisquito Creek Joint Powers Authority

Re: Draft Environmental Impact Report for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project: San Francisco Bay to Highway 101

Santa Clara Valley Audubon Society (SCVAS) is pleased to have the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the San Francisquito Creek flood reduction, ecosystem restoration, and recreation project San Francisco Bay to Highway 101 (Project.) Our organization's mission – to preserve, to enjoy, to restore and to foster public awareness of native birds and their ecosystems - aligns with the purpose of the proposed Project, and our members frequent the proposed Project area to enjoy its diverse bird and wildlife community. The following comments express concerns related to impacts on resident and migratory bird community and on endangered species, as well as requests for enhancements for bird habitats and for bird watching opportunities:

1. California clapper rail and California black rail

Lowering of the levee on the right bank (From the mouth of the Creek at San Francisco Bay to 200 feet downstream of the existing Friendship Bridge) would allow fluvial flows, depending on the concurrent tide, to overflow into the Faber Tract during storm events. Additionally the 100-year tide would connect the channel to the Faber Tract. The DEIR states that fluvial inputs could potentially result in habitat changes detrimental to California clapper rail and California black rail.

The DEIR analysis proposes that the maximum increase in water surface elevation in the Faber Tract would be 0.2 feet (approximately 2 inches) and that periodicity of inundation events would increase. The DEIR describes this increase "negligible" (page 3-49) yet provides no biological evidence or analysis in support of the conclusion that a more frequent 2-inch increase is not significant to the California clapper rail and the California black rail.

SCVAS recommends that additional mitigation should be provided to reduce the risks associated with inundation, including risk of depredation as individual rails are deprived of shelter. Please consider creating additional cover such as floating islands studied by USGS for this purpose, see http://www.werc.usgs.gov/outreach.aspx?RecordID=106

22221 McClellan Road, Cupertino, CA 95014 Phone: (408) 252-3748 * Fax: (408) 252-2850
email: scvas@scvas.org * www.scvas.org

2. Risk of bird collision with power lines
Please evaluate the potential for bird collision and/or electrocution as the Project modifies power towers and powerlines, and consider mitigation. Please consider marking distribution and transmission lines, similar to the marking at Don Edwards Wildlife Refuge.

3. Use of Herbicides and Insecticides
The Environmental Commitments related to use of biocides are general to Santa Clara Water District properties (page 2-21.) Please analyze the potential of herbicides, insecticides and rodenticides to impact the Project's footprint and adjacent habitat value. Please list all the biocides that may be used on the Project site. Please analyze potential for direct and secondary poisoning of birds and wildlife by rodenticides. Please consider disallowing use of rodent baits and other rodenticides onsite.

4. Floodwall
SCVAS considers the replacement of existing levees with a floodwall built of metal and reinforced concrete a significant, unmitigable and irreversible adversity that serves to degrade the visual character of the Project area and reduce its usefulness for birds and wildlife. We ask that the Project consider alternative floodwalls that are better suited in texture and feel to the natural environment.
In addition, we ask that the Project /EIR consider improvements that would facilitate nesting by swallows and other cavity nesting birds as an integral part of the floodwalls design, for the benefit of both ecosystem (habitat restoration for avian species) and recreation (bird watching.)

5. Bird watching on trails, boardwalk
SCVAS community of birder watchers frequently uses the trails along creeks and the Bay Trail, and watches birds in the riparian vegetation, the marshes and the wetlands along the trails. To minimize conflicts among user groups on the trails, we request construction of areas where small groups can safely stand without impeding bicycle traffic on trails. Please consider construction of "blinds" for bird watching as part of the proposed boardwalk in the new island and Friendship bridge / platform, and potentially additional locations along the trail.

We thank you for your consideration; please contact us if you have questions,

Sincerely,

Shani Kleinhaus, Ph.D.
Environmental Advocate
Santa Clara Valley Audubon Society
22221 McClellan Rd.
Cupertino, CA 95014
shani@scvas.org

CITIZENS COMMITTEE TO COMPLETE THE REFUGE

453 Tennessee Lane, Palo Alto, CA 94306 Tel 650 493-5540 Fax 650 494-7640 www.CCCRRefuge.org

September 13, 2012 **Via E-mail**

Kevin Murray
San Francisquito Creek Joint Powers Authority
615-B Menlo Avenue
Menlo Park, CA 94025

RE: Comments on the Draft EIR, San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project, San Francisco Bay to Highway 101

Dear Mr. Murray:

The Citizens Committee to Complete the Refuge (CCCR) is pleased to have this opportunity to provide comments for the Draft Environmental Impact Report (DEIR) of the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project, San Francisco Bay to Highway 101 (Project). As a locally-based organization we are well aware of the unfortunate history and impacts of San Francisquito Creek flooding upon homes and businesses, recognizing that protections planned through this Project are surely needed. We also have a deep respect for the benefits provided by a landscape of healthy wetlands and water channels along the Bay's shoreline.

Our organization has its roots in the citizens who led the campaign that founded the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge). For the decades since, we have been active pursing Refuge expansion and the protection of its habitats and wildlife and that of the threatened and dwindling wetlands of the Bay and beyond.

Our work has a direct connection to this Project. Some years ago a long-time member of our Board, Emily Renzel, was integral in adding Palo Alto's Faber and Laumeister tracts to the Refuge. In the years since we have been thrilled to watch the tracts succeed as habitat for the federally-endangered California clapper rail (CACR) and a wide range of other native species.

Endangered Species

While CACR presence has become fairly stable in the Faber tract, its numbers at large remain highly unstable and sensitive to impacts of human actions such that this Project will produce. While their numbers are harder to monitor, these tracts have also become highly suitable habitat for the federally-endangered salt marsh harvest mouse (SMHM) and salt marsh wandering shrew (SMWS). It is critical then that the Project meet the highest level of monitoring and mitigation compliance that ensures protection of these species.

It was good to read in the DEIR that the Army Corps of Engineers (ACOE) will require Section 7 analysis by the US Fish & Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) prior to issuance of any permit. We expect the Project will seek to fulfill the full implementation and mitigation requirements that those assessments will prescribe. As such, **CCCR asks that the Project amend the DEIR's biological mitigation measures (MM BIO) to assert that the MM**

BIO proposals are subject to change and additions per the final Mitigation and Monitoring requirements of the FWS and the NMFS.

As an example, and referring to MM BIO5.1, it is our recent experience that the FWS will require that no construction or major, planned operations/maintenance work occur during CACR breeding and nesting season within 700' of habitat, not 500' as proposed in the DEIR. Similarly it cannot be assumed at any time that CACR, (or for that matter SMHM or SMWS) will not exist in brackish areas. Documented instances of CACR in these locations are not unusual.

It should be noted too that there is no CACR breeding/nesting distance restriction included under the discussion of routine or planned operations and maintenance under MM BIO5.1. There is a documented record (J. Albertson, FWS, 1995) when a CACR in the Laumeister tract abandoned its nest due to nearby *repair* activity, producing breeding failure for that individual bird's entire season.

It is expected that Section 7 findings will provide final, explicit guidance. **CCCR asks that the Project modify MM BIO5.1 in order to embed greater awareness of potential endangered-species impacts and, whenever appropriate, to incorporate that same awareness into all construction, operations and maintenance actions.**

Biological Consultation involving Faber Marsh or any lands of the Refuge

The Project would do well to recognize that one of its greatest resources will be the staff of the Refuge for anything that involves the Faber tract or any Refuge land. Refuge staff members have day-to-day responsibility for these lands and its management. That means that any actions affecting or involving those lands must start with the Project contacting the Refuge. The Refuge staff has exceptional expertise that, many times, will be a no-cost resource for the Project. Examples are instances when a qualified biologist must be on site to make a judgment for construction, operations or maintenance regarding the presence of a special-status species on or near Refuge land. In practice these are services the Refuge routinely provides as a partner to neighboring landowners and agencies.

We recommend that the Project contact the Refuge (Manager Eric Mruz: eric_mruz@fws.gov, 510-792-0222 ext 125) to explore this topic. **CCCR asks that the Project review all instances in the DEIR where it proposes to hire a qualified biologist and, when appropriate, to revise the DEIR to incorporate routine coordination with the Refuge.**

Disturbance and Invasive Species

It is of some concern that the only reference to management of invasive plants is under operations and maintenance and that the need is not considered for construction (Example: MM BIO1.3). Disturbance produced by construction, operations or maintenance often results in the wider distribution of invasive species. That distribution can result in the degradation of existing habitats and exacerbation of the underlying invasive problem. An example is Lepidium latifolium (perennial pepperweed) described in the DEIR as present in the Faber Marsh. This invasive plant succeeds in a wide variety of habitats and is very likely to be present elsewhere in the Project. It is known to often overwhelm established native plant communities and could easily be dispersed by disturbance, vehicles and worker transport into all of the ecotones of the Project and into neighboring lands.

Rather than focus restoration action solely on planting native species, it is important to manage the non-native competition. Currently the City of Palo Alto is preparing an update of its General Plan. In its Natural Environment Element, the Update is including policy that would establish city-wide invasive plant management, for all habitats. While the Update has not yet received final approvals, **CCCR asks that the Project include invasive plant identification and management using qualified botanists whenever land will be disturbed during construction, operations or maintenance.**

Flood impact on Faber Tract

The Santa Clara Valley Audubon Society (SCVAS) has submitted comments on this Project that CCCR has reviewed and gives its full agreement. That letter raises significant questions about the biological and hydrological analysis used to conclude that fluvial inundation of Faber Marsh would have "negligible" impacts on CACR and the federally-endangered black rails. CCCR adds to it concern for SMHM and SMWS in the same place and conditions. Given the cumulative impact possible on *four endangered species*, it is critical and essential that the most thorough and appropriate analyses be performed to fully substantiate conclusions and subsequent actions of this impact. **CCCR asks that the Project seek additional analyses such that the DEIR can adequately demonstrate significance of impacts and identify appropriate mitigating actions.**

In summary, we have great hopes for this Project to proceed successfully, for humans and wildlife alike. It is earnestly hoped that these observations will be useful in achieving that result. As and if desired, I can be contacted at 408-257-7599 or wildlifestewards@aol.com.

The CCCR is a 501(c)(3) nonprofit corporation established by citizens who led the efforts that founded the Refuge in 1972. Fully volunteer-run, it acts to ensure that the Refuge fulfills its Congressional acquisition authority to expand its land holdings to protect special and sensitive habitats and wildlife along the South Bay's shores. Very similarly, it acts on behalf of the continuous protection of the wildlife and habitats the Refuge and our wetlands must provide.

Yours truly,

Eileen P. McLaughlin
Board Member, CCCR

CC: Florence LaRiviere, Chair, CCCR
Carin High, Vice Chair, CCCR

SFCJPA,

The degradation of the levee from the Friendship Bridge to the San Francisco Bay on the East Palo Alto side is an inequity for the residents of East Palo Alto. Alluvial water to this section of the Faber Tract, wanted by SFCJPA, can be accomplished by the use of weir and not degrade the levee. I also feel the need to replace electrical poles on the East Palo Alto side has nothing to do with ecosystem restoration and recreation.

In the DEIR I did not find why the mostly affluent residents of Portola Valley and Stanford University are opposed to service Searville Lake with a dredging operation to repair the flood controls in the San Francisquito Creek. This key information would be useful proving environmental justice, where an economically challenged community is affected by the decisions of an affluent community. East Palo Alto would be losing a potential trail, when it has so little parks space available.

When the San Francisquito flood control design came before the East Palo Alto Public Works and Transportation Commission twice in late 2010 this degradation of the levee was not included. It is unfair to afterword's add the levee degradation as the SFCJPA did not return to the Commission for input.

Please, do not degrade or remove this levee. Thank you.

Bernardo Huerta

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
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OAKLAND, CA 94623-0660
PHONE (510) 286-6053
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Flex your power!
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September 11, 2012

SMVan014
SCH# 2010092048

Mr. Kevin Murray
San Francisquito Creek Joint Powers Authority
6158 Menlo Avenue
Menlo Park, CA 94025

Dear Mr. Murray:

SAN FRANCISQUITO CREEK FLOOD REDUCTION, ECOSYSTEM RESTORATION, AND RECREATION PROJECT SAN FRANCISCO BAY TO HIGHWAY 101 – DRAFT ENVIRONMENTAL IMPACT REPORT

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101 (Project). The following comments are based on the Draft Environmental Impact Report (DEIR). As the lead agency, the San Francisquito Creek Joint Powers Authority (SFCJPA) is responsible for all project mitigation, including any needed improvements to the state highways. The project's scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Since an encroachment permit is required for work in the state right of way (ROW), and Caltrans will not issue a permit until our concerns are adequately addressed, we strongly recommend that the SFCJPA work with Caltrans to ensure that our concerns are resolved during the environmental process, and in any case prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

Cultural Resources

The Cultural Resources studies and mitigation measures in the Cultural Resources Section (Section 3.4) of the DEIR satisfy environmental legal compliance for cultural resources within the state ROW. Should ground-disturbing activities take place as part of this project within state ROW and there is an inadvertent burial discovery, in compliance with California Environmental Quality Act, Public Resources Code 5024.5 and 5097 and Caltrans Standard Environmental Reference, Chapter 2 (at http://ser.dot.ca.gov), all construction within 50 feet of the find shall cease. The Department's Cultural Resource Studies Office, District 4, shall be

immediately contacted at (510) 286-5618. A staff archaeologist will evaluate the finds within one business day after contact.

Encroachment Permit
Work that encroaches onto the state ROW requires an encroachment permit that is issued by the Department. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating state ROW must be submitted to: Office of Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans during the encroachment permit process. See the website link below for more information. http://www.dot.ca.gov/hq/traffops/developserv/permits/

Please feel free to call or email Sandra Finegan of at (510) 622-1644 or sandra_finegan@dot.ca.gov with any questions regarding this letter.

Sincerely,

ERIK ALM, AICP
District Branch Chief
Local Development – Intergovernmental Review

c: State Clearinghouse

Jones, Matthew

From: Teresi, Joe <Joe.Teresi@CityofPaloAlto.org>
Sent: Tuesday, September 18, 2012 8:54 AM
To: Murray, Kevin
Cc: len@sfcjpa.org; Jones, Matthew
Subject: DEIR comments from the City of Palo Alto PTC

Kevin:

Here are the formal comments made by Commissioners at the September 12 Planning and Transportation Commission meeting regarding the San Francisquito Creek DEIR. Please enter them into the formal record and provide a response in the final EIR. Thank you.

Eduardo Martinez: The proposed sheet pile floodwalls to be constructed along the top of bank would have a negative aesthetic impact on the creek, as compared to existing conditions, and are not adequately mitigated. Consider alternative materials or aesthetic treatment of the sheet piles to lessen the visual impact of the floodwalls.

The EIR should discuss the positive steps taken in the project design to adapt to climate change and future sea level rise.

Mark Michael: Concrete with architectural treatment should be considered as an alternative material to the proposed sheet piles for the floodwalls to be constructed along the top of bank, particularly in the most visually sensitive areas.

Joe Teresi
Senior Engineer
Public Works Engineering Services
City of Palo Alto
(650) 329-2129

State of California – The Natural Resources Agency
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Bay Delta Region
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EDMUND G. BROWN JR., *Governor*
CHARLTON H. BONHAM, *Director*

September 26, 2012

Mr. Kevin Murray
San Francisquito Creek Joint Powers Authority
615 B Menlo Avenue
Menlo Park, CA 94025

Dear Mr. Murray:

Subject: San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101, Draft Environmental Impact Report, SCH # 2010092048, San Mateo and Santa Clara Counties

This letter is intended to summarize the Department of Fish and Game's (DFG) concerns regarding the fish and wildlife impacts associated with the subject project. DFG is providing comments on the draft Environmental Impact Report (draft EIR) as a Trustee Agency and Responsible Agency pursuant to the California Environmental Quality Act (CEQA) Sections 15386 and 15381 respectively. As trustee for the State's fish and wildlife resources, DFG has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California. As a Responsible Agency, DFG will have discretionary approval authority over the Project by issuing a Lake and Streambed Alteration Agreement (LSAA) and potentially a California Endangered Species Permit (CESA) Permit.

The project's goals are to improve flood protection, habitat and recreational opportunities within the project reach. To increase San Francisquito Creek's capacity from San Francisco Bay to East Bayshore Road, proposed activities include: lowering the right creek bank levee from the mouth of the creek at San Francisco Bay to allow flow into the Bayland Preserve; dredging the creek; reconfiguring levees to widen the channel to reduce influence of tides; creating a marshplain terrace to convey high flows; and installing floodwalls. Other project activities include constructing access roads for maintenance, and extension of an existing bridge as a boardwalk from the new marshplain terrace to the relocated left bank levee.

Please note, Table *3.3.2. Special-Status Fish and Wildlife with Potential to Occur in Project Footprint* does not acknowledge the saltmarsh harvest mouse as a fully protected species under Section 4700 of the Fish and Game Code nor does it acknowledge the California clapper rail as Endangered under CESA.

The draft EIR states the project will only affect the top of the existing levee on the right hand side of the creek and other habitat providing forage and cover for the California clapper rail and California black rail will not be impacted. The draft EIR does not adequately address

impacts from the increased inundation of the tidal marsh to tidal marsh species including but not limited to California clapper rail, California black rail, saltmarsh harvest mouse, least tern, and western snowy plover. It has been shown when tides are higher in the winter, clapper rail survival rates are lowest, mostly due to the resulting lack of cover when the water is high (Melissa Farinha, DFG, personal communication). Clapper rail nests and saltmarsh harvest mice nests can be destroyed by very high spring tides flooding their habitat. Increased inundation may change vegetation communities which in turn can reduce forage and cover habitat for bird and mammal species utilizing the marsh habitat.

The draft EIR states with project implementation, the maximum water surface elevation increase is estimated to be a negligible 0.2 feet. This appears to calculate the loss of habitat impacted by the increase in water surface elevation after the expected rise in sea-level and not calculated based on current conditions. The tidal marsh habitat that is there now should serve as the baseline for the calculations of habitat loss and habitat that will be impacted by the project. The draft EIR should calculate the habitat that will be inundated as a result of this project under seasonal tidal influences and the 20- and 100-year flood event scenarios as well as after the sea-level rise predictions. The draft EIR should then adequately describe the impacts to the species utilizing this habitat currently and address what direct and indirect effects the project will have on all life history stages of all species utilizing the habitat and how the project will affect population dynamics of those species.

The draft EIR states the proposed activities are expected to affect 0.21 acres of high quality rail habitat, 0.80 acres of medium quality rail habitat and 2.30 acres of low quality rail habitat. Please describe how the quality of habitat is defined, density of rails in each habitat type and how each habitat is utilized by rails. Because marsh habitat has decreased significantly, high densities of rails are forced to use lower quality habitats and the loss of even low quality habitat may have a significant impact to the overall population. Direct and indirect impacts by the loss of habitat should be adequately described so that mitigation measures included can be analyzed how they will avoid, minimize or mitigate those impacts to a less-than-significant level. The draft EIR states approximately 18 acres of tidal marsh will be restored to offset these impacts. A restoration plan was not included and it appears the habitat that will be restored is located from just downstream of Friendship Bridge extending upstream to the Upper Reach and Bayshore Road. This habitat restoration area is surrounded by a golf course and housing development in the Middle Reach and floodwalls in the upper Reach. Please include a detailed restoration plan with plant species to be planted, methodology, success criteria, monitoring and management including measures to ensure success and describe how this restoration will mitigate for the loss of habitat incurred with Project implementation. Also, it appears this mitigation area is within the operations and maintenance area and may be dredged in the future. Dredging this area will have impacts to the habitat that will be created for mitigation. Mitigation sites must be preserved and protected in perpetuity and cannot incur future impacts that would result in the destruction or adverse modification of the habitat specifically created to offset habitat loss elsewhere.

The draft EIR states the California clapper rail and California black rail will be protected during construction by conducting surveys for nesting raptors and migratory birds and installing nesting exclusion devices. Please explain how surveys for other species will protect the rails and how nesting exclusion devices will be installed for the rails and how this will reduce disturbance to the rails to a less-than-significant level.

Both rail species are listed as fully protected under Section 3511 of the DFG Code. A project that has the potential to impact a fully protected species must take, as defined under Section 86 of the Fish and Game Code.[1] The Project proponent should consult with DFG prior to commencement of project activities to review take avoidance measures for the California clapper rail and California black rail. Please also include the following measures for rails:

- Protocol level surveys shall be conducted at the Project site including rail call surveys and rail-track surveys. Survey protocols can be found at: http://www.spartina.org/project_documents/clapper_rails/2011_CLRA_Rpt_smaller.pdf.

- An annual search for and subsequent destruction of any cat feeding stations along public walkways shall be conducted.

- Before the onset of winter high tides, an annual capture and removal effort of feral cats and rats in the surrounding disturbed areas shall be conducted.

The saltmarsh harvest mouse is also listed as fully protected under the Fish and Game Code. DFG recommends project proponents consult with DFG prior to commencement of project activities to determine if other avoidance measures need to be included. The following measures should be incorporated into the project description:

- Hand vegetation removal shall start at the edge farthest form the largest contiguous salt marsh area and work it way towards the salt marsh, providing cover for salt marsh harvest mice and allowing them to move towards the salt marsh as vegetation is being removed.

- In consultation with DFG, exclusion fencing shall be placed around a defined work area immediately following vegetation removal and before project activities begin. The final design and proposed location of the fencing shall be reviewed and approved by DFG prior to placement.

---

[1] Section 86 of the Fish and Game Code defines take as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

- Prior to initiation of work each day within 300 feet of tidal or pickelweed habitats, the qualified biologist shall thoroughly inspect the work area and adjacent habitat areas to determine if saltmarsh harvest mice are present. The biologist shall ensure the exclusion fencing has no holes or rips and the base remains buried. The fenced area will be inspected daily to ensure that no mice are trapped.

Mitigation Measure Bio 9.1 states that in-channel work will be avoided during the steelhead migration season (October 1 to April 30). Steelhead migration continues through June 30 when there is enough flow in the channel; therefore, in-channel work should be avoided prior to June 15.

The draft EIR does not include hydraulic or hydrologic modeling that would support the basis of conducting this project. Monitoring the flow regime and predicting flow patterns, sediment deposition, tidal influence, and water circulation could aid in forming project alternatives and help understand the impacts to species utilizing the marsh as well as steelhead utilizing San Francisquito Creek. DFG recommends conducting modeling studies and analyzing the results to determine long-term impacts the change in flow regimes would have on rearing steelhead habitat, stranding steelhead in the marsh, change in vegetative communities in the tidal marsh, change of foraging, roosting, nesting and cover habitat for tidal marsh species and change in upland habitat for terrestrial species.

If you have any questions, please contact Ms. Suzanne DeLeon, Environmental Scientist, at (831) 440-9433; or Mr. Craig Weightman, Acting Environmental Program Manager, at (707) 944-5577.

Sincerely,

Scott Wilson

Scott Wilson
Acting Regional Manager
Bay Delta Region

cc: State Clearinghouse

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1	1-1	Eric Mruz, USFWS	N/A	As I was skimming through the document I noticed that there are still plans to remove/lower the levee for the Faber Tract. (FT) As you know, the Faber Tract is owned by the City of Palo Alto, but managed as part of the Don Edwards NWR through an MOU with the City. Is this the plan to lower this levee, what you call the right bank in the DEIR? Clapper rails and salt marsh harvest mice are located in this property at high levels for the Bay area, removal of this levee may impact these species with hydrology, vegetation, sediment, and loss of refugia, may impact this sensitive area. This concerns me as this DEIR is considering removal of an important levee on US Fish and Wildlife Service managed property and was not consulted during design phase.	The Project still includes plans to degrade the levee between San Francisquito Creek and the Faber Tract to an elevation of 8 feet. This elevation would enable the Creek to flow into the Faber Tract with increased regularity during fluvial flood events. The lowering of the levee is not intended to change the dominant tidal processes which currently occur in the Faber Tract. As discussed in Section 3.3 of the DEIR, *Biological Resources*, the Project would result in a net increase of approximately 14.5 acres of high marsh and transitional high marsh habitat that support clapper rail, black rail, salt marsh wandering shrew, and salt marsh harvest mouse. This net increase in habitat would support additional refugia and habitat for the species. Flows into the Faber Tract would spill slowly into the area as sheet flow at the point where flood flows reach the lowered levee elevation. The SCFJPA actively engaged with the U.S. Fish and Wildlife Service (USFWS) during initial Project design and heard USFWS concerns during scoping. The SFCJPA will coordinate with the refuge and USFWS Endangered Species group to ensure Endangered Species Act compliance and that the refuge is comfortable with the proposed design.
2	2-1	Margarete Beth, SFRWQCB, S.F. Estuary Partnership	N/A	The SFCJPA should design the Project that avoids and minimizes impacts within the bed and bank and riparian corridor to the maximum extent practicable. Compensatory mitigation should be proposed where impacts are unavoidable. The SFCJPA must identify and include all impacts to waters of the State in the final EIR and the CWA Section 401 application.	The Project seeks to improve the beneficial uses of San Francisquito Creek by increasing flood control capacity, instream and tidal habitat, and flow conditions for steelhead. The proposed design also seeks to avoid altering the existing low-flow channel, and the new wider floodplain would allow ongoing natural channel migration to occur during the Project life cycle. The SFCJPA will apply for 401 certification and will comply with the terms and conditions of that certification.
2	2-2	Margarete Beth	3-122	The EIR should include a discussion on geomorphic and hydraulic impacts downstream and upstream of the Project Site due to Project design. These should be included in the Final EIR.	The Project is anticipated to have negligible upstream and downstream impacts on geomorphology. Upstream of the Project, the channel is highly constrained, including by highway culverts immediately upstream of the Project. Downstream of the Project, there is negligible fluvial

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					influence within the tidal influence of San Francisco Bay beyond existing flood flows that would continue to occur following Project construction. Hence, the Project would not result in significant changes to sediment mobility or geomorphic function upstream or downstream of the Project. This detail is found in the basis of design report for the project and has been added to EIR Section 3.8, *Hydrology and Water Resources*. Additionally, as described in Section 3.8, *Hydrology and Water Resources*, while the Project is designed for conveyance of a maximum 9,400 cubic feet per second (cfs) event concurrent with a 100-year tide event and projected Sea Level Rise, the Project itself would not receive this level of flood event until future projects upstream of the Project are implemented. Following construction, a maximum of approximately 4,500 cfs could be delivered to the Project reach, and therefore this Project would result in immediate hydraulic changes that would impact geomorphology outside the Project reach. The Project would not receive any additional flood flow conveyance until such time that upstream improvements are completed and those projects would address upstream geomorphic processes.
2	2-3	Margarete Beth	N/A	The Draft EIR states specific measures will be implemented to reduce and minimize pollution during "maintenance activities." The Draft EIR should include BMPs to avoid and minimize impacts to water quality during construction activities, post-construction, and maintenance activities.	As described in Section 2.6, *Environmental Commitments*, of the DEIR, the Project will incorporate water quality measures specific to both construction and maintenance. BMPs are referenced under the separate "Construction" and "Operation and Maintenance" impact discussions in Section 3.8, *Hydrology and Water Resources*.
2	2-4	Margarete Beth	N/A	The SFCJPA should propose adequate BMPs associated with stockpiles and protecting water quality.	Measures associated with stockpiles and water quality protection are described in Section 2.6, *Environmental Commitments*, of the DEIR.
2	2-5	Margarete Beth	2-19	The Draft EIR states the dump truck would tilt the truck to drain water, but does not indicate where this activity would occur.	Bed tilting would initially occur at the identified wash down stations. Appropriate specificity had been added to the text.
2	2-6	Margarete Beth	2-19	The Draft EIR states "Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site." Natural watercourse turbidity measurements are typically taken upstream of the	This sentence in the FEIR has been corrected to accommodate the San Francisco Bay Regional Water Quality Control Board's (RWQCB's) requested changes to construction turbidity measurements.

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				diversion structure and not the discharge location. Also, baseline measurements are typically taken at the beginning of construction, after a rain event, and/or a change in construction activity with daily water quality monitoring conduct at least twice per day.	
2	2-7	Margarete Beth	2-21	Coffer dams constructed of gravel shall be covered with material to prevent seepage. Coffer dams shall not be constructed of earthen fill due to potential adverse water quality impacts in the event of a failure.	Requirements to cover gravel cofferdams were added to the FEIR. Allowance for earthen cofferdams in tidal areas was removed from the FEIR.
3	3-1	Annette Ross	N/A	Have you had experience with traffic control, because that's my concern?	Construction management for the SFCJPA would be the responsibility of the Santa Clara Valley Water District, which has extensive experience with construction traffic plans for flood control projects. Additionally, both the cities of Palo Alto and East Palo Alto would vet the traffic plan and contribute expertise regarding local traffic patterns and timing of construction traffic.
3	3-2	Bob Gomez	N/A	One thing that I'm concerned about is that the trucks are going to be coming into the East Palo Alto area, the town. Why not the golf course, since you're going to be working on remodeling that?	Because some material for Project construction on the Project right bank would need to be stored and hauled through East Palo Alto, haul routes into East Palo Alto are necessary. The SFCJPA is committed to keeping truck trips out of the neighborhoods of East Palo Alto to the maximum extent practicable.
3	3-3	Bob Gomez	N/A	What about Cooley Landing? How would that [truck traffic] affect Cooley Landing?	Neither University Avenue nor Bay Road is identified as a haul route for the Project, and thus no impact on access to Cooley Landing is anticipated.
3	3-4	Nancy Edelson	N/A	Well, it's my understanding that -- well, you said that the levee will be torn down or reconfigured in a way so that the creek will flow out into the Baylands right there -- the wetlands. So the concern of the Public Works Commission was that, if you configure it like that, then all that water going into the Baylands will be a threat to the homes that are east of the Friendship Bridge in East Palo Alto, because the levees that protect the Baylands from those homes are not in great shape. So we were told that after you do the project then you will study those levees that are protecting the homes in	As described in Section 3.8, *Hydrology and Water Resources*, while the Project is designed for conveyance of a maximum 9,400 cubic feet per second (cfs) event concurrent with a 100-year tide event and projected Sea Level Rise, the Project itself would not receive this level of flood event until future projects upstream of the Project are implemented. Following construction, a maximum of approximately 4,500 cfs could be delivered to the Project reach, and therefore this Project would not induce impacts on the Faber Tract. As improvements are made upstream of the Project reach, the SFCJPA will improve the levee between the Faber Tract and East Palo Alto, and

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				the gardens from the Baylands. So it was our concern and it's my concern that as part of the project you include the reconstruction of the levees that are east of the Friendship Bridge that protect the city of East Palo Alto from the Baylands. [M]y concern is just that at the same time that you're configuring everything -- my concern is that it's happening at the same time, not just to maybe build up those levees to East Palo Alto, but to make sure that they're safe, they're doing their job.	thus no future potential impacts on this levee are expected.
3	3-5	Bob Gomez	N/A	I'm not too worried about the golf course, but I can't see how this is going to help Palo Alto with the new levees if you don't utilize more of the golf course land. So can you maybe redirect the flow of the water more into the golf course instead of East Palo Alto?	Both sides of the Creek will be equally protected in accordance with U.S. Army Corps of Engineers (USACE) standards. The amount of land on the Golf Course acquired by the Project is only what was deemed necessary to provide that level of protection. Design of the Project is such that flood flows would not spill into the developed areas of East Palo Alto or Palo Alto.
3	3-6	Bob Gomez	N/A	I'm more concerned about East Palo Alto. In your planning, is there going to be any digging making the runoff deeper and maybe not -- to make it deeper and wider? In a way this is the same thing more or less that the Chicago River back in Illinois had the problem with too.	The Project is designed to accommodate local runoff equal to or greater than the existing condition. No changes in local runoff points are anticipated to result from the Project.
3	3-7	Dennis Parker	N/A	I just wanted to verify that the hydrologic monitoring for the Faber Tract was within a frame of reference of the hundred-year tidal flow and sea-level rise, the calculations that yielded the two-inch increase. Is that [*the hundred-year fluvial event at the same moment as the hundred-year tide with twenty-six inches of accommodated sea-level rise over the life of the project*] constant through all of your modeling?	Modeling for the Faber Tract flows were done for the design flow of the hundred-year fluvial event coincident with the hundred-year tide and twenty-six inches of accommodated sea-level rise. This metric is the basis for the entire Project design and modeling of the efficacy of the design.
3	3-8	Robert Allen	2-9	One of your diagrams showed the elevation for the new levee for the golf course seemed to be higher than the other side of the Friendship Bridge. Wouldn't it be more important to protect the housing on the East Palo Alto side than the golf course? And so why wouldn't the levees be higher on the East Palo Alto side?	The left levee (Palo Alto Side) is a setback levee and is expected to experience 1 foot of settlement. The right levee (East Palo Alto Side) is a raise of the existing levee and therefore will experience less settlement, anticipated to be 0.5 feet. After settlement both levees will be the same height.
3	3-9	Robert Allen	N/A	What's freeboard?	*Freeboard* is the increment of levee height added to the design flood height to increase the likelihood of the

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					design flood event being contained without the levee overtopping. Freeboard is added primarily to provide a buffer in height to accommodate uncertainty in the estimated design flood level.
3	3-10	Annette Ross	N/A	Is there any impact on the airport? Nothing is happening -- just around the golf course, but nothing around the airport?	The Palo Alto Airport is downstream of the Project's proposed flood control improvements. Therefore, there would be no impact on the airport or airport-related activities.
3	3-11	Dennis Parker	N/A	I think you may want to do more public outreach on this perception of one side being higher than the other, because at this point a lot of people in East Palo Alto feel as though the golf course side is higher. And I know it's difficult to site across the turn of that, but the perception, especially with the riprap or whatever it's called, where you have the caged rocks and so forth, that erosion on one side and not the other side. The perception is that that side will maintain itself and the East Palo Alto side will settle just from the natural forces of nature. What I'm hearing from you is there's some hydrologic forces that would cause the water level to be higher or lower, not necessarily aligned with the natural height or the perceived height. But that is a selling point, because at this height a lot of East Palo Alto people feel as though the golf course side will never flood and the East Palo Alto side will always flood because of what appears to be a difference in the height of the levee.	The SFCJPA held another scoping meeting on August 29th to hear and address any concerns within the community. The SFCJPA is also going before the appropriate commissions and staff in both East Palo Alto and Palo Alto in order to further inform both communities on the details of the Project design. As previously discussed, both sides of the Creek will be equally protected in accordance with USACE standards.
3	3-12	Bob Gomez	N/A	[T]here's a study on utilizing well water here in East Palo Alto. And I just wonder whether that would make any effect on the quality of the water that's already in there in the wells.	The Project would not impact existing wells or local groundwater levels.
4	4-1	Shani Kleinhaus, Santa Clara Audubon Society	N/A	You're showing the trail and it talks about trails on both sides. Is the trail part of the project?	The Project includes the equivalent replacement of all trails impacted by the proposed Project. No new trails are proposed as part of the Project.
4	4-2	Shani Kleinhaus	N/A	The impact of traffic on that trail and the endangered species that they're trying to restore and other species, like the clapper rail, will not like a lot of traffic there.	The Project includes the equivalent replacement of all trails impacted by the proposed Project. No new trails are proposed as part of the Project. Hence, the Project is not anticipated to result in increased trail use.
4	4-3	Shani Kleinhaus	N/A	It [the trail] is paved already?	The Project would replace trails with equivalent surfaces. Hence, only existing paved areas would be paved after

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					Project implementation.
4	4-4	Bernardo Huerta, chair of East Palo Alto Public Works and Transportation Commission, Planning Commission	N/A	I was on the Public Works and Transportation Commission two years ago. I've been there for eleven years. But this project came through and it did not include -- what we approved was the removal of the levee beyond the San Francisquito Bridge -- I mean the Friendship Bridge. It should have been brought to us at that time, not included afterwards. Our commission had a very hard time trying to find out what it was. We don't always have enough information from our staff because they don't have enough time. To put in that afterwards is not dealing with us straight. [Moderator response: *What part of the city facility was put in after?*] The removal of the levee beyond Friendship Bridge down to the Bay.	The August 2010 Notice of Preparation for the EIR stated, "[r]emoving an unmaintained levee-type structure downstream of Friendship Bridge to allow flood flows from the Creek channel into the Palo Alto Baylands Preserve north of the Creek". This Project element has been one of the primary elements dating back to the SFCJPA's preliminary alternatives analysis and has been a part of the engineering plans since the design work began in 2009.
4	4-5	Bernardo Huerta	N/A	[T]here was a call for where there could be a weir there instead, just beyond the pump house as the creek turns toward the Bay that was in it. I remember that. And I remember previously there was an iteration of that when this -- the worries with the community about flooding began. I've seen that twice, but I did not see it in what was presented to the Public Works and Transportation Commission to degrade that levee. I think that levee should be saved. I think East Palo Alto should make a trail out of it some day in the future when these birds and mice are less endangered. To me, maybe the City of East Palo Alto should not be looking for it as far as its planning, as far as making more habitat for the clapper rail or the salt-water harvest mouse, because I don't see other communities doing the same. I'm not, like, against flooding the Faber Tract. I'm for it, because I jog along there. I've been jogging for thirty-four years. And I've seen this dry up more and more over the years. All those waterways used to be very wide. Now they're filled in with vegetation. I think it needs a lot more water. I'm for a weir. But I would like to see the City of East Palo Alto to one day make a trail out of it, though it probably wouldn't be used -- that levee -- very much, as	The Project would result in the degradation of the levee to an elevation lower than its current elevation, but higher than the interior tidal marsh elevation. This would allow the fluvial flood flows to spill into the Faber Track during high flow events, but not under normal flow conditions. This would perform similarly to a weir. The existing land on which that levee occurs is part of the preserved baylands and is managed by the USFWS. The USFWS does not allow that area to be used as a trail.

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				people going out there, because they don't use the end of Runnymede very much at all. So it would be something for the community in the future.	
4	4-6	Bernardo Huerta	N/A	And like you were saying about the clapper rail and habitat restoration, not many other cities are doing this. We have the dredging of a canal right on -- just north of the levee that runs to Runnymede to the pump station; and that took us another year and a half just because of the mitigation with the harvest mouse. That's us, just the city, you know. Other cities don't have this habitat restoration for the harvest mouse or the clapper rail, because it is a planning impediment. I'm for East Palo Alto should do more if the other communities do more because it only allows us to have more problems in the future when we want to develop or anything. But I'm talking about adding more. It has its habitat right now; but increasing its habitat more when other cities are not increasing those specific endangered species habitat more, it impacts us more -- this community.	The Project is required to comply with the requirements of state and federal regulations that require the protection of special-status species and the habitats those species use. The net gain of approximately 14.5 acres of marsh habitat is a beneficial consequence of widening the Creek floodplain to increase channel capacity and provide the necessary flood conveyance.
4	4-7	Bernardo Huerta	N/A	You have the sixty-five-foot power poles. I guess they're going to be new power poles. [Moderator response: *It's replacement of the existing power poles. One of them is being relocated.*] But are they sixty-five feet? Or is that new? Are they going to be higher than they are now? As a planning commissioner, I'm going to hear it from the community. So keep that in mind what you can do to mitigate that. I know one of them is like a grounding line for the gas line down there. So try to get that -- I mean I hoped our planning commissioners would be here to explain that to you because we get a lot of heat from people for anything.	Existing electric utilities would be relocated or raised as part of the Project, in order to accommodate the widened channel. No new utility lines would be constructed as part of the Project; only the replacement of existing facilities would occur. All 65- to 75-foot poles would be replaced with a tower of equivalent height. Existing 125-kilovolt transmission towers would be raised by 15 to 25 feet. As described in Section 3.1, *Aesthetics*, towers of that height are visually common in the baylands, and similar increases in height are not usually visually perceived by trail users.
4	4-8	Bernardo Huerta	N/A	And I am also wondering about the storm outflow for the pump station here in East Palo Alto. Why would it be dumping its water into the new canal?	Stormwater conveyance at East Palo Alto's O'Connor Pump Station would not be maintained as part of the Project and would not be reconfigured.
4	4-9	Bernardo Huerta	N/A	And I'm also worried sometimes about, when there's projects like this, we don't know what kind of signage is going to go up. We should know, hey, no horses. People do	Signage would be developed in advance of the Project and would be coordinated with both the City of East Palo Alto and Palo Alto to meet local codes for construction signage

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				ride horses through there. And there's a place right here just in East Palo Alto that says no horses and people do have horses here in East Palo Alto. So we would like to know what the signage is going to look like.	and notification of the public regarding construction.
4	4-10	Bernardo Huerta	N/A	[A]s far as the levee that runs between Runnymede and the pump station, for it to be enhanced or rebuilt by the Army Corps of Engineers, didn't Feinstein work on that to about 2006 and then found that it was too expensive and the Army Corps of Engineers said no? And that's where we're at now, because of that. So, you know, to me, I don't think it's going to be done, because they're going to again say it's too expensive or they need to come up with a lot more money than before. But what's to stop this organization from stepping away from that when they find it's just too expensive?	The SFCJPA's mission includes the repair of coastal levees, and the SFCJPA has already secured grant money to begin studying the needs of the coastal levees. Additionally, as described in Section 3.8, *Hydrology and Water Resources*, while the Project is designed for conveyance of a maximum 9,400 cubic feet per second (cfs) event concurrent with a 100-year tide event and projected Sea Level Rise, the Project itself would not receive this level of flood event until future projects upstream of the Project are implemented. Following construction, a maximum of approximately 4,500 cfs could be delivered to the Project reach, and therefore this Project would not induce impacts on the Faber Tract. As improvements are made upstream of the Project reach, the SFCJPA will improve the levee between the Faber Tract and East Palo Alto, and thus no future potential impacts on this levee are expected.
4	4-11	Bernardo Huerta	N/A	Will there be some barrier down below underneath the soil where the ground squirrels can't cross through and maybe poke a hole to the other side?	The USACE soil compaction requirements for levees are anticipated to inhibit ground squirrel activity. No additional barriers to ground squirrel activity are associated with the Proposed Project
4	4-12	Shani Kleinhaus	N/A	What type of towers are going to be raised? Are those like big transmission towers? Can I ask to mitigate against bird strikes? If you're going across the creek and increase the height, it's -- maybe. Did you study flight patterns of egrets and other large birds over that area to determine – That's why I'm worried, because of those trees and because you're crossing the creek here. It's not a huge mitigation. What you need to do is a few of those round aviation balls on the -- It helps. And it would be really, really nice, because it will -- In some places where they have records of strikes they do, but you're increasing the height, which may cause a	The towers are large PG&E existing transmission towers. As described in Section 3.3 of the EIR, *Biological Resources*, the raising of the existing towers was not considered significant given that the towers are already part of the environmental and are not being substantially raised by the Proposed Project and are in an area with already significantly tall trees that would move the likely flight path of bird above the towers. The SFCJPA will coordinate with PG&E as necessary to include any additional measures that may contribute to reducing the existing issue of bird strikes.

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				problem; and we don't know. I don't see this as a mitigation that is so expensive and outrageous that it's not good to do to be safe. Sometimes it [placing balls on the wires] is for aviation purposes, which is also something that can hurt birds in this area, since there's an airport. But also it's for bird strike. And usually it's for the large birds like egrets, storks, cranes -- all these guys with the long necks. And it's not really a difficult thing to do. It's not like outrageously expensive difficult maintenance, whatever. It's just put one of those balls there.	
5a	5a-1	Libby Lucas	N/A	Any proposal to induce San Francisquito Creek to overbank into the Faber Tract in high storm flow events runs counter to previous flood flow reports and analysis and therefore it appears there is a critical deficiency in this Draft EIR in presenting such a design as the only alternative. As technical reference please review the 1984 Hydrologic Analysis of the Palo Alto Flood Basin - by Linsley Kraeger Associates Ltd. which states "a careful analysis of the effects of time of occurrence and magnitude of the 100-year flood demonstrated that the most critical conditions occurred when the peak flow of a 100-year flood coincided with time of occurrence of mean sea level on the rising tide of the design tide cycle." The report goes on to note that it is not uncommon to see a combination of deluge and high tide and low barometric pressure. "A composite flood hydrograph for the three streams (Adobe, Barron and Matadero) was used as the inflow flood to the Basin. It was also found that the most critical condition existed when a tide peak occurred 4 hours after the inflow peak." (The tidal cycle Plate 4, Inflow hydrograph of composite 100-year flood Plates 3 and 5). It is these same high storm event conditions that will constrain San Francisquito Creek from alleviating peak flood flows by overbanking into Faber Tract, because the Faber Tract will already be inundated by high tides. Please include in this EIR detailed records of tide elevations during recent twenty years of high stream flows. This is critical data that must be used in levee design, either in build-up height or in lowering of levee height.	The Proposed Project was brought forward as part of the SFCJPA's Preliminary Alternatives Analysis (Philip Williams and Associates, 2008) and is consistent with the 2003 U.S. Army Corps of Engineers Continuing Authorities Program 205 Report for the watershed (SFCJPA, 2003) that identified preliminary flood control alternatives throughout the watershed. As required under CEQA, the EIR also evaluates potential feasible alternatives to the Proposed Project, including alternatives that do not inundate the Faber Tract. The project is designed to accommodate the 100-year fluvial flow, coincident with a 100 year tide event, plus 26 inches of predicted Sea Level Rise and required freeboard of 3 feet (increased to 4 feet at Friendship Bridge). As part of the design hydraulic analysis (HDR 2010), this condition was modeled including 100-year tidal conditions in the Faber Tract and accounts for the maximum probable flood condition.

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				In the recent US COE Napa River flood control project EIR hydrologic analysis of stream and bay inter-tidal flow was carefully documented and resulted in an extensive wetlands holding basin adjacent to Highway 12. This was a complicated analysis which restructured land but which seemed to be supported by hard data. I do not find equivalent hydrologic data to support a 'Faber Tract alternative' that appears to be only EIR option.	
5a	5a-2	Libby Lucas	N/A	In view of the Palo Alto Flood Basin's recent degradation of levee and substrata at the flood gates' structure it confirms my concern that San Francisquito Creek is bound to reestablish its historic alignment to S.F. Bay. Believe it is an accepted fact that underflow of a stream will persist in river bed gravels that were created over centuries even though its surface flows may be redirected. This was only too evident in February 1998 flood flows from San Francisquito Creek that extended to Matadero Creek and attempted exit at Mayfield Slough.	As described in the San Francisco Estuary Institute's Historical Ecology of Lower San Francisquito Creek Phase 1 (SFEI, 2009), the creek channel within the Proposed Project area is a geologically recent occurrence with the pre-1850 fluvial channel terminating into bay tidal marsh at Highway 101. Alluvial fill within the tidal areas was mostly fine sediments and not gravels. While the current channel alignment directed the channel away from its outlet near Mayfield Slough to its present location in the 1920's, flood flows diverge to both the north and south of the primary channel with no sole preferred flow path. The Proposed Project would capture fluvial flows that currently escape the channel and the levees would meet USACE standards to prevent failure. For these reasons, there is no evidence to suggest that the channel would reestablish its pre-1920's alignment, especially post project.
5a	5a-3	Libby Lucas	N/A	The inevitable degradation by flood flow sediment will mean ultimate loss of the Faber Tract marsh and a marsh of equivalent viability needs to be created for the endangered species of salt marsh harvest mouse and California clapper rail to compensate for mitigation marsh loss mitigation in an EIR proposal alternative. Is it feasible in this location to establish an equivalent marsh with continuity of high caliber wetlands habitat? Mitigation riparian corridor and wetlands for SCVWD's Matadero Creek project will be lost in levee upgrade? EIR needs to say how mitigation requirements for all wetlands and vegetation loss will be accommodated?	Flood flows currently spill into the Faber Tract without deleterious sediment inputs because sediment drops out when flow velocities drop as the flow passes over the remnant levee between the channel and the Faber Tract. The Proposed Project would not eliminate this function. Degradation of the Faber Tract levee would lower the elevation, but would only allow fluvial flood flows to access the Faber Tract with increased frequency. The Faber Tract would still be dominated by tidal action and San Francisquito Creek sediments would still primarily be contained in the creek channel. Both SCVWD and City of Palo Alto mitigation areas could be impacted by the project. The SFCJPA is working with those agencies and the permitting agencies to mitigate for any impacts to those areas. Impacts to special status plants, riparian habitat, wetlands, and trees would be

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					mitigated consistent with Mitigation Measures BIO 1.1, BIO 1.2, and BIO 1.3 for plants; Mitigation Measures BIO 11.1 and BIO 11.2 for riparian habitats; Mitigation Measure BIO 12.1 for wetlands; and Mitigation Measure BIO 13.1 and BIO 13.2 for trees.
5a	5a-4	Libby Lucas	N/A	Also, any alteration of the Faber Tract levee adjacent to East Palo Alto might further endanger their outboard levee interface with Bay tidal action and erosion. Are such possible impacts fully addressed in this EIR?	The Faber Tract levee adjacent to East Palo Alto is not part of the Proposed Project. As discussed in Section 3.8 of the EIR, *Hydrology and Water Resources*, flows into the Faber Tract could impact the levee between the Faber Tract and East Palo Alto based on modeling of flows into the Faber Tract (HDR 2010) at the design criteria conditions of the 100-year creek flows coincident with the 100-year tide plus 26 inches of Sea Level Rise. At this condition, the maximum increase in water surface elevation in the Faber Tract is estimated to be a 0.2 feet (approximately 2 inches). The Project is designed so that the creek can contain a 9,400 cubic feet per second (cfs) flow concurrent with a 100-year tide event and projected Sea Level Rise. The Project area itself would not be subject to this level of flood event until future projects upstream of the Project are implemented. Until that time, a maximum of approximately 4,500 cfs could be delivered to the Project reach, which is not enough for this Project alone to create additional tidal flooding risks. Before improvements upstream of the Project reach are implemented and creek capacity of 9,400 cfs becomes possible in the Project area, the SFCJPA will work with the City of East Palo Alto to improve the levee between the Faber Tract and East Palo Alto. Thus, no future impacts on this levee are expected.
5a	5a-5	Libby Lucas	N/A	As an adjunct to the feasibility of San Francisquito Creek returning to its historic alignment under extreme 100-year flood flow conditions it would seem advisable for utilities along this old stream channel to pad up to at least a ten-foot elevation. In particular this would affect upgrade of the Palo Alto Water Treatment Plant.	The reestablishment of the Pre-1920's San Francisquito Creek channel is not reasonably foreseeable and thus infrastructure improvements associated with such an outcome are not considered.
5a	5a-6	Libby Lucas	N/A	Would it also be a conservative measure to address choke points upstream where San Francisquito Creek has historically overbanked to the southeast, in this EIR	Due to the presence of Highway 101 and the differences in the system upstream and downstream of Highway 101, the Highway represents a logical terminus for the

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				alternative, to avoid CEQA conflict in piecemealing of the project? I suggest this in consideration of an increase in estimated 100 year level of flows to 9400 cfs from 7860 cfs.	Proposed Project under CEQA. The SFCJPA is also studying alternatives for fluvial flood control upstream of Highway 101, but ultimately all fluvial flows captured upstream of Highway 101 would pass through the Highway 101 crossing of San Francisquito Creek and need to be accommodated by a distinct project downstream of Highway 101. Therefore, the Proposed Project is a necessary first step to accommodate the ultimately selected upstream alternative and is a viable uniquely defined project regardless of the outcome of future analysis.
5b	5b -1	Libby Lucas	N/A	Attachment A: California Department of Water Resources Groundwater Resources of South Bay, Groundwater Areas map depicts San Francisquito Creek historic channel to Mayfield Slough and San Francisco Bay, with watershed retention reservoirs and lakes showing Lake Lagunita as a percolation resource in unconfined aquifer zone, while Searsville Lake and Felt Lake lie over confined geologic strata. EIR 3-106 analysis is imprecise on this aspect of Santa Clara Valley groundwater resources in general and these reservoirs in particular. It needs to be pointed out Los Trancos Creek diversions to Felt Lake do not retain beneficial uses of winter stream flows in San Francisquito Creek for endangered steelhead trout to degree historic diversions to Lake Lagunita did.	The EIR analysis of beneficial uses is specific to the Proposed Project and the Project's area of impact. The noted areas are significantly upstream of the Proposed Project, and while important in terms of beneficial uses within the overall watershed, are not relevant in the context of the Proposed Project or the Project's setting.
5b	5b -2	Libby Lucas	N/A	Also fencing at fish ladder on Los Trancos Creek is likely to impound storm flow woody debris.	The Los Trancos Creek diversion is not part of the Proposed Project nor within the vicinity of impacts associated with the Proposed Project.
5b	5b -3	Libby Lucas	N/A	Attachment B: SCVWD 1990 map of 100-year saltwater flood zone in Palo Alto appears to follow original parameters of San Francisco Bay shoreline. This and an updated version of saltwater intrusion should be included in EIR, plus perhaps map of projected saltwater flood zone and intrusion as anticipated for bay rise in 50 years.	Attachment B represents areas of tidal flooding, not saltwater intrusion. Saltwater intrusion is not an issue within the area for the Proposed Project and is thus not considered. The 100-year tide is one of the key design criteria addressed by the project and is considered in Section 3.8 of the EIR, *Hydrology and Water Resources.*
5b	5b -4	Libby Lucas	N/A	Attachment C SCVWD Report on Flooding and Flood Related Damages in Santa Clara County, February 2-9, 1998 map of San Francisquito Creek flood zone appears to bear strong	It is not uncommon for the historic tidal shoreline to create a topographic contour above which modern day flooding would not encroach. This is informative, but is not considered within the context of the Proposed

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				resemblance to contours of historic shoreline.	Project.
5b	5b -5	Libby Lucas	N/A	Not attached is drawing of Peter Coutts, Esq. Ayrshire Farm (1876 Thompson's Atlas of Santa Clara County) of 1242 acres and an historic map showing reservoir as part of extensive water features adjacent to foothills, previous to Leland Stanford's acquisition of 'the farm'. Coutts was a highly prosperous agriculturist from Bordeaux region who ran racing stable and extensive stock farm relying solely on local watershed supply.	The Proposed Project is not anticipated to alter local watershed supply and thus is not considered within the context of the Proposed Project.
5b	5b -6	Libby Lucas	N/A	Missing from San Francisquito Creek EIR: Map of SCVWD Matadero mitigation riparian vegetation and wetlands impacted by project levee redesign	The EIR recognizes in Section 3.3, Biological Resources, that the Proposed Project will impact SCVWD and City of Palo Alto mitigation areas. In the current context, adding mapping of the mitigation areas does not provide additional insight or information. During permitting and final design these areas will be precisely mapped against the final design take lines as necessary to coordinate appropriate protection and replacement of these resources.
5b	5b -7	Libby Lucas	N/A	Missing from San Francisquito Creek EIR: Map of upstream habitat that supports endangered species of tiger salamander and red-legged frog, or western pond turtle that might be washed into project area from upper watershed by winter storm flows.	The EIR recognizes in Section 3.3, Biological Resources, that potential habitat for California tiger salamander, California red-legged frog, and western pond turtle occurs upstream of the proposed Project and that all of these species could potentially be found in the Project area during construction. As such, it is not materially relevant where these species occur outside of the project area, but important to understand and recognize that the species could be carried into the project reach from upstream sources.
5b	5b -8	Libby Lucas	N/A	Missing from San Francisquito Creek EIR: Map of COE feasible super levee alignments in proposed San Francisquito Creek flood project area September 2000, San Francisquito Creek Bank Stabilization and Revegetation Master Plan Report (This is a professional guide for best management practices along San Francisquito Creek's natural riparian corridor and needs to be referenced in this EIR. High western banks in San Mateo County erode under storm flows, while lower Santa Clara County banks overflow. 1998 emergency conditions were challenging in this regard.)	The U.S. Army Corps of Engineers alignments proposed in 2000 were superseded by the Continuing Authorities Program 205 Report for the watershed (SFCJPA 2003), which identified preliminary flood control alternatives for the Project reach. The San Francisquito Creek Bank Stabilization and Revegetation Master Plan Report, while informative on good design practices, was intended for smaller landowner projects upstream of Highway 101 (upstream of tidal influence). While useful, the Master Plan is not up to date with current USACE guidance on levee construction and is not intended to guide large flood

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					control efforts in the tidal reach of San Francisquito Creek.
6	6-1	Shani Kleinhaus	N/A	California clapper rail and California black rail Lowering of the levee on the right bank (From the mouth of the Creek at San Francisco Bay to 200 feet downstream of the existing Friendship Bridge) would allow fluvial flows, depending on the concurrent tide, to overflow into the Faber Tract during storm events. Additionally the 100-year tide would connect the channel to the Faber Tract. The DEIR states that fluvial inputs could potentially result in habitat changes detrimental to California clapper rail and California black rail. The DEIR analysis proposes that the maximum increase in water surface elevation in the Faber Tract would be 0.2 feet (approximately 2 inches) and that periodicity of inundation events would increase. The DEIR describes this increase "negligible" (page 3-49) yet provides no biological evidence or analysis in support of the conclusion that a more frequent 2-inch increase is not significant to the California clapper rail and the California black rail. SCVAS recommends that additional mitigation should be provided to reduce the risks associated with inundation, including risk of depredation as individual rails are deprived of shelter. Please consider creating additional cover such as floating islands studied by USGS for this purpose, see http://www.werc.usgs.gov/outreach.aspx?RecordID=106	As discussed in Section 3.8 of the EIR, *Hydrology and Water Resources*, modeling of flows into the Faber Tract are based on the design criteria conditions of the 100-year creek flows (9,400 cubic feet per second (cfs)) coincident with the 100-year tide plus 26 inches of Sea Level Rise. The Project area, and thus the Faber Tract, would not be subject to this level of flood event until future projects upstream of the Project are implemented. Until that time, a maximum of approximately 4,500 cfs can be delivered to the Project reach and therefore this Project would not induce impacts on the Faber Tract. Thus, in the early years of the project the degradation of the Faber Tract levee would have no effect on habitat in the Faber Tract. Even with the full fluvial input of the Project design when projects are completed upstream of the Project, the water surface elevation in the Faber Tract is increased only 0.2 feet (approximately 2 inches). Furthermore, while the frequency of flows into the Faber Tract are increased, these inputs would be similar in nature to the fluvial floods that enter the Faber Tract under current conditions and potential impacts only occur under the highly improbable coincidence of two 100 year flood events (fluvial and tidal). Given that the likelihood of both the 100-year fluvial and 100-year tidal event occurring at the same time is statistically negligible, and that under this scenario with Sea Level Rise there is only a 2 inch increase in water surface elevation, it is reasonable to conclude that impacts to rail habitat and refuge would also be negligible.
6	6-2	Shani Kleinhaus	N/A	Risk of bird collision with power lines Please evaluate the potential for bird collision and/or electrocution as the Project modifies power towers and powerlines, and consider mitigation. Please consider marking distribution and transmission lines, similar to the marking at Don Edwards Wildlife Refuge.	The towers are large PG&E transmission towers. As described in Section 3.3 of the EIR, *Biological Resources*, the raising of the towers was not considered significant given that the towers are already part of the environment and are not being substantially raised by the Proposed Project and are in an area with already significantly tall trees that would move the likely flight path of bird above the towers.

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6	6-3	Shani Kleinhaus	2-22	Use of Herbicides and Insecticides The Environmental Commitments related to use of biocides are general to Santa Clara Water District properties (page 2-21.) Please analyze the potential of herbicides, insecticides and rodenticides to impact the Project's footprint and adjacent habitat value. Please list all the biocides that may be used on the Project site. Please analyze potential for direct and secondary poisoning of birds and wildlife by rodenticides. Please consider disallowing use of rodent baits and other rodenticides onsite.	The SFCJPA Environmental Commitments, consistent with SCVWD guidelines, are applicable to construction and maintenance throughout the Proposed Project footprint. The SFCJPA has also determined to further strengthen these measures to provide additional protection for salt marsh harvest mouse and California clapper rail. The following conditions will be added to project Environmental Commitments related to Safe Use of Herbicides and Pesticides. 1. In areas where rodenticides are used, carcass retrieval surveys will be conducted daily for acute toxins and weekly for anticoagulants to minimize secondary poisoning impacts. Any spilled bait will be cleaned up immediately. 2. No rodenticides or fumigants will be used within the range of the salt marsh harvest mouse or California clapper rail as identified on District range maps. 3. Methods of rodent control within salt marsh harvest mouse or California clapper rail habitat will be limited to live trapping. All live traps shall have openings measuring no smaller than 2 inches by 1 inch to allow any salt marsh harvest mouse that inadvertently enter the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line.
6	6-4	Shani Kleinhaus	N/A	Floodwall SCVAS considers the replacement of existing levees with a floodwall built of metal and reinforced concrete a significant, unmitigable and irreversible adversity that serves to degrade the visual character of the Project area and reduce its usefulness for birds and wildlife. We ask that the Project consider alternative floodwalls that are better suited in texture and feel to the natural environment. In addition, we ask that the Project /EIR consider improvements that would facilitate nesting by swallows and other cavity nesting birds as an integral part of the floodwalls design, for the benefit of both ecosystem (habitat restoration for avian species) and recreation (bird watching.)	Based on the analysis presented in the EIR, the SFCJPA has determined that the aesthetic impact of the floodwall is less than significant under CEQA. The SFCJPA has evaluated many options for the floodwalls and concluded that the currently proposed design is cost effective and not visually intrusive. As the Proposed Project is a flood control facility, no elements can be added that could contribute to the long-term degradation or inhibit maintenance of the facility, including elements that increase wildlife use. Substantial new habitat for wildlife is provided in the marshplain within the channel. Recreational areas for standing and watching the environment are proposed along the existing trail along

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					with appropriate educational signage regarding wildlife and habitat.
6	6-5	Shani Kleinhaus	N/A	Bird watching on trails, boardwalk SCVAS community of birder watchers frequently uses the trails along creeks and the Bay Trail, and watches birds in the riparian vegetation, the marshes and the wetlands along the trails. To minimize conflicts among user groups on the trails, we request construction of areas where small groups can safely stand without impeding bicycle traffic on trails. Please consider construction of "blinds" for bird watching as part of the proposed boardwalk in the new island and Friendship bridge/ platform, and potentially additional locations along the trail.	While bird watching blinds are not proposed as part of the project, open "landings" on the new boardwalk at the island and new levee will be created and will allow for wildlife viewing without impacting trail use. Additionally, the SFCJPA is considering an additional viewing area and signage within the Baylands Preserve at the end of the levee spur near the northern footing of the Friendship Bridge.
7	7-1	Eileen P. McLaughlin	N/A	Endangered Species While CACR [California clapper rail] presence has become fairly stable in the Faber tract, its numbers at large remain highly unstable and sensitive to impacts of human actions such that this Project will produce. While their numbers are harder to monitor, these tracts have also become highly suitable habitat for the federally-endangered salt marsh harvest mouse (SMHM) and salt marsh wandering shrew (SMWS). It is critical then that the Project meet the highest level of monitoring and mitigation compliance that ensures protection of these species. It was good to read in the DEIR that the Army Corps of Engineers (ACOE) will require Section 7 analysis by the US Fish & Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) prior to issuance of any permit. We expect the Project will seek to fulfill the full implementation and mitigation requirements that those assessments will prescribe. As such, **CCCR [Citizens Committee to Complete the Refuge] asks that the Project amend the DEIR's biological mitigation measures (MM BIO) to assert that the MM BIO proposals are subject to change and additions per the final Mitigation and Monitoring requirements of the FWS and the NMFS.**	As stated in the EIR, the SFCJPA will consult with both the National Marine Fisheries Service and the U.S. Fish and wildlife Service to meet their obligations under the Endangered Species Act as part of the Project's USACE 404 permit. Additionally, the SFCJPA will work with the California Department of Fish and Game in conjunction with the required Lake and Streambed Alteration Agreement that will be required for the Proposed Project. The SFCJPA recognizes that additional requirements may come out of these permitting processes that could be required to construct the Project. The SFCJPA is also coordinating with U.S. Fish and Wildlife Service who manage the Faber Tract as part of the Don Edwards National Wildlife Refuge.
7	7-2	Eileen P.	3-49	As an example, and referring to MM BIO5.1, it is our recent experience that the FWS will require that no construction	The SFCJPA is aware of the 700 foot buffer requirement being increasingly required by the U.S. Fish and Wildlife

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		McLaughlin		or major, planned operations/maintenance work occur during CACR breeding and nesting season within 700' of habitat, not 500' as proposed in the DEIR. Similarly it cannot be assumed at any time that CACR, (or for that matter SMHM or SMWS) will not exist in brackish areas. Documented instances of CACR in these locations are not unusual. It should be noted too that there is no CACR breeding/nesting distance restriction included under the discussion of routine or planned operations and maintenance under MM BIO5.1. There is a documented record (J. Albertson, FWS, 1995) when a CACR in the Laumeister tract abandoned its nest due to nearby repair activity, producing breeding failure for that individual bird's entire season. It is expected that Section 7 findings will provide final, explicit guidance. **CCCR asks that the Project modify MM BIO5.1 in order to embed greater awareness of potential endangered-species impacts and, whenever appropriate, to incorporate that same awareness into all construction, operations and maintenance actions.**	Service for some projects. As such the 500 foot requirement will be corrected to 700 feet in the Final EIR. The EIR, as discussed in Section 3.3 of the DEIR, *Biological Resources*, recognizes the potential presence of salt marsh harvest mouse, salt marsh wandering shrew, and California clapper rail could occur in the Project Area and has included mitigation measures to ensure no harm comes to these species. Maintenance activities are similar to those currently in place and are not anticipated to rise to the level that would induce impacts on species using tidal habitat in the project reach or the Faber Tract. More substantial repair activities are not reasonably foreseeable and would be subject to new approvals if and when such activities occur.
7	7-3	Eileen P. McLaughlin	N/A	Biological Consultation involving Faber Marsh or any lands of the Refuge The Project would do well to recognize that one of its greatest resources will be the staff of the Refuge for anything that involves the Faber tract or any Refuge land. Refuge staff members have day-to-day responsibility for these lands and its management. That means that any actions affecting or involving those lands must start with the Project contacting the Refuge. The Refuge staff has exceptional expertise that, many times, will be a no-cost resource for the Project. Examples are instances when a qualified biologist must be on site to make a judgment for construction, operations or maintenance regarding the presence of a special-status species on or near Refuge land. In practice these are services the Refuge routinely provides as a partner to neighboring landowners and agencies. We recommend that the Project contact the Refuge (Manager Eric Mruz: eric_mruz@fws.gov, 510-792-0222 ext 125) to explore this topic. **CCCR asks that the Project**	The SFCJPA is already coordinating with U.S. Fish and Wildlife Service's Mr. Mruz at the Don Edwards National Wildlife Refuge and will continue to coordinate with Refuge staff throughout construction.

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				review all instances in the DEIR where it proposes to hire a qualified biologist and, when appropriate, to revise the DEIR to incorporate routine coordination with the Refuge.	
7	7-4	Eileen P. McLaughlin	N/A	Disturbance and Invasive Species It is of some concern that the only reference to management of invasive plants is under operations and maintenance and that the need is not considered for construction (Example: MM BIO1.3). Disturbance produced by construction, operations or maintenance often results in the wider distribution of invasive species. That distribution can result in the degradation of existing habitats and exacerbation of the underlying invasive problem. An example is Lepidium latifolium (perennial pepperweed) described in the DEIR as present in the Faber Marsh. This invasive plant succeeds in a wide variety of habitats and is very likely to be present elsewhere in the Project. It is known to often overwhelm established native plant communities and could easily be dispersed by disturbance, vehicles and worker transport into all of the ecotones of the Project and into neighboring lands. Rather than focus restoration action solely on planting native species, it is important to manage the non-native competition. Currently the City of Palo Alto is preparing an update of its General Plan. In its Natural Environment Element, the Update is including policy that would establish city-wide invasive plant management, for all habitats. While the Update has not yet received final approvals, **CCCR asks that the Project include invasive plant identification and management using qualified botanists whenever land will be disturbed during construction, operations or maintenance.**	The EIR does include measures to prevent invasive plant recruitment during construction to minimize the post project non-native seed bank and create amenable conditions to promote native growth. These measures are incorporated into the project as the Environmental Commitments found under "General Construction Site Housekeeping". Additionally, the Project tree survey identified opportunities to remove non-native vegetation in the immediate Project vicinity, but outside the construction footprint. The SFCJPA intends to work with project stakeholders and local jurisdictions to coordinate maintenance and invasive species management as part of the post project maintenance of the facility to the maximum extent practicable.
7	7-5	Eileen P. McLaughlin	N/A	Flood impact on Faber Tract The Santa Clara Valley Audubon Society (SCVAS) has submitted comments on this Project that CCCR has reviewed and gives its full agreement. That letter raises significant questions about the biological and hydrological analysis used to conclude that fluvial inundation of Faber Marsh would have "negligible" impacts on CACR and the federally-endangered black rails. CCCR adds to it concern	The Project still includes plans to degrade the levee between San Francisquito Creek and the Faber Tract to an elevation of 8 feet. This elevation would enable the Creek to flow into the Faber Tract with increased regularity during fluvial flood events. The lowering of the levee is not intended to change the dominant tidal processes which currently occur in the Faber Tract. Creek flows into the Faber Tract would spill slowly into the area as sheet flow at the point where flood flows reach the lowered

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				for SMHM and SMWS in the same place and conditions. Given the cumulative impact possible on four endangered species, it is critical and essential that the most thorough and appropriate analyses be performed to fully substantiate conclusions and subsequent actions of this impact. **CCCR asks that the Project seek additional analyses such that the DEIR can adequately demonstrate significance of impacts and identify appropriate mitigating actions.**	levee elevation at velocities which would not be detrimental to small mammals seeking upland refuge. As discussed in Section 3.3 of the DEIR, *Biological Resources*, the Project would result in a net increase of approximately 14.5 acres of high marsh and transitional high marsh habitat that support clapper rail, black rail, salt marsh wandering shrew, and salt marsh harvest mouse. This net increase in habitat would support additional refugia and habitat for the species.
8	8-1	Brandon Huerta	N/A	The degradation of the levee from the Friendship Bridge to the San Francisco Bay on the East Palo Alto side is an inequity for the residents of East Palo Alto. Alluvial water to this section of the Faber Tract, wanted by SFCJPA, can be accomplished by the use of weir and not degrade the levee.	The Project would result in the degradation of the levee between the creek and Faber Tract to an elevation lower than its current elevation, but higher than the interior tidal marsh elevation. This would allow the fluvial (creek) flood flows to spill into the Faber Track during high flow events, but not under normal flow conditions. This would perform similarly to a weir. As described in Section 3.8, Hydrology and Water Resources, while the Project is designed for conveyance of a maximum 9,400 cubic feet per second (cfs) event concurrent with a 100-year tide event and projected Sea Level Rise, the Project itself would not receive this level of flood event until future projects upstream of the Project are implemented. Until that time, a maximum of approximately 4,500 cfs could be delivered to the Project reach, which would not induce impacts on the Faber Tract levees. Additionally, the SFCJPA has already secured grant money to evaluate the current Bay levee separating East Palo Alto from the Faber Tract, and to design and secure permits to construct an improved levee. This work would be done before improvements are made upstream of the Project reach, and thus before any impacts from the Project are felt on the Bay levee.
8	8-2	Brandon Huerta	N/A	I also feel the need to replace electrical poles on the East Palo Alto side has nothing to do with ecosystem restoration and recreation.	In order to accommodate the Proposed Project, PG&E needs to relocate or modify gas and electrical utility infrastructure. At the same time, PG&E is also upgrading infrastructure within the Project vicinity to meet current standards. PG&E and the SFCJPA have reached a cost share agreement on the upgrading of these facilities.

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8	8-3	Brandon Huerta	N/A	In the DEIR I did not find why the mostly affluent residents of Portola Valley and Stanford University are opposed to service Searville Lake with a dredging operation to repair the flood controls in the San Francisquito Creek. This key information would be useful proving environmental justice, where an economically challenged community is affected by the decisions of an affluent community. East Palo Alto would be losing a potential trail, when it has so little parks space available.	The Proposed Project does not currently include any work at Searsville Reservoir. Searsville Reservoir and Dam are owned by Stanford University, and were originally built by a private company for water supply, not as a flood control facility. The University is currently studying feasible options for how to deal with the dam and reservoir, but no reasonably foreseeable outcome has been determined.
8	8-4	Brandon Huerta	N/A	When the San Francisquito flood control design came before the East Palo Alto Public Works and Transportation Commission twice in late 2010 this degradation of the levee was not included. It is unfair to afterword's add the levee degradation as the SFCJPA did not return to the Commission for input. Please, do not degrade or remove this levee.	The August 2010 Notice of Preparation for the EIR stated, "[r]emoving an unmaintained levee-type structure downstream of Friendship Bridge to allow flood flows from the Creek channel into the Palo Alto Baylands Preserve north of the Creek". This Project element has been one of the primary elements dating back to the SFCJPA's preliminary alternatives analysis and has been a part of the engineering plans since the design work began in 2009.
9	9-1	Eric Alm	N/A	As the lead agency, the San Francisquito Creek Joint Powers Authority (SFCJPA) is responsible for all project mitigation, including any needed improvements to the state highways. The project's scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document.	The SFCJPA is coordinating with Caltrans staff to ensure that the project and Caltrans' planned replacement of the Highway 101 and frontage road crossings over San Francisquito Creek are designed to accommodate each other. The SFCJPA has coordinated the connections between the floodwalls at the upstream extent of the Proposed Project with the Caltrans project. The SFCJPA looks forward to continuing coordination with Caltrans during final design and the encroachment permit process.
9	9-2	Eric Alm	N/A	Since an encroachment permit is required for work in the state right of way (ROW), and Caltrans will not issue a permit until our concerns are adequately addressed, we strongly recommend that the SFCJPA work with Caltrans to ensure that our concerns are resolved during the environmental process, and in any case prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.	The SFCJPA recognizes the need to apply for an encroachment permit for work adjacent to Caltrans right-of-way and looks forward to continuing coordination with Caltrans staff.
9	9-3	Eric Alm	3-82	Cultural Resources The Cultural Resources studies and mitigation measures in the Cultural Resources Section (Section 3.4) of the DEIR	The SFCJPA will add to the final EIR measures the following: Should ground-disturbing activities within Caltrans ROW

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				satisfy environmental legal compliance for cultural resources within the state ROW. Should ground-disturbing activities take place as part of this project within state ROW and there is an inadvertent burial discovery, in compliance with California Environmental Quality Act, Public Resources Code5024.5 and 5097 and Caltrans Standard Environmental Reference, Chapter 2 (at http://ser.dot.ca.gov), all construction within 50 feet of the find shall cease. The Department's Cultural Resource Studies Office, District 4, shall be immediately contacted at (510) 286-5618. A staff archaeologist will evaluate the finds within one business day after contact.	make an inadvertent burial discovery, all construction within 50 feet of the find shall cease. Caltrans' Cultural Resource Studies Office, District 4, shall be immediately contacted at (510) 286-5618. A staff archaeologist will evaluate the finds within one business day after contact.
9	9-4	Eric Alm	N/A	Encroachment Permit Work that encroaches onto the state ROW requires an encroachment permit that is issued by the Department. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating state ROW must be submitted to: Office of Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660.	As noted previously, the SFCJPA recognizes the need to apply for an encroachment permit for work adjacent to Caltrans right-of-way and looks forward to continuing coordination with Caltrans staff.
9	9-5	Eric Alm	3-169	Traffic-related mitigation measures should be incorporated into the construction plans during the encroachment permit process. See the website link below for more information. http://www.dot.ca. gov /hq/traffops/developserv /permits/	The SFCJPA recognizes the need to coordinate the Traffic Plan with Caltrans in addition to the Local Authorities and will add the appropriate text to the Final EIR text for the Traffic Study requirements.
10	10-1	Eduardo Martinez	N/A	The proposed sheet pile floodwalls to be constructed along the top of bank would have a negative aesthetic impact on the creek, as compared to existing conditions, and are not adequately mitigated. Consider alternative materials or aesthetic treatment of the sheet piles to lessen the visual impact of the floodwalls.	Based on the analysis presented in the EIR, the SFCJPA has determined that the aesthetic impact of the floodwall is less than significant under CEQA. The SFCJPA has evaluated many options for the floodwalls and concluded that the currently proposed design is cost effective and not visually intrusive.
10	10-2	Eduardo Martinez	N/A	The EIR should discuss the positive steps taken in the project design to adapt to climate change and future sea level rise.	The EIR discloses that the Project has assumed 26 inches of Sea Level Rise. The SFCJPA believes it is prudent to design the Project to provide a substantial level of protection throughout the 50-year Project lifetime, which is why the Project provides greater protection against Sea Level Rise than is required.
10	10-3	Mark Michael	N/A	Concrete with architectural treatment should be considered as an alternative material to the proposed sheet	Floodwall facing elements were evaluated during preliminary design and were not considered to bring

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				piles for the floodwalls to be constructed along the top of bank, particularly in the most visually sensitive areas.	enough aesthetic value to justify the cost. Concrete treatments were determined to be equally visually intrusive as the basic floodwalls themselves.
11	11-1	Scott Wilson	Table 3.3-2, Pages 5-6	Please note, Table 3.3.2 . Special Status Fish and Wildlife with Potential to Occur in Project Footprint does not acknowledge the saltmarsh harvest mouse as a fully protected species under Section 4700 of the DFG Code or the California clapper rail as Endangered under CESA.	Fully protected species have been identified in Table 3.3.2 in the Final EIR. The correct CESA status for California clapper rail has also been added to the Final EIR.
11	11-2	Scott Wilson	N/A	The DEIR states the Project will only affect the top of the existing levee on the right hand side of the creek and other habitat providing forage and cover for the California clapper rail and California black rail will not be impacted. The DEIR does not adequately address impacts from the increased inundation of the tidal marsh to tidal marsh species including but not limited to California clapper rail, California black rail, saltmarsh harvest mouse, least tern, and western snowy plover. It has been shown when tides are higher in the winter, clapper rail survival rates are lowest, mostly due to the resulting lack of cover when the water is high (Melissa Farinha, DFG, personal communication). Clapper rail nests and saltmarsh harvest mice nests can be destroyed by very high spring tides flooding their habitat. Increased inundation may change vegetation communities which in turn can reduce forage and cover habitat for bird and mammal species utilizing the marsh habitat.	At no point do the flows increase the areal extent of affected habitat over existing conditions, and the habitat of the Faber Tract would still be tidally dominated, with episodic fluvial inputs as currently occurs under existing conditions. The only change induced by the project is the frequency of fluvial flood events spilling into the Faber Tract. Modeling suggests that fluvial flows above the 5-year event currently enter the Faber Tract. Lowering of the remnant levee between the Creek and Faber Tract would increase the frequency to roughly the 2-3 year event. This change in frequency is not anticipated to result in significant changes in the vegetation communities within the Faber Tract.
11	11-3	Scott Wilson	N/A	The DEIR states with Project implementation, the maximum water surface elevation increase is estimated to be a negligible 0.2 feet. This appears to calculate the loss of habitat impacted by the increase in water surface elevation after the expected rise in sea level and not calculated based on current conditions. The tidal marsh habitat that is there now should serve as the baseline for the calculations of habitat loss and habitat that will be impacted by the Project. The DEIR should calculate the habitat that will be inundated as a result of this project under seasonal tidal influences and the 20 and 100-year flood event scenarios as well as after the sea-level rise predictions. The DEIR should then adequately describe the impacts to the species utilizing this habitat currently and address what direct and indirect effects the project will have on all	As discussed in Section 3.8 of the EIR, *Hydrology and Water Resources*, modeling of flows into the Faber Tract are based on the design criteria conditions of the 100-year flood flows coincident with the 100-year tide plus 2.17 feet of Sea Level Rise. At this condition, the maximum increase in water surface elevation in the Faber Tract is estimated to be a 0.2 feet (approximately 2 inches). The maximum 0.2 foot increase only occurs at the point flow enters the Faber Tract and dissipates, moving out from the flow entry point. While the project is designed for conveyance of a maximum 9,400 cfs event concurrent with a 100-year tide event and projected Sea Level Rise, under current conditions the Project itself would not receive this level of flood event until future projects upstream of the Project are implemented. Hence

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				life history stages of all species utilizing the habitat and how the project will affect population dynamics of those species.	under the existing baseline, a maximum of approximately 4,500 cfs can be delivered to the Project reach and would have no impact on the Faber Tract. Both conditions are considered in the EIR, but the analysis of effect is more concerned with the ultimate design baseline, as the existing condition would not impact on the Faber Tract, with or without the Project. As such, the degradation of this levee would have no effect on habitat in the Faber Tract. Even with the full fluvial input of the ultimate design, the water surface elevation in the Faber Tract is negligibly influenced, thus it is reasonable to conclude that impacts to rail habitat and refuge are also negligible. While the frequency of flows into the Faber Tract would increase, these inputs would be similar in nature to the current fluvial floods that enter the Faber Tract under current conditions. Potential impacts only occur under the highly improbable coincidence of the 100-year fluvial and 100-year tidal flood events. Given that the likelihood of both the 100-year fluvial and 100-year tidal event occurring at the same time is statistically negligible, it is reasonable to conclude that commensurate habitat impacts would also be negligible. As discussed above, at no point do the flows increase the areal extent of affected habitat over existing conditions and the habitat of the Faber Tract would still be tidally dominated, with episodic fluvial inputs. The only change induced by the project is the frequency of events.
11	11-4	Scott Wilson	N/A	The DEIR states the proposed activities are expected to affect 0.21 acres of high quality rail habitat, 0.80 acres of medium quality rail habitat and 2.30 acres of low quality rail habitat. Please describe how the quality of habitat is defined, density of rails in each habitat type and how each habitat is utilized by rails. Because marsh habitat has decreased significantly, high densities of rails are forced to use lower quality habitats and the loss of even low quality habitat may have a significant impact to the overall population. Direct and indirect impacts by the loss of habitat should be adequately described so that mitigation measures included can be analyzed how they will avoid, minimize or mitigate those impacts to a less than	Salt Marsh habitat suitability was evaluated for the entire Project area, including the Faber Tract and was classified as follows: • Low quality habitat—small size (<0.1 acre), isolated (> 0.25 mile from occupied habitat), and/or highly degraded (generally surrounded by non-native species and in an area of high use by humans) • Moderate quality habitat—moderately sized (>0.1 acre but <0.5 acre), proximate to occupied habitat (< 0.25 mile), of moderate quality (i.e., some degree of degradation, edge, or fragmentation), or some combination of these three characteristics that creates

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				significant level.	some potential for species presence • High quality habitat—Larger contiguous habitat currently known to be occupied or is so proximate to occupied habitat (<0.1 mile) that connectivity is likely. This classification is consistent with the habitat descriptions for California clapper rail and California black rail, as described in the *San Francisco Bay Tidal Marsh Recovery Plan* (USFWS 2010). As described in Section 3.3 of the EIR, Biological Resources, Impacts to approximately 3.3 acres of rail habitat in the Project Footprint would be mitigated with the restoration of 18 acres of habitat in the Faber Tract and the Proposed Project area.
11	11-5	Scott Wilson	N/A	The DEIR states approximately 18 acres of tidal marsh will be restored to offset these impacts. A restoration plan was not included and it appears the habitat that will be restored is located from just downstream of Friendship Bridge extending upstream to the Upper Reach and Bayshore Road. This habitat restoration area is surrounded by a golf course and housing development in the Middle Reach and floodwalls in the upper Reach. Please include a detailed restoration plan with plant species to be planted, methodology, success criteria, monitoring and management including measures to ensure success and describe how this restoration will mitigate for the loss of habitat incurred with Project implementation.	The approximately 18 acres that will be restored in the Faber Tract and the Proposed Project area all occur adjacent to the substantially developed cites of East Palo Alto and Palo Alto. A detailed mitigation and monitoring plan is in development that would be submitted to DFG as part of the permitting process and will include the requested mitigation details. Overall, current planting design includes 7 acres of pickleweed dominated high marsh and 11 acres of high marsh/upland transition that would mitigate for impacts associated with the Proposed Project.
11	11-6	Scott Wilson	N/A	Also, it appears this mitigation area is within the operations and maintenance area and may be dredged in the future. Dredging this area will have impacts to the habitat that will be created for mitigation. Mitigation sites must be preserved and protected in perpetuity and cannot incur future impacts that would result in the destruction or adverse modification of the habitat specifically created to offset habitat loss elsewhere.	The channel has been designed to roughly maintain sediment equilibrium over time while allowing natural processes to maintain the channel. Dredging during the Project lifetime is not proposed and if determined to be necessary in the future would be subject to separate approvals.
11	11-7	Scott Wilson	N/A	The DEIR states the California clapper rail and California black rail will be protected during construction by conducting surveys for nesting raptors and migratory birds and installing nesting exclusion devices. Please explain how surveys for other species will protect the rails and how nesting exclusion devices will be installed for the rails and	As described in Section 3.3 of the EIR, *Biological Resources*, under Mitigation Measure BIO5.1 "*If individuals are routinely observed in the work area, a species avoidance plan will be developed in coordination with USFWS and DFG*". Exclusion measures proposed would be specific to the identified presence of the species

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				how this will reduce disturbance to the rails to a less than significant level.	and relation of the location to the project. As stated in the Mitigation Measure BIO5.1 the SFCJA would coordinate with DFG to identify appropriate exclusion measures if rail nests are identified in the proposed construction area.
11	11-8	Scott Wilson	N/A	Both rail species are listed as fully protected under Section 3511 of the DFG Code. Because of this, DFG cannot issue a CESA take permit unless it aids in the recovery of the species or for scientific research. A project that has the potential to impact a fully protected species must include avoidance measures so that take, as defined under Section 86 of the DFG Code, will not occur. The Project proponent should consult with DFG prior to commencement of Project activities to determine if measures to be taken will avoid take of the California clapper rail and California black rail.	The SFCJPA recognizes the importance of fully protected status and that the designation applies to multiple species that could be potentially impacted by the Project without mitigation. The SFCJPA recognizes the need to consult with DFG prior to commencement of Project activities to determine if measures to be taken will avoid take of the California clapper rail, California black rail, and salt marsh harvest mouse.
11	11-9	Scott Wilson	3-49,50	Please also include the following minimization measures for rails: • Protocol level surveys shall be conducted at the Project site including rail call surveys and rail-track surveys. Survey protocols can be found at: http://www.spartina.org/project_documents/clapper_rails/2011_CLRA_Rpt_smaller.pdf • An annual search for and subsequent destruction of any cat feeding stations along public walkways shall be conducted • Before the onset of winter high tides, an annual capture and removal effort of feral cats and rats in the surrounding disturbed areas shall be conducted.	The SFCJPA will add the measures to the Final EIR for the construction phase of the project. If maintenance activities would occur in potential habitat or restored marsh areas, appropriate protocol level surveys would be conducted. Given the urbanized nature of the areas adjacent to the Project and the infrequent expected periodicity of maintenance actions, measures associated with feral cat management would have minimal value within the local context over the Project lifetime.
11	11-10	Scott Wilson	3-52,53	The saltmarsh harvest mouse is also listed as fully protected under the DFG Code. DFG recommends Project proponents consult with DFG prior to commencement of Project activities to determine if other avoidance measures need to be included. The following avoidance and minimization measures should be incorporated into the Project description to avoid taking saltmarsh harvest mice: • Hand vegetation removal shall start at the edge farthest form the largest contiguous salt marsh area and work it way towards the salt marsh, providing cover for salt marsh harvest mice and allowing them to move towards the salt	The SFCJPA recognizes the importance of fully protected status and that the designation applies to multiple species that could be potentially impacted by the Project without mitigation. The SFCJPA recognizes the need to consult with DFG prior to commencement of Project activities to determine if measures to be taken will avoid take of the California clapper rail, California black rail, and salt marsh harvest mouse. The SFCJPA will add the requested measures to the Final EIR for the construction phase of the project to further ensure impacts to fully protected species dot not occur and to strengthen the efficacy of

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				marsh as vegetation is being removed. • In consultation with DFG, exclusion fencing shall be placed around a defined work area immediately following vegetation removal and before Project activities begin. The final design and proposed location of the fencing shall be reviewed and approved by DFG prior to placement. • Prior to initiation of work each day within 300 feet of tidal or pickelweed habitats, the qualified biologist shall thoroughly inspect the work area and adjacent habitat areas to determine if saltmarsh harvest mice are present. The biologist shall ensure the exclusion fencing has no holes or rips and the base remains buried. The fenced area will be inspected daily to ensure that no mice are trapped.	currently proposed mitigations.
11	11-11	Scott Wilson	N/A	Mitigation Measure Bio 9.1 states that in-channel work will be avoided during the steelhead migration season (Oct 01-April 30). Steelhead migration continues through June 30 when there is enough flow in the channel, therefore, in-channel work should be avoided prior to June 15.	Based on studies of steelhead activity in the watershed described in the *Lower San Francisquito Creek Watershed Aquatic Habitat Assessment and Limiting Factors Analysis* (Jones & Stokes 2006) steelhead migration and spawning is regularly finished by March. Hence, the proposed construction window has been determined to be sufficient to protect steelhead within San Francisquito Creek. The SFCJPA will coordinate with the DFG and the National Marine Fisheries Service during permitting of the Project to determine if the work window needs to be modified in above average water years that could modify the local steelhead movement patterns.
11	11-12	Scott Wilson	N/A	The DEIR does not include hydraulic or hydrologic modeling that would support the basis of conducting this Project. Monitoring the flow regime and predicting flow patterns, sediment deposition, tidal influence, and water circulation could aid in forming Project alternatives and help understand the impacts to species utilizing the marsh as well as steelhead utilizing San Francisquito Creek. DFG recommends conducting modeling studies and analyzing the results to determine long-term impacts the change in flow regimes would have on rearing steelhead habitat, stranding steelhead in the marsh, change in vegetative communities in the tidal marsh, change of foraging, roosting, nesting and cover habitat for tidal marsh species and change in upland habitat for terrestrial species.	The DEIR is supported by hydraulic modeling by the design engineer and preliminary alternatives studies that are referenced in Section 3.8 of the EIR, *Hydrology and Water Resources*. As discussed in Section 3.3 of the EIR, *Biological Resources*, long term impacts to marsh and instream habitat have been determined to be less than significant. These conclusions are based on the background studies and the conclusions of hydraulic analyses are presented and discussed in the DEIR in both Sections 3.3 and 3.8.

Appendix F

San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101 Mitigation Monitoring and Reporting Plan

Appendix F. Mitigation Monitoring and Reporting Plan for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project San Francisco Bay to Highway 101

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Air Quality				
Mitigation Measure AQ2.1—Implement Tailpipe Emission Reduction for Project Construction. According to the BAAQMD guidelines (2011a), the SFCJPA will require all construction contractors to implement the exhaust Basic Construction Mitigation Measures and Additional Construction Mitigation Measures recommended by the BAAQMD to control exhaust emissions. Emission reduction measures will include at least the following measures and may include other measures identified as appropriate by the SFCJPA and/or contractor. • Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 2 minutes. Clear signage will be provided for construction workers at all access points. • All construction equipment will be maintained and properly tuned in accordance with manufacturer‘s specifications. All equipment will be checked by a certified visible emissions evaluator. • The Project will develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction Project (i.e., owned, leased, and subcontractor vehicles) would achieve a Project wide fleet-average 20 percent NO_X reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such	All Project elements, during construction	Construction contractors	This measure will remain in effect for the duration of Project construction.	The SFCJPA’s project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
as particulate filters, and/or other options as such become available. • Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM. • Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.				
Mitigation Measure AQ2.2—Fleet Modernization for Onroad Material Delivery and Haul Trucks during Construction. During construction, the Project Applicant will ensure that all onroad heavy-duty diesel trucks with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater used at the Project site will comply with EPA 2007 on-road emission standards for PM10 and NO_X (0.01 grams per brake horsepower-hour [g/bhp-hr] and 0.20 g/bhp-hr, respectively). The Project Applicant will submit evidence of the use of modern truck fleet to the BAAQMD. For purposes of analysis, the mitigated reductions provided by MM-AQ-2.3 herein assume a 2007 and newer model truck fleet.	All Project elements, during construction	Construction contractors	This measure will remain in effect for the duration of Project construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure AQ2.3—Modernization for Directional Drilling Equipment during Construction. During construction, the SFCJPA will require that the contractor's equipment used for directional drilling meet EPA Tier 2 or higher emissions standards. In addition, all directional drilling equipment will be outfitted with the BACT devices certified by CARB. Any emissions control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 2 or Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.	All Project elements, during construction	Construction contractors	This measure will remain in effect for the duration of Project construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
The requirement of MM-AQ-2.3 will be met, unless the contractor is able to provide proof that any of these circumstances exists: • A piece of specialized equipment is unavailable in a controlled form within the State of California, including through a leasing agreement. • A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the proposed Project, but the application is not yet approved, or the application has been approved, but funds are not yet available. • A contractor has ordered a control device for a piece of equipment planned for use on the proposed Project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the proposed Project has the controlled equipment available for lease.				
Mitigation Measure NV1.1—Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents. The SFCJPA will provide advance written notification of the proposed construction activities to all residences and other noise- and air quality-sensitive uses within 750 feet of the construction site. Notification will include a brief overview of the proposed Project and its purpose, as well as the proposed construction activities and schedule. It will also include the name and contact information of the SFCJPA's project manager or another SFCJPA representative or designee responsible for	All Project elements, during construction	The SFCJPA's project manager will coordinate written notification and will identify the appropriate staff member(s) to serve as noise and air quality disturbance coordinator.	Notification will occur at least 30 days before construction begins at each site. The noise and air quality disturbance coordinator will continue to be available during working hours (included any extended hours) for the duration of Project construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
ensuring that reasonable measures are implemented to address the problem (the construction noise and air quality disturbance coordinator; see Mitigation Measure NV1.3).				
Mitigation Measure NV1.3—Designate Construction Noise and Air Quality Disturbance Coordinator to Address Resident Concerns. The SFCJPA will designate a representative to act as construction noise and air quality disturbance coordinator, responsible for resolving construction noise and air quality concerns. The disturbance coordinator's name and contact information will be included in the preconstruction notices sent to area residents (see Mitigation Measure AQ2.2). She or he will be available during regular business hours to monitor and respond to concerns. In the event an air quality or noise complaint is received, she or he will be responsible for determining the cause of the complaint and ensuring that reasonable measures are implemented to address the problem.	All Project elements, during construction	The SFCJPA's project manager will coordinate written notification and will identify the appropriate staff member(s) to serve as noise and air quality disturbance coordinator.	Notification will occur at least 30 days before construction begins at each site. The noise and air quality disturbance coordinator will continue to be available during working hours (included any extended hours) for the duration of Project construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Biological Resources				
Mitigation Measure BIO1.1—Conduct Botanical Surveys. SFCJPA will retain a qualified botanist to survey suitable habitat in the Project area for special-status plants. Surveys will be conducted during the appropriate blooming periods for each species as indicated in Table 3.3-3. **Table 3.3-3. Timing of Surveys for Special-Status Plants** Species — Blooming Period — Period Surveys Should Occur[a] Alkali milk-vetch — March–June — April/May San Joaquin spearscale — May–October — July/August	All Project elements, during construction	A qualified botanist or ecologist retained by the SFCJPA will perform the surveys, documentation, and reporting described in this measure.	Surveys will be completed during the blooming periods for each species before ground-disturbing activities begin. Surveys will take place far enough in advance of ground-disturbing activities to allow for Mitigation Measures BIO1.2 and BIO1.3 to be implemented, if necessary. Survey timing may be adjusted based on input from the qualified	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure			Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Congdon's tarplant	June–November	July/August			botanist/ecologist, based on variations in weather and other factors that influence the blooming period. If possible, surveys should be timed to coincide with blooming periods of known local populations.	
Point Reyes bird's-beak	June–October	July/August				
Hairless popcorn-flower	April–May	April/May				
Slender-leaved pondweed	May–July	June/July				
California seablite	July–October	July/August				
Saline clover	April–June	April/May				

[a] Exact timing of surveys should account for annual variations in climate and weather; surveys should be timed to coincide with blooming periods of known local populations whenever possible.

Surveys will follow the CNPS Botanical Survey Guidelines (California Native Plant Society 2001**Error! Bookmark not defined.**). Special-status plants identified during the surveys will be mapped using a handheld global positioning system unit and documented as part of the public record. A report of occurrences will be submitted to SFCJPA and the CNDDB. Surveys will be completed before ground-disturbing activities begin; survey timing will allow for follow-up mitigation, if needed. If it is determined that individuals of identified special-status plant species could be affected by construction traffic or activities, Mitigation Measure BIO1.2 and, if necessary, Mitigation Measure BIO1.3, will be implemented.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Mitigation Measure BIO1.2—Confine Construction Disturbance and Protect Special-Status Plants During Construction. Construction disturbance will be confined to the minimum area necessary to complete the work, and will avoid encroachment on adjacent habitat. If special-status plants are found, a setback buffer will be established around individuals or the area occupied by the population, based on judgment of a qualified botanist. The plants and a species-appropriate buffer area determined in consultation with agency (DFG and USFWS) staff will be protected from encroachment and damage during construction by installing temporary construction fencing. Fencing will be brightly colored and highly visible. Fencing will be installed under the supervision of a qualified botanist to ensure proper location and prevent damage to plants during installation. Fencing will be installed before site preparation or construction work begins and will remain in place for the duration of construction. Construction personnel will be prohibited from entering these areas (the exclusion zone) for the duration of Project construction. Fencing installation will be coordinated with fence installation required by other mitigation measures protecting wetlands, riparian habitat, and mature trees.	All Project elements, during construction	A qualified botanist or ecologist retained by the SFCJPA will coordinate with DFG and USFWS staff to establish setback buffers (i.e., determine their location and extent). The qualified botanist/ecologist will either install construction fencing to protect plants within the setback, or will supervise installation by construction personnel. The botanist/ecologist will be responsible for ensuring that fencing is installed without damage to special-status plants. All contractor staff will be expected to observe the setback buffers.	At each site, all setbacks will be established and fenced before any site preparation or construction activities are permitted to commence.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Setbacks will be established in consultation with DFG and USFWS.
Mitigation Measure BIO1.3—Compensate for Loss of Special-Status Plants. If any individuals of listed special-status plants are present and cannot be effectively avoided through implementation of Mitigation Measure BIO1.2, SFCJPA will develop and implement a compensation plan. The compensation plan will preserve an off-site area containing individuals of the affected species. The plan will be implemented so that there is no net loss of special-status plants. If an off-site population is not located or is not available for preservation, SFCJPA will employ a qualified nursery to collect and propagate the affected species, collected at the appropriate time	All Project elements, prior to construction	A qualified botanist or ecologist retained by the SFCJPA will coordinate with DFG and USFWS to develop the compensation plan and monitoring and adaptive management plan. The SFCJPA's project manager will be responsible for implementing the plan.	If propagation is required, propagules will be collected before ground disturbance begins. Any transplantation will also occur prior to ground disturbance. Compensation described in this measure will be arranged, and if possible, completed prior to groundbreaking.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. SFCJPA will submit documentation of the completed compensation and subsequent monitoring and adaptive management plan results to DFG and USFWS

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
of year, prior to population disturbance at the affected areas of the Project. Transplantation will also be implemented if practicable for the species affected, including mature native plants to the extent feasible. The compensation plan will be developed by a qualified botanist in coordination with and approval of DFG or USFWS, depending on whether the plant has state or federal status, respectively, or both. The compensation area will contain a population and/or acreage equal to or greater than that lost as a result of Project implementation and will include adjacent areas as needed to preserve the special-status plant population in perpetuity. Compensation of the affected population will occur in an amount equal to or greater than the amount lost as a result of the Project to ensure that genetic diversity is preserved and no net loss of the number of individuals occurs. The quality of the population preserved will also be equal to or greater than that of the affected population, as determined by a qualified botanist retained by the SFCJPA. Compensation sites and populations will be subject to DFG and USFWS approval. The SFCJPA will be responsible for ensuring that the compensation area is acquired in fee or in conservation easement, maintained for the benefit of the special-status plant population in perpetuity, and funded through the establishment of an endowment. A monitoring and adaptive management plan will be developed for each compensation site, subject to DFG and USFWS approval. This plan will establish success criteria for the site and will include protocols for annual monitoring of the site. The goal of monitoring will be to assess whether the plan has successfully mitigated Project impacts; monitoring will be designed to ensure that the required number of plants and/or plant acreage is being sustained through site maintenance. Factors to be monitored could				

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
include density, population size, natural recruitment, and plant health and vigor. If monitoring indicates that special-status plant populations are not maintaining themselves, adaptive management techniques will be implemented. Such techniques could include reseeding/replanting, nonnative species removal, and other management tools. The site will be evaluated at the end of the monitoring period to determine whether the mitigation has met the goal of this mitigation measure to preserve a population the same size as that affected and of equal or greater quality as that lost as a result of Project activities at the site. Criteria by which this determination will be made will be established in the monitoring plan. The monitoring plan will also address adaptive management strategies to be adopted if the evaluation determines that the site does not meet the success criteria. In that case, a monitoring plan will stay in place until the success criteria are met.				
Mitigation Measure BIO2.1—Develop and Implement Worker Awareness Training. Prior to construction, Worker Awareness Training must be conducted to inform construction workers of their responsibilities regarding sensitive environmental resources. The training will include environmental education about the western pond turtles, nesting raptors and migratory birds, western burrowing owl, California clapper rail, California black rail, salt marsh harvest mouse, salt marsh wandering shrew, California least tern, western snowy plover, California red-legged frog, San Francisco garter snake, and steelhead, as well as sensitive habitat (e.g., in-stream habitat, riparian habitat, wetlands). The training will include visual aids to assist in identification of regulated biological resources, actions to take should protected wildlife be observed within the Project area, and possible legal repercussions of impacting such regulated resources.	All Project elements, prior to construction	The SFCJPA will retain a qualified wildlife biologist to implement this measure for construction contractor crews.	Construction crew training will occur prior to any work on the site.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Mitigation Measure BIO2.2—Implement Survey and Avoidance Measures to Decrease Disturbance to Western Pond Turtles. Prior to the start of construction activities at Project element sites that could support western pond turtle, SFCJPA will retain a qualified biologist to conduct preconstruction surveys for western pond turtles in all suitable habitats in the vicinity of the work sites. Surveys will take place no more than 7 days prior to the onset of site preparation and construction activities with the potential to disturb turtles or their habitat. If preconstruction surveys identify active nests, the biologist will establish no-disturbance buffer zones around each nest using temporary orange construction fencing. The demarcation will be permeable to allow young turtles to move away from the nest following hatching. The radius of the buffer zone and the duration of exclusion will be determined in consultation with DFG. The buffer zones and fencing will remain in place until the young have left the nest, as determined by the qualified biologist. If western pond turtles are found in the Project area, a qualified biologist will remove and relocate them to suitable habitat outside the Project limits, consistent with DFG protocols and permits. Relocation sites will be subject to agency approval. If turtles are observed during the surveys, then Mitigation Measure BIO2.3 will be implemented.	All Project elements, prior to construction	The SFCJPA will retain a qualified wildlife biologist to implement this measure.	The surveys and avoidance measures described in this measure will be performed before site preparation and construction activity begins.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Exclusion fencing will be established in consultation with DFG and USFWS as necessary. A written report will be submitted to DFG detailing the survey results of any western pond turtles and subsequent relocation activities (if necessary).
Mitigation Measure BIO2.3—Daily Surveys and Monitoring of Construction Activities to Decrease Disturbance to Western Pond Turtles. SFCJPA will retain a qualified biologist to conduct preconstruction surveys for western pond turtles in all suitable habitats in the vicinity of work sites that will be active within the 3 days prior to the onset of site preparation and construction activities with the potential to disturb turtles or their habitat. If no turtles are found during the daily survey, construction will commence and be monitored for the duration of	All Project elements, prior to construction	The SFCJPA will retain a qualified wildlife biologist to implement this measure.	The surveys and avoidance measures described in this measure will be performed daily before construction activity begins.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's SMP program manager will be responsible for ensuring proper

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
work within suitable western pond turtle habitat. If a turtle is found during the daily preconstruction survey, construction in the vicinity of the turtle will not commence until the turtle is removed from the Project area to be relocated to suitable habitat outside of the Project limits per DFG protocols and permits. Relocation sites will be subject to agency approval. Following turtle relocation, the biologist will return to the Project area and monitor construction activities that take place within suitable western pond turtle habitat.				implementation, for enforcement, and for documenting compliance. Exclusion fencing will be established in consultation with DFG and USFWS as necessary. A written report will be submitted to DFG detailing the survey results of any western pond turtles and subsequent relocation activities (if necessary).
Mitigation Measure BIO3.1—Establish Buffer Zones for Nesting Raptors and Migratory Birds (Excluding Burrowing Owl). Prior to the start of construction activities that begin during the migratory bird nesting period (between January 15 and August 31 of any year), SFCJPA will retain a qualified wildlife biologist to conduct a survey for nesting raptors and migratory birds that could nest along the Project corridor, including special-status species such as salt marsh common yellowthroat, Alameda song sparrow, northern harrier, and white-tailed kite. Surveys will cover all suitable raptor and migratory bird nesting habitat that will be impacted directly or indirectly through disturbance, including habitat potentially used by ground-nesting migratory bird species. All migratory bird nesting surveys will be performed no more than 2 weeks (14 days) prior to any Project-related activity that could pose the potential to affect migratory birds. If a lapse in Project-related work of 2 weeks or longer occurs, another focused survey will be conducted before Project work can be reinitiated. With the exception of raptor nests, inactive bird nests may be removed. No birds, nests with eggs, or nests with hatchlings will be disturbed. In addition, nesting bird preconstruction surveys will occur prior to ground disturbance, including site	All Project elements, prior to construction	A qualified wildlife biologist retained by the SFCJPA will be responsible for conducting the surveys described in this measure. If any active nests are identified, s/he will coordinate with DFG to establish buffers, will install or oversee the installation of exclusion fencing, and will determine when the nest(s) are no longer active.	Any buffers that are established as a result of surveys will remain in place as long as the nest is active or young remain in the area, as determined by the qualified wildlife biologist.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Buffer zones will be established in consultation with DFG as necessary.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
preparation. If an active nest is discovered during these surveys, the qualified wildlife biologist will establish a no-disturbance buffer zone around the nest tree (or, for ground-nesting species, the nest itself). The no-disturbance zone will be marked with flagging or fencing that is easily identified by the construction crew and will not affect the nesting bird. In general, the minimum buffer zone widths will be 0.5-mile for bald and golden eagles, 25 feet (radius) for nonraptor ground-nesting species; 50 feet (radius) for nonraptor shrub- and tree-nesting species; and 250 feet (radius) for all raptor species. Buffer widths may be modified based on discussion with DFG, depending on the proximity of the nest, whether the nest would have a direct line of sight to construction activities, existing disturbance levels at the nest, local topography and vegetation, the nature of proposed activities, and the species potentially affected. Buffers will remain in place as long as the nest is active or young remain in the area. No construction presence or activity of any kind will be permitted within a buffer zone until the biologist determines that the young have fledged and moved away from the area and the nest is no longer active. If monitoring of active nests indicates that disturbance is affecting active nests, buffer widths will be increased until the disturbance no longer affects the nest(s). If the buffer cannot be extended further, then work within the area will stop until the nest is no longer active.				
Mitigation Measure BIO4.1—Implement Survey and Avoidance Measures for Western Burrowing Owls Prior to Construction Activities. Prior to any construction activity planned to begin during the fall and winter nonnesting season (September 1-January 31), SFCJPA will retain a qualified wildlife biologist to conduct a preconstruction survey for burrowing	All Project elements, prior to construction	A qualified wildlife biologist retained by the SFCJPA will be responsible for conducting the surveys described in this measure. If individuals are observed outside the	During the nonnesting season (September 1-January 31), surveys will be conducted no more than 7 days prior to ground-disturbing activities. For sites where	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Buffers will be established in consultation with DFG as

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
owls. Surveys will be conducted no more than 7 days prior to ground-disturbing activities and will cover all suitable burrowing owl habitat subject to disturbance. If any western burrowing owls are found within the disturbance area during the survey or at any time during the construction process, SFCJPA will notify DFG and will proceed under DFG direction. If construction is planned to occur during the nesting season (February 1-August 31), surveys for nesting owls will be conducted by a qualified wildlife biologist in the year prior to construction to determine if there is breeding within 250 feet of the construction footprint. This prior-year survey will provide the Project team advance notice regarding nesting owls in the Project area and allow ample time to discuss with DFG the appropriate course of action if nesting owls are found. In addition, same-year preconstruction surveys for nesting western burrowing owls will be conducted no more than 7 days prior to ground disturbance in all suitable burrowing owl habitat. If the biologist identifies the presence of a nesting burrowing owl in an area scheduled to be disturbed by construction, a 250-foot no-activity buffer will be established and maintained around the nest while it is active. Surveys and buffer establishment will be performed by qualified wildlife biologists, will be coordinated with DFG, and will be subject to DFG review and oversight.		nesting period, s/he will coordinate with DFG to identify and implement appropriate measures. If active nests are identified, s/he will coordinate with DFG to establish buffers, will install or oversee the installation of exclusion fencing, and will determine when the nest(s) are no longer active.	construction work is scheduled to occur between February 1 and August 31, surveys will be completed before any site preparation or construction activities begin. Surveys will take place no more than 7 days prior to ground disturbance. Any buffers that are established as a result of the surveys will remain in place as long as the nest is active, as determined by the qualified wildlife biologist.	necessary. A written report will be submitted to DFG detailing the survey results of any western burrowing owls found on the Project site.
Mitigation Measure BIO5.1—Implement Survey and Avoidance Measures for California Clapper Rail and California Black Rail Prior to Construction Activities. Work activities within 50 feet of California clapper rail habitat will not occur within two hours before or after extreme high tides (6.5 feet or above) when the marsh plain is inundated, which could prevent individuals from reaching available cover. If work is to be conducted during the species' breeding and rearing seasons (March–August 31) within 700 feet of suitable habitat, a permitted	All Project elements, prior to construction	A qualified biologist retained by the SFCJPA will be responsible for the surveys described in this measure and for any needed consultation with DFG.	Surveys will take place no more than 48 hours prior to the onset of work.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
biologist will be retained to conduct surveys of appropriate habitat for California clapper rail and California black rail. The surveys will be conducted no more than 48 hours prior to commencement of construction and maintenance activities and will be performed at dawn or dusk, the vocalization periods of highest intensity. Project activities occurring within 700 feet of active nests will be postponed until after young have fledged. Outside of breeding season, a permitted biologist will be retained to conduct surveys of appropriate habitat for California clapper rail and California black rail within the work area, including all staging and access routes, no more than 7 days prior to initiation of work within suitable habitat. If individuals are observed during this survey, a biologist will conduct an additional survey immediately prior to initiation of construction activities. If individuals are observed within or near the work area, a no-disturbance buffer (minimum 50 feet) will be implemented. If the daily work area is expanded, then a qualified biologist will survey the suitable habitat prior to initiation of work and movement of equipment that day. No work will occur within the buffer until the biologist verifies that California clapper rail or California black rail individuals have left the area. If individuals are routinely observed in the work area, a species avoidance plan will be developed in coordination with USFWS and DFG. If no individuals are observed in accordance with the survey protocols, no buffers will be required. All vegetation removal within suitable habitat of these species, as determined by a biologist, will be done by hand to the extent possible. If movement of heavy equipment in necessary in suitable habitat or within 50 feet of habitat, then a biological monitor will observe the area in front of the equipment from a safe vantage point. If these species are detected within the area in front of the equipment, then the equipment will stop and the				enforcement, and for documenting compliance. Protection measures will be identified in consultation with DFG and USFWS as necessary.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
biologist will direct the equipment on an alternative path. If this is not possible, then equipment will stop until a clear path can be identified.				
Mitigation Measure BIO5.2—Produce and Implement Habitat Monitoring Plan for Habitat within the Faber Tract Prior to Construction Activities. The SFCJPA or its approved designee will be responsible for the development and implementation of a habitat monitoring plan for existing (i.e., pre-Project) habitat within the Faber Tract that will document baseline conditions prior to Project implementation. The plan will include routine monitoring of the habitat within the Faber Tract to document changes resulting from the hydrologic reconnection of San Francisquito Creek and potential subsequent flooding into the Faber Tract. The habitat monitoring plan will include adaptive management measures to rectify potential conversion of habitat types and other issues that might arise in the Faber Tract as a result of Project implementation. Additionally, contingency measures will be developed and included in the plan in the event of habitat conversion or loss resulting from the Project. Plan approval by USFWS and DFG will be necessary before implementation of activities recommended by the plan. Routine monitoring reports will be submitted to the appropriate agencies following their completion.	All Project elements, prior to construction	A qualified biologist retained by the SFCJPA will be responsible for Plan development described in this measure, coordination with DFG, and for any needed follow-up activities.	Coordination with DFG will be initiated before any construction activity begins, and will remain in effect for the duration of the Project. The plan for the site will be completed and approved by DFG prior to groundbreaking.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. The plan would be finalized in consultation with DFG and USFWS as necessary.
Mitigation Measure BIO6.1—Implement Survey and Avoidance Measures for Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew Prior to Construction. Construction and maintenance work, including site preparation, will be avoided to the extent possible within suitable habitat for these species during their breeding seasons (February 1 to November 30). As work during the species' breeding seasons will be necessary, a species avoidance plan will be developed in consultation with USFWS and DFG, and implemented. The avoidance plan, at a	All Project elements, prior to construction	A qualified biologist retained by the SFCJPA will be responsible for the surveys described in this measure and for any needed consultation with DFG.	Surveys will take place no more than 24 hours prior to the onset of work.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
minimum, will include: • Hand vegetation removal shall start at the edge farthest form the largest contiguous salt marsh area and work its way towards the salt marsh, providing cover for salt marsh harvest mice and allowing them to move towards the salt marsh as vegetation is being removed. • In consultation with DFG, exclusion fencing shall be placed around a defined work area immediately following vegetation removal and before Project activities begin. The final design and proposed location of the fencing shall be reviewed and approved by DFG prior to placement. • Prior to initiation of work each day within 300 feet of tidal or pickelweed habitats, the qualified biologist shall thoroughly inspect the work area and adjacent habitat areas to determine if saltmarsh harvest mice are present. The biologist shall ensure the exclusion fencing has no holes or rips and the base remains buried. The fenced area will be inspected daily to ensure that no mice are trapped. Prior to initiation of work within suitable habitat, a permitted biologist will be retained to monitor the hand removal of pickleweed to avoid impacts on salt marsh harvest mouse and salt marsh wandering shrew. Monitoring will occur for the duration of all clearing work within suitable habitat, and all clearing of pickleweed will be conducted by hand. If salt marsh harvest mouse or salt marsh wandering shrew are observed during clearing activities, clearing will cease and workers will move to a new area. Clearing work may begin in the area of the observation 1 day or more after the observation date.				proper implementation, for enforcement, and for documenting compliance. Protection measures will be identified in consultation with DFG and USFWS as necessary.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
During the survey, if salt marsh harvest mouse or salt marsh wandering shrew individuals are observed, or if active nests of these species are observed, proposed Project activities within 100 feet of the observation will be postponed and a no-disturbance buffer will be established. The buffer will remain in place until the biologist determines that the individuals have left the area and are not present in or near (100 feet) of the work area. If no individuals are observed in accordance with the survey protocols, no buffers will be required. Work activities within 50 feet of salt marsh harvest mouse habitat will not occur within two hours before or after extreme high tides (6.5 feet or above) when the marsh plain is inundated, which could prevent individuals from reaching available cover.				
Mitigation Measure BIO7.1—Implement Survey and Avoidance Measures for California Least Tern and Western Snowy Plover Prior to Construction Activities. Construction work, including site preparation, will be avoided to the extent possible within and near (700 feet) suitable habitat for these species during their breeding seasons (March 1 to August 31). Western snowy plover may be present within suitable habitat year-round. Prior to the initiation of work within 700 feet of suitable habitat (regardless of the time of year), a permitted biologist will be retained to conduct surveys of appropriate habitat for California least tern and western snowy plover and their nests. The surveys will be conducted no more than 48 hours prior to commencement of construction activities and will be performed during optimal observation periods when these species are most active. If active nests for California least tern or western snowy plover are observed or heard during the survey, Project activities within 500 feet of the observation will be postponed until young have fledged. If individuals are observed outside of the breeding season	All Project elements, prior to construction	A qualified biologist retained by the SFCJPA will be responsible for the surveys described in this measure and for any needed consultation with DFG.	Surveys will take place no more than 48 hours prior to the onset of work.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Protection measures will be identified in consultation with DFG and USFWS as necessary.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
within 500 feet of the work area, a biologist will establish a no-disturbance buffer. No work will occur within the buffer until the biologist verifies that individuals have left the area. If individuals are routinely observed in or within 500 feet of the work area or do not leave the work area, species avoidance plan will be developed in coordination with USFWS and DFG. If no individuals are observed in accordance with the survey protocols, no buffers will be required.				
Mitigation Measure BIO8.1—Implement Survey and Avoidance Measures for California Red-Legged Frog and San Francisco Garter Snake Prior to Construction Activities. SFCJPA will retain a permitted biologist to conduct a survey of the freshwater ponds and surrounding upland habitat prior to initiation of construction activities. The surveys will be conducted according to applicable protocols and will be performed during optimal observation periods of the day when detection potential for these species is maximized. The survey will be conducted prior to initiation of construction, but such that enough time is allowed to coordinate with USFWS and DFG to develop a species avoidance plan if needed. If California red-legged frog or San Francisco garter snake individuals are observed or heard during the survey, proposed Project activities within 500 feet of the observation will be postponed. A species avoidance plan will be developed in coordination with USFWS and DFG and implemented during construction and maintenance. If no individuals are observed during the surveys, no further action will be necessary.	All Project elements, prior to construction	The SFCJPA will retain a qualified wildlife biologist to implement this measure.	The surveys and any needed relocation of individuals described in this measure will be performed before site preparation and construction activity begins. Fencing will remain in place for the duration of construction or maintenance activity.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Relocation sites will be established in consultation with DFG and USFWS as necessary. A written report will be submitted to DFG and USFWS detailing the survey results of listed amphibians and subsequent relocation activities (if necessary).

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Mitigation Measure BIO9.1—Implement Avoidance Measures for Steelhead Trout Prior to Construction Activities. No in-channel construction activities will occur during the steelhead migration period (October 1–April 30), to reduce the likelihood that steelhead are present during construction activities. A qualified fisheries biologist, approved by NMFS, will survey the construction area 1 to 2 days before the Project begins. If no surface water is present in the immediate construction area, fish will not be relocated. If water is present, the following procedures will be implemented. • Before a work area is dewatered, fish will be captured and relocated to avoid injury and mortality and minimize disturbance. • Before fish relocation begins, a qualified fisheries biologist will identify the most appropriate release location(s). Release locations should have water temperatures similar to the capture location and offer ample habitat for released fish, and should be selected to minimize the likelihood that fish will reenter the work area or become impinged on the exclusion net or screen. At this time the open reach below the Project site is anticipated to have suitable conditions for relocation. • Seining or dip netting will be utilized to keep stress and injury to fish at a minimum. Given the salinity of the Project reach, electrofishing will not be utilized. • To the extent feasible, relocation will be performed during morning periods. Water temperatures will be measured periodically, and relocation activities will be suspended if water temperature exceeds 18^0C (National Marine Fisheries Service 2000).	All Project elements, prior to construction	A qualified biologist retained by the SFCJPA will be responsible for the surveys described in this measure and for any needed consultation with NMFS.	Surveys will take place no more than 48 hours prior to the onset of work.	For the construction period, the SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. For the operational period, the SFCJPA's designated maintenance manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. Protection measures will be identified in consultation with NMFS as necessary.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
• Handling of salmonids will be minimized. When necessary, personnel will wet hands or nets before touching fish. • Fish will be held temporarily in cool, shaded water in a container with a lid. Overcrowding in containers will be avoided. Fish will be relocated promptly. If water temperature reaches or exceeds NMFS limits, fish will be released and relocation operations will cease. • If fish are abundant, capture will cease periodically to allow release and minimize the time fish spend in holding containers. • Fish will not be anesthetized or measured. However, they will be visually identified to species level, and year classes will be estimated and recorded. • Reports on fish relocation activities will be submitted to DFG and NMFS within 30 days of completion. • If mortality during relocation exceeds 5% or mortality of any State or Federal listed species occurs, relocation will cease and DFG and NMFS will be contacted immediately or as soon as feasible. • Fish relocation efforts will be performed concurrent with the installation of the diversion and will be completed before the channel is fully dewatered. The fisheries biologist will perform a second survey 1 to 2 days following the installation of the diversion to ensure that fish have been excluded from the work area and spot checks will be performed at least biweekly while the diversion is in place.				

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Mitigation Measure BIO11.1—Identify and Protect Riparian Habitats. To avoid unnecessary damage to or removal of riparian habitat, the SFCJPA will retain a qualified biologist or ecologist to survey and demarcate riparian habitat on or adjacent to the proposed areas of construction in the upper reach of San Francisquito Creek. Riparian areas not slated for trimming or removal to accommodate Project construction will be protected from encroachment and damage during construction by installing temporary construction fencing to create a no-activity exclusion zone. Fencing will be brightly colored and highly visible, and installed under the supervision of a qualified biologist to prevent damage to riparian habitat during installation. The fencing will protect all potentially affected riparian habitat consistent with International Society of Arboriculture tree protection zone recommendations and any additional requirements of the resource agencies with jurisdiction. Fencing will be installed before any site preparation or construction work begins and will remain in place for the duration of construction. Riparian vegetation that must be trimmed will be trimmed by an International Society of Arboriculture certified arborist who will minimize stress and potential damage to trees and shrubs. Construction personnel will be prohibited from entering the exclusion zone for the duration of Project construction. Access and surface-disturbing activities will be prohibited within the exclusion zone.	All Project elements, prior to construction	A qualified botanist or ecologist retained by the SFCJPA will establish the setback buffers (i.e., determine their location and extent). The qualified botanist/ecologist will either install the construction fencing to protect riparian habitat within the setback, or will supervise installation by construction personnel.	Surveys will be conducted and setbacks will be established and fenced before work begins. Fencing will remain in place for the duration of construction, site finishing, and demobilization.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure BIO11.2—Restore Riparian Habitat. The SFCJPA will be responsible for restoring permanently affected riparian habitat at a mitigation-to-impact ratio of 2:1, and restoring temporarily affected habitat at a minimum impact-to-mitigation ratio of 1:1 to ensure no net loss of riparian habitat in the affected stream reach. The SFCJPA will develop a Mitigation and Monitoring Plan (MMP) to ensure that all removed habitat is replaced "in kind" with	All Project elements, prior to construction	A qualified botanist/ecologist retained by the SFCJPA will be responsible for identifying and mapping riparian areas and preparing the MMP.	The MMP will be developed and restoration will be planned during the permit process, prior to groundbreaking. The MMP will remain in force until the success criteria described in the plan are met.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. The MMP will be developed in consultation with resource agency staff.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
the appropriate native overstory and understory species to maintain structural complexity and habitat value. The MMP will be developed in the context of the federal and state permitting processes under the CWA and California Department of Fish and Game Code, and will include success criteria as specified by the permitting agencies. The MMP will also include adaptive management guidelines for actions to be taken if the success criteria are not met. The success criteria will be met if 80% of the riparian plantings become established after 10 years. Monitoring will occur, at a minimum, during years 1, 2, 3, 5, 7, and 10, with the plantings taking place in year 0.The initial annual monitoring will assess progress of the plantings according to predetermined success criteria. If progress is not satisfactory, adaptive management actions (including replanting, nonnative species removal, etc.) could be implemented. The MMP will remain in force until the success criteria are met.				
Mitigation Measure BIO12.1—Avoid and Protect Jurisdictional Wetlands during Construction. The SFCJPA will ensure that a qualified resource specialist (biologist, ecologist, or soil scientist) will clearly identify wetland areas outside of the direct impact footprint with temporary orange construction fencing before site preparation and construction activities begin at each site or will implement another suitable low-impact measure. Construction will not encroach upon jurisdictional wetlands identified by the wetland specialist. The resource specialist will use the wetland delineation (ICF 2012) mapping prepared for the proposed Project and will confirm or modify the location of wetland boundaries based on existing conditions at the time of the survey. Exclusion fencing will be installed before construction activities are initiated, and the fencing will be maintained throughout the construction period. No construction activity, traffic, equipment, or	All Project elements, prior to construction	A qualified botanist or ecologist retained by the SFCJPA will establish the setback buffers (i.e., determine their location and extent). The qualified botanist/ecologist will either install the construction fencing to protect jurisdictional wetlands within the setback, or will supervise installation by construction personnel.	At each site, all setbacks will be established and fenced before work begins. Fencing will remain in place for the duration of construction, site finishing, and demobilization.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
materials will be permitted in fenced wetland areas.				
Mitigation Measure BIO13.1—Transplant or Compensate for Loss of Protected Landscape Trees, Consistent with Applicable Tree Protection Regulations. Protected landscape trees slated for removal and deemed good candidates for transplantation will be considered for transplanting in conjunction with the proposed landscaping plans. Transplanted trees will be located on the site if space permits. If the number of trees to be transplanted is too large to be accommodated on the Project site, the SFCJPA will prepare a landscaping plan detailing other locations where transplanted trees will be planted, consistent with the requirements of the applicable tree protection ordinance or regulations. Transplanted trees will be subject to the monitoring and replacement requirements identified for replacement trees below. Protected landscape trees not deemed good candidates for transplantation will be replaced. The landscaping plan for tree replacement will specifically identify the locations where replacement trees are to be planted; replacements will be planted on the site, if possible. The landscaping plan will be subject to review and approval by the agency with jurisdiction (Santa Clara County, San Mateo County, City of Palo Alto, or City of East Palo Alto). Tree removals within the Cities of Palo Alto and East Palo Alto will be compensated for at a mitigation-to-impact ratio of 1:1, or as determined by the City. Species and location of the replacement tree will be determined in consultation with the property owner and the City. Impacted mitigation trees associated with the Matadero Creek and Palo Alto Pump Station projects would be replaced in accordance with the terms and conditions of the respective permits for those projects and in consultation with the	All Project elements, prior to construction	Surveys and reporting will be performed by an ISA- (International Society of Arboriculture) or ASCA- (American Society of Consulting Arborists) certified arborist retained by the SFCJPA. Landscape plans will be developed by a licensed landscape architect and/or civil engineer in consultation with the arborist and SFCJPA project manager. Transplantation and compensation plantings will be performed by contractor staff under the supervision of the certified arborist.	The arborist surveys will be performed during Project design. The landscaping plan, which will determine the feasibility of transplanting protected landscape trees, will be completed prior to groundbreaking. Transplantation efforts, if determined feasible by the certified arborist, will take place during construction as protected landscape trees are removed. If transplantation is not feasible, compensation will be arranged, and if possible, completed prior to groundbreaking. Any onsite compensation plantings will be provided during Project construction/ site finishing.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
responsible permitting authorities for those projects, should the monitoring period for successful completion of mitigation requirements not be completed at the time of construction. The SFCJPA will be responsible for ensuring newly planted trees will be monitored at least once a year for 3 years. Each year, trees that do not survive will be replaced in a manner consistent with the compensation required under the applicable tree ordinance. Trees planted as remediation for failed plantings will then be monitored for a period of 3 years in the same manner, and trees that do not survive will be replaced. Trees that are replaced will be consistent with the Guidelines and Standards for Land Uses near Streams prepared by the Santa Clara Valley Water Resources Protection Collaborative. The SFCJPA will be responsible for the removal of irrigation systems that are no longer used following tree establishment. Inactive irrigation systems will be removed within 5 years of satisfaction of the mitigation measure.				
Mitigation Measure BIO13.2—Protect Remaining Trees from Construction Impacts. Trees not designated for removal will be protected from damage during construction by the installation of temporary fencing in a manner consistent with International Society of Arboriculture tree protection zone recommendations. Fencing will keep construction equipment away from trees and prevent unnecessary damage to or loss of protected trees on the Project site. Protected trees retained on the site and located adjacent to construction activities will be monitored as specified for newly planted trees (see Mitigation Measure BIO13.1) and replaced if they do not survive through the monitoring period.	All Project elements, prior to construction	An ISA- (International Society of Arboriculture) or ASCA- (American Society of Consulting Arborists) certified arborist retained by the SFCJPA will either install the construction fencing to protect remaining trees within the setback, or will supervise installation by construction personnel. Follow up monitoring will also be performed by a certified arborist.	At each site, all setbacks will be established and fenced before any site preparation or construction activities are permitted to commence.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Cultural and Paleontological Resources				
Mitigation Measure CR1.1—Conduct a Pre-Construction Cultural Field Survey and Cultural Resources Inventory and Evaluation. The SFCJPA will retain qualified personnel to conduct an archaeological field survey of the Project area to determine whether significant resources exist within the Project area. The inventory and evaluation will include the documentation and result of these efforts, the evaluation of any cultural resources identified during the survey, and cultural resources monitoring, if the survey identifies that it is necessary. The monitoring process will be carried out in combination with the District's standard BMPs.	All Project elements, prior to construction groundbreaking	A qualified architectural historian retained by the SFCJPA will be responsible for conducting the historical resources evaluation described in this measure.	The historical resources evaluation will be conducted during preparation of the National Historic Preservation Act Section 106 report required for the permit process, and will be completed prior to site preparation or construction activities.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure CR1.2—Conduct Worker Awareness Training for Archaeological Resources Prior to Construction. Prior to the initiation of any site preparation and/or start of construction, the applicant will ensure that all construction workers receive training overseen by a qualified professional archaeologist who is experienced in teaching nonspecialists, to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.	All Project elements, prior to construction groundbreaking	A qualified archaeologist retained by the SFCJPA will be responsible for conducting the construction monitoring described in this measure.	This measure will remain in effect for the duration all ground-disturbing activities.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure Paleo1.1—Conduct a Pre-Construction Paleontological Resources Field Survey and Paleontological Resources Inventory and Evaluation. The SFCJPA will retain qualified personnel with experience in vertebrate fossil monitoring and salvage at construction sites to conduct a paleontological resources field survey of the Project area with native soils to determine whether significant resources exist within the Project area. The inventory and evaluation will include the documentation and result of these	All Project elements, prior to construction groundbreaking	A qualified paleontologist retained by the SFCJPA will be responsible for conducting the survey. If salvage and/or protection are required, measures will be designed and implemented by the qualified paleontologist	Surveys will be conducted prior to ground disturbance, and with enough lead time to allow for salvage and/or protection. If salvage or protection is needed, these operations will also be completed prior to construction ground	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
efforts, the evaluation of any paleontological resources identified during the survey, and paleontological resources monitoring, if the survey identifies that it is necessary.		in consultation with the SFCJPA's project manager.	disturbance.	
Mitigation Measure Paleo 1.2—Conduct Worker Awareness training for Paleontological Resources Prior to Construction. Prior to the initiation of any site preparation and/or start of construction, the applicant will ensure that all construction workers receive training overseen by a qualified professional paleontologist who is experienced in teaching nonspecialists, to ensure that forepersons and field supervisors can recognize paleontological resources in the event that any are discovered during construction.	All Project elements, prior to construction groundbreaking	The SFCJPA will retain a qualified paleontologist or California-licensed professional geologist (PG) experienced in training non-specialists to deliver the required training.	Training will occur prior to groundbreaking.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure CR1.3—Stop Work Immediately if Buried Cultural Resources are Discovered Inadvertently. If paleontological resources are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified paleontologist with experience in vertebrate fossil monitoring and salvage at construction sites can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the SFCJPA and other agencies as appropriate. Equipment operators, supervisors, inspectors, and other field personnel will be required to report to the paleontology monitor any suspected fossil discoveries. The paleontologist will have authority to halt or redirect excavation operations in the event of discovery of vertebrate, plant, or invertebrate fossils until such time as their probable significance can be assessed and, if potentially significant, appropriate salvage measures have been implemented. The paleontologist will properly collect and document any large vertebrate remains and recognize and appropriately sample and	All Project elements, during construction	Stop work orders may be issued by the qualified paleontologist, or by the construction foreperson in response to discoveries by construction workers. All SFCJPA and contractor staff will be responsible for adhering to stop work orders. Any follow-up (evaluation, treatment) will be performed by or under the supervision of the qualified paleontologist.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
document any sedimentary bodies revealing small vertebrate remains. Large bulk samples may be appropriate. Minimum documentation includes exact location (GPS data), orientation, depth (elevation), and detailed geologic setting of any large- or small-vertebrate finds, including detailed diagrams showing microstratigraphy in nearby excavations supplemented with good-quality field photographs. If vertebrate fossils are discovered in spoils piles during excavation, the paleontologist will make every effort to locate and record the original site of the specimen(s) prior to disturbance. Should ground-disturbing activities within Caltrans ROW make an inadvertent burial discovery, all construction within 50 feet of the find shall cease. Caltrans' Cultural Resource Studies Office, District 4, shall be immediately contacted at (510) 286-5618. A Caltrans staff archaeologist will evaluate the finds within one business day after contact. Salvage of potentially significant specimens discovered in situ in excavated surfaces will be conducted by the paleontologist in compliance with all safety regulations and with implementation of all feasible precautions. The on-site safety inspector will hold final authority to determine whether each proposed salvage operation is consistent with established safety policies at the site. Excavation equipment and operators will be made available for short periods to remove overburden above in situ specimens, to improve safety conditions during salvage operations, or to aid in transport within the site boundaries of any large salvaged specimens which cannot be safely transported by hand. Any potentially significant fossils recovered during the monitoring and salvage phase will be cleaned, repaired, and hardened to the level required by the repository institution, and will be donated to that institution. Any collected bulk				

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
sediment samples having the potential for small fossil vertebrate remains will be wet- or dry-screened and processed as necessary for recovery of the included fossils. Details of requirements and conditions for transfer of salvaged specimens to the repository museum will be arranged with the museum as soon as the scope of the salvaged collection becomes apparent, and will be in accordance with the recommendations outlined in SVP 1996. On completion of the above tasks, the supervising paleontologist will prepare a final report on the implementation of the mitigation plan and results and submit it to the appropriate parties, institutions, and government agencies.				
Greenhouse Gas Emissions				
Mitigation Measure GHG1.1—Implement BAAQMD Best Management Practices for Construction: • Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet; • Use at least 10 percent local building materials (from within 100 miles of the Project site); • Recycle at least 50 percent of construction waste or demolition materials.	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Hazardous Materials and Public Health				
Mitigation Measure HAZ1.1—Preparation and Implementation of a Spill Prevention, Control, and Countermeasure Plan. The Project applicant with prepare and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan to minimize the potential for, and effects from, accidental spills of hazardous, toxic, or petroleum substances during construction of the Project. The SPCC will be completed before any construction activities begin.	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Mitigation Measure HAZ1.2—Require Proper Storage and Handling of Potential Pollutants and Hazardous Materials. The storage and handling of potential pollutants and hazardous materials, including, but not necessarily limited to, gasoline, diesel, oils, paint, and solvents, will be in accordance with all local, state and federal laws and other requirements. Temporary storage enclosures, double walled tanks, berms, or other protective facilities will be provided as required by law. All hazardous materials will be stored and handed in strict accordance with the Material Safety Data Sheets for each product. A copy of each Materials Safety Data Sheet will be submitted to the Project Engineer at the time of delivery of the products to the Project site.	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure HAZ2.1—Stop Work and Implement Hazardous Materials Investigations and Remediation in the Event that Unknown Hazardous Materials Are Encountered. In the event that unknown hazardous materials are encountered during construction monitoring or testing of soil suitability, all work in the area of the discovery will stop and SFCJPA will conduct a Phase II hazardous materials investigation to identify the nature and extent of contamination and evaluate potential impacts on Project construction and human health. A Phase I investigation will be done concurrent with or prior to Phase II. If necessary, based on the outcomes of the Phase II investigation, SFCJPA will implement remediation measures consistent with all applicable local, state, and federal codes and regulations. Construction in areas known or reasonably suspected to be contaminated will not resume until remediation is complete. If waste disposal is necessary, SFCJPA will ensure that all hazardous materials removed during construction are handled and disposed of by a licensed waste-disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
disposal or recycling facility, in accordance with local, state, and federal requirements.				
Mitigation Measure HAZ8.1—Prevent Mosquito Breeding During Project Construction. To prevent mosquito breeding during Project construction, SFCJPA will ensure that standing water that accumulates on the construction site is gone within 4 days (96 hours). All outdoor grounds will be examined and unnecessary water that may stand longer than 96 hours will be drained. Construction personnel will property dispose of unwanted or unused artificial containers and tires. If possible, any container or object that holds standing water that must remain outdoors will be covered, inverted, or have drainage holes drilled.	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Hydrology and Water Resources				
Mitigation Measures HWR1.1—Design of Temporary Re-location of Storm Drainage Facilities during Construction. A temporary disruption in stormwater conveyance facilities located in the immediate Project construction footprint could result in the temporary relocation and re-routing of outfalls. The temporary design will include the necessary review and assessment of alternative routes and ancillary facilities to ensure that they can safely accommodate the re-directed flow to the same level of design and performance (i.e., storm drain capacity) as that of the existing facilities until such time that the original facilities are restored.	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measures HWR1.2—Design of Permanent Relocation of Storm Drainage Facilities. The permanent relocation of stormwater conveyance facilities would be designed so as not to alter the original outlet locations and internal routes. The design will include the necessary review and assessment of pipeline additions and ancillary facilities to ensure that they can safely accommodate flood flows to	All Project elements, prior to construction groundbreaking	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
the same level of design and performance (i.e., storm drain capacity) as that of the existing facilities.				
Noise				
Mitigation Measure NV2.1—Conduct Construction Vibration Assessment and Implement Recommended Vibration Control Approach(es) for Culvert Installation. During final design, the SFCJPA will retain a qualified, state-licensed geotechnical professional to determine site-specific soil stratigraphy and engineering properties and model anticipated vibration levels from the anticipated culvert construction activities based on soil properties. If the anticipated vibration level at any home exceeds 80 VdB or 0.2 in/sec, the SFCJPA will modify the proposed construction approach to ensure that both thresholds can be achieved, avoiding annoyance and structural damage.	All Project elements, during construction	A qualified, state-licensed geotechnical engineer retained by the SFCJPA will conduct the vibration assessment. If modifications to Project design are required to meet the thresholds in this mitigation measure, they will be developed by the design team in consultation with the geotechnical engineer, at the direction of the SFCJPA project manager.	This measure will be implemented during Project design.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure NV4.1—Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents. SFCJPA will provide advance written notification of the proposed construction activities to all residences and other noise- and air quality–sensitive uses within 750 feet of the construction site. Notification will include a brief overview of the proposed Project and its purpose, as well as the proposed construction activities and schedule. It will also include the name and contact information of SFCJPA's project manager or another SFCJPA representative or designee responsible for ensuring that reasonable measures are implemented to address the problem (the construction noise and air quality disturbance coordinator; see Mitigation Measure NV4.3).	All Project elements, during construction	SFCJPA staff will implement this measure at the direction of the SFCJPA project manager.	Advance written notification of proposed construction activities will be provided at least 1 month and not more than 3 months in advance of site work. The 24-hour hotline will be in operation for the duration of construction at each site, including site finishing and demobilization.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure NV4.2—Implement Work Site Noise Control Measures. To reduce noise impacts, SFCJPA will require all contractors to adhere to the following measures. SFCJPA will be	All Project elements, during construction and operation	The construction manager/ foreperson will implement this measure.	This measure will remain in effect for the duration of construction at each site.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
responsible for ensuring implementation. • All construction equipment will be equipped with manufacturer's standard noise control devices or with equally effective replacement devices consistent with manufacturer specifications. • Stationary noise-generating equipment will be located as far as possible from sensitive receptors, and, if feasible, will be shielded by placement of other equipment or construction materials storage. • Contractors will be required to use ambient-sensitive backup alarms.				enforcement, and for documenting compliance.
Mitigation Measure NV4.3—Designate a Noise and Air Quality Disturbance Coordinator to Address Resident Concerns. SFCJPA will designate a representative to act as construction noise and air quality disturbance coordinator, responsible for resolving construction noise and air quality concerns. The disturbance coordinator's name and contact information will be included in the preconstruction notices sent to area residents (see Mitigation Measure NV4.1). She or he will be available during regular business hours to monitor and respond to concerns; if construction hours are extended, the disturbance coordinator will also be available during the extended hours. In the event an air quality or noise complaint is received, she or he will be responsible for determining the cause of the complaint and ensuring that all reasonable measures are implemented to address the problem.	All Project elements, during construction	The SFCJPA's project manager will designate a noise disturbance coordinator. The noise disturbance coordinator will be responsible for receiving and responding to noise complaints, and will coordinate with the SFCJPA project manager to implement timely solutions.	This measure will remain in effect for the duration of Project construction. Resolutions to noise complaints will be provided as rapidly as possible.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance.
Mitigation Measure NV4.4—Install Temporary Noise Barriers. As described in Mitigation Measures NV1.1, NV1.2, and NV1.3, SFCJPA will notify noise-sensitive land uses near the site of upcoming activity before construction begins, will	All Project elements, during construction	Noise barriers will be installed by contractor staff at the direction of the SFCJPA project manager	This measure will remain in effect for the duration of construction.	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
require construction-site noise reduction measures, and will provide a 24 hour complaint hotline. If a resident or school employee submits a complaint about construction noise and SFCJPA is unable to reduce noise levels to below the significance threshold (exceeding 110 dBA at a distance of 25 feet) through other means, SFCJPA will install temporary noise barriers to reduce noise levels below the applicable construction noise standard. Barriers will be installed as promptly as possible, and work responsible for the disturbance will be suspended or modified until barriers have been installed. SFCJPA will include a construction bid item to provide noise barriers onsite and install noise barriers immediately in response to noise or dust concerns from the community. The following minimum criteria will be required of the contractor. • The barrier will be 10 feet tall. It will surround the work area to block the line of sight for all diesel-powered equipment on the ground, as viewed from any private residence or any building. • The barrier will be constructed of heavyweight plywood (5/8 inch thick) or other material providing a Sound Transmission Classification of at least 25 dBA. (Note that 5/8 inch is sufficiently thick to provide optimal noise buffering; increasing the thickness of the barrier above 5/8 inch would not provide a noticeable improvement in noise reduction.) • The barrier will be constructed with no gaps or holes that would allow noise to transmit through the barrier. • To minimize reflection of noise toward workers at the construction site, the surface of the barrier facing the workers will be covered with a sound-absorbing material meeting a Noise				documenting compliance.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Reduction Coefficient of at least 0.70.				
Recreation				
Mitigation Measure REC-1—Compensate the City of Palo Alto for the Conversion of 7.4 Acres of the Palo Alto Municipal Golf Course to Accommodate Project Features. In order to replace permanently affected holes at the Golf Course, compensate the City of Palo Alto an amount equivalent to the cost of replacing golf holes 12 through 15 within the Project footprint, and the relocation of other holes accommodate the new holes 12 through 15, so that the Golf Course can remain a PGA-regulation 18-hole course. To ensure this mitigation measure will be implemented, SFCJPA and City of Palo Alto will enter into a Memorandum of Understanding no later than 30 days prior to the initiation of construction that will require SFCJPA to fund improvements at the Golf Course. SFCJPA and the City of Palo Alto will mutually agree on the amount and timing of the deposit, which will be determined by the results of site evaluation and preliminary design conducted by a certified golf course architect. Money will be used exclusively for mitigation of impacts on the Golf Course that are related to the Project.	All Project elements, prior to and during construction	The SFCJPA's Executive Director will coordinate with the City of Palo Alto to reach mutually agreeable terms.	The Agreement will be signed by both parties prior to the initiation of construction.	The SFCJPA's Executive Director will be responsible for ensuring proper implementation, and for documenting compliance.
Traffic				
Mitigation Measure TT1—Require a Site-Specific Traffic Control Plan. SFCJPA will develop a site-specific traffic control plan to minimize the effects of construction traffic on surrounding areas and roadways. The plan will be prepared with oversight by a licensed traffic engineer, and with input from school, park and community stakeholders to ensure that all concerns are appropriately addressed. The plan will be subject to review and approval by the Cities of Palo Alto and East Palo Alto. The SFCJPA would also coordinate, as necessary, with Caltrans, for traffic controls and measures affecting Caltrans	All Project elements, prior to and during construction	The SFCJPA's project manager will liaise with the Cities and Caltrans during Project design to identify issues that should be addressed in the site-specific traffic control plan for each work site, and will oversee contractors developing the individual plans.	Coordination will local jurisdictions will be initiated before any construction activity begins, and will remain in effect for the duration of the Project. The traffic control plan for each site will be completed and approved by the local jurisdiction prior to groundbreaking;	The SFCJPA's project manager will be responsible for ensuring proper implementation, for enforcement, and for documenting compliance. The local jurisdiction for each work site will have review and approval authority over the applicable traffic control plan.

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
facilities. The SFCJPA will be responsible for ensuring that the plan is effectively implemented. The traffic control plan will include, at a minimum, information regarding working hours, allowable and restricted streets, allowable times for lane closures, emergency vehicle access, detours, and access to private and public properties. All construction traffic control plans will contain the following general requirements: • Restrict work site access to the roadways indicated on the traffic control plan. • Prohibit access via residential streets unless expressly approved by the City with jurisdiction. • Maintain two-way traffic flow on arterial roadways accessing active work to accommodate construction of Project facilities, or unless otherwise allowed by the City with jurisdiction. • Provide 72-hour advance notification if access to driveways or private roads will be affected. Limit effects on driveway and private roadway access to working hours and ensure that access to driveways and private roads is uninterrupted during non-work hours. If necessary, use steel plates, temporary backfill, or another accepted measure to provide access. • Provide clearly marked pedestrian detours to address any sidewalk or pedestrian walkway closures. • Provide clearly marked bicycle detours to address bicycle route closure or if bicyclist safety would be otherwise compromised. • Provide crossing guards and/or flagpersons as needed to avoid traffic conflicts and ensure pedestrian and bicyclist safety.		Each plan will be developed with oversight from a licensed traffic engineer. All SFCJPA and contractor staff will adhere to the plans.	draft traffic control plans will be submitted for review and approval for each work site. Traffic control plans will be in effect for the entire duration of construction at each site.	

Mitigation Measure	Required for the Following Sites/Project Phases	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
• Use nonskid traffic plates over open trenches to minimize hazards. • Locate all stationary equipment as far away as possible from areas used by vehicles, bicyclists, and pedestrians. • Notify and consult with emergency service providers, and provide emergency access by whatever means necessary to expedite and facilitate the passage of emergency vehicles. Ensure clear emergency access to all existing buildings and facilities at all times. • Trucks will be queued only in areas and at times allowed by the City with jurisdiction. • Provide adequate parking for construction vehicles, equipment, and workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, provide an off-site staging area at another suitable location, and coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site as needed. • Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.				

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