



**DCA**

DELTA  
CONVEYANCE  
DESIGN &  
CONSTRUCTION  
AUTHORITY

DELTA CONVEYANCE  
**Final Draft  
Engineering Project  
Report Update -  
Attachment A**

Bethany Reservoir Alternative  
November 2023

## APPENDIX E - Preliminary Construction Information for EIR Air Quality and Traffic Analyses for the Bethany Reservoir Alternative

This appendix provides preliminary construction information for the Bethany Reservoir related to quantities of equipment and vehicle use, employee travel needs, and earthwork needed to develop air quality and traffic analyses in the EIR for a project design capacity of 6,000 cfs.

This attachment includes workbooks which are organized along the conveyance alignment from the intakes to the Bethany Complex, as follows:

- Intakes and access roads, Hood-Franklin and Charter Way park and ride lots, New Hope Tract and Canal Ranch Tract shafts and access roads, and access roads to Terminus Tract and King Island will be as described under the Eastern Corridor Option with a project design capacity of 6,000 cfs in the Delta Conveyance Final Draft Engineering Project Report Update Central and Eastern Corridor Options.
- This appendix includes the Twin Cities Complex and Franklin Boulevard access; Terminus and King Island shafts; Lower Roberts Island, Upper Jones Tract, and Union Island shafts and access; levee improvements for Lower Roberts Island; and Bethany Complex.

For each feature, the construction information is provided in a format requested by the DCO, including Schedule, Offroad Diesel equipment use, Offroad Electrical equipment use (not including Tunnel Boring Machines – see Power Demand), Onroad vehicle and equipment use, Marine equipment use, Locomotive use, Helicopter use, Earthmoving volumes, Demolition.

The construction air quality analyses assume that the construction specifications would require use of commercially-available electric equipment and vehicles to reduce gasoline and diesel needs, including cranes and trucks. For equipment and vehicles not available as electrically-driven, the specifications would require use of commercially-available hybrid-diesel equipment and vehicles which reduce the use of diesel fuel especially during idling periods. The diesel-driven engines would use renewable diesel fuels.

The construction air quality analyses assume that all circuit breakers would be insulated with SF6-gas-insulated switchgear. This assumption is conservative because the State of California has adopted regulations banning SF6 circuit breakers after 2033 as vacuum or very low-GWP gas insulated breakers become commercially available.

This appendix was developed to provide DWR for consideration during the EIR air quality emissions and traffic analyses. This information was developed assuming that construction would begin in “Year 2026” without consideration of the future schedule for the EIR or permitting processes. The construction activities presented in this appendix were developed based upon a construction period ranging from one to fourteen years depending upon the project feature. The level of effort and duration of the activities would be the same regardless of the actual initial year of construction. Therefore, the items presented in this appendix were provided to DWR assuming the following chronological translation factors.

- Year 2026 = Construction Year 1
- Year 2027 = Construction Year 2
- Year 2028 = Construction Year 3
- Year 2029 = Construction Year 4
- Year 2030 = Construction Year 5
- Year 2031 = Construction Year 6
- Year 2032 = Construction Year 7
- Year 2033 = Construction Year 8
- Year 2034 = Construction Year 9
- Year 2035 = Construction Year 10
- Year 2036 = Construction Year 11
- Year 2037 = Construction Year 12
- Year 2038 = Construction Year 13
- Year 2039 = Construction Year 14

## APPENDIX E – ATTACHMENT 1

### Project Design Capacity 6,000 cfs

FINAL DRAFT

**Construction Schedule for Twin Cities Complex  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
Mobilize, Excavate, & Mobilize	TCC-Eastern - 1	2/2/2026	6/5/2026	90	5	10
Embankment	TCC-Eastern - 2	3/12/2026	4/21/2026	29	5	10
Subdrain	TCC-Eastern - 3	4/22/2026	6/9/2026	34	5	10
Mangement, Engineering, & Field Labor - Reach 2	TCC-Eastern - 4	3/17/2027	4/9/2037	1561	5	10
Clear and Grub	TCC-Eastern - 5	5/12/2027	7/12/2027	44	5	10
Excavation, Grading, & Compaction - Reach 2	TCC-Eastern - 6	7/13/2027	8/04/2028	204	5	10
Raise Shaft Pad for Reach 2	TCC-Eastern - 7	9/7/2027	4/3/2028	149	5	10
Set Strips, & Concrete for Reach 2	TCC-Eastern - 8	8/16/2027	11/12/2027	65	5	10
Place Guide Walls Concrete for Reach 2	TCC-Eastern - 9	4/3/2028	6/20/2028	57	5	10
Slurry Wall, Place Concrete & Rebar, Slurry Wall, Remove Guide Wall	TCC-Eastern - 10	4/27/2028	8/17/2028	81	5	10
Place Guide Walls Concrete for Reach 1	TCC-Eastern - 11	8/8/2028	8/30/2028	17	5	10
Slurry Wall, Place Concrete & Rebar, Slurry Wall, Remove Guide Wall	TCC-Eastern - 12	8/29/2028	1/3/2029	92	5	10
Excavate Shaft for Reach 2	TCC-Eastern - 13	1/4/2029	4/4/2029	65	5	10
Mangement, Engineering, & Field Labor - Reach 1	TCC-Eastern - 14	3/21/2029	3/14/2035	1916	5	10
Shaft Setup for Reach 1	TCC-Eastern - 15	3/21/2029	4/18/2029	19	5	10
Excavate Shaft for Reach 1	TCC-Eastern - 16	4/4/2029	7/3/2029	65	5	10
Place Tremie Seal Rebar, Cooling Pipes, & Seal for Reaches 1 & 2	TCC-Eastern - 17	6/19/2029	7/31/2029	43	7	24
Dewater Shaft for Reaches 1 & 2	TCC-Eastern - 18	7/17/2029	8/7/2029	21	7	24
Place TBM Cradle Rebar and Cradle Pour for Reaches 1 & 2	TCC-Eastern - 19	7/24/2029	8/20/2029	20	5	10
<b>Breakout Slurry Wall for TBM for Reaches 1 &amp; 2</b>	<b>TCC-Eastern - 20</b>	8/6/2029	9/17/2029	41	5	10
Assemble & Place Buttress, Form, & Concrete for Shaft Liner Reache	TCC-Eastern - 21	9/3/2029	1/9/2030	93	5	10
Erect Gantry Crane for Reaches 1 & 2	TCC-Eastern - 22	11/16/2029	12/11/2029	19	5	10
TBM Assembly including Shaft Utilities for Reach 2	TCC-Eastern - 23	12/10/2029	6/6/2030	105	5	10
Tunneling Operations including Equipment Delivery for Reach 2	TCC-Eastern - 24	6/6/2030	12/4/2036	2064	6	20
TBM Assembly including Shaft Utilities for Reach 1	TCC-Eastern - 25	7/17/2030	12/31/2030	120	5	10
Tunneling Operations including Equipment Delivery for Reach 1	TCC-Eastern - 26	11/6/2030	12/28/2034	1297	6	20
Remove TBM and Tunnel Equipment for Reach 1	TCC-Eastern - 27	12/29/2034	2/22/2035	40	5	10
Remove TBM and Tunnel Equipment for Reach 2	TCC-Eastern - 28	2/4/2037	4/9/2037	46	5	10
Site Restoration	TCC-Eastern - 29	3/26/2037	9/30/2037	135	5	10
<b>Total Area</b>	<b>586 Acres</b>					

**Offroad Equipment (Fossil Fuel) Inventory for Twin Cities Complex  
Option B2**

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
TCC-Eastern - 1	Air Compressor 185 CFM	Air Compressor	299	90	3	Diesel Tier 4	49	0		
TCC-Eastern - 1	Man-Lift, 54', 500 LB, 24' Reach, 4x4	Aerial Lifts	149	90	2	Diesel or Hybrid	75	0		
TCC-Eastern - 1	Boom Truck, 12.5 Tn Boom	Crane	149	90	2	Diesel or Hybrid	100	0		
TCC-Eastern - 1	CAT D6LGPDozer w winch	Crawler Tractor	364	90	4	Diesel or Hybrid	179	0		
TCC-Eastern - 1	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	182	90	2	Diesel	384	0		
TCC-Eastern - 1	Hydraulic 9 Ton Crane	Crane	400	90	4	Diesel	85	0		
TCC-Eastern - 1	Hydraulic 40 Ton Crane	Crane	400	90	4	Diesel	300	0		
TCC-Eastern - 1	CAT Forklift 5,500 LB	Aerial Lift	400	90	4	Diesel	63	0		
TCC-Eastern - 2	CAT D6LGPDozer w winch	Crawler Tractor	233	29	8	Diesel or Hybrid	179	0		
TCC-Eastern - 2	Disk, Towed	Off-Highway Tractor	233	29	8	Diesel	140	0		
TCC-Eastern - 2	CAT 14 M	Grader	116	29	4	Diesel	274	0		
TCC-Eastern - 2	Water Pump 4" Electric	Pumps	28	29	1	Diesel	10	1		
TCC-Eastern - 2	CAT 825, Roller	Rollers	233	29	8	Diesel	315	0		
TCC-Eastern - 3	CAT LOADER/HOE 416 E	Rubber Tired Loader	87	34	3	Diesel	78	0		
TCC-Eastern - 3	Compactor, Trench Roller, Vib 32"w	Roller	175	34	5	Diesel	20	0		
TCC-Eastern - 5	CAT D8 Dozer	Crawler Tractor	990	44	23	Diesel Tier 4 or Hybrid Diesel	179	0		
TCC-Eastern - 5	Grader 16H - 16' Blade	Grader	990	44	23	Diesel	285	0		
TCC-Eastern - 5	623G Scraper Elevate 21 CY	Scaper	1980	44	45	Diesel	359	0		
TCC-Eastern - 6	CAT 825H Compactor	Rollers	2040	204	10	Diesel	145	0		
TCC-Eastern - 6	CAT CB-634D Vibratory 84"	Rollers	2040	204	10	Diesel	315	0		
TCC-Eastern - 6	CAT Grader 16H	Grader	4300	204	21	Diesel	285	0		
TCC-Eastern - 6	CAT 980 Loader 7.5 CY	Grader	2040	204	10	Diesel	285	0		
TCC-Eastern - 6	CAT D8 Dozer	Crawler Tractor	4325	204	21	Diesel Tier 4 or Hybrid Diesel	179	0		
TCC-Eastern - 6	623G Scraper Elevate 21 CY	Scaper	8160	204	40	Diesel	359	0		
TCC-Eastern - 7	CAT CB-634D Vibratory 84"	Rollers	1643	149	11	Diesel	315	0		
TCC-Eastern - 7	CAT Grader 16H	Grader	1643	149	11	Diesel	285	0		
TCC-Eastern - 7	CAT D8 Dozer	Crawler Tractor	1643	149	11	Diesel Tier 4 or Hybrid Diesel	179	0		
TCC-Eastern - 8	CAT CB-634D Vibratory 84"	Rollers	3853	65	59	Diesel	145	0		
TCC-Eastern - 8	CAT Grader 16H	Graders	3853	65	59	Diesel	285	0		
TCC-Eastern - 8	CAT D8 Dozer	Crawler Tractor	3853	65	59	Diesel	328	0		
TCC-Eastern - 8	Hydraulic 9 Ton Crane	Crane	453	65	7	Diesel	85	0		
TCC-Eastern - 9	CAT Hyd Excavator 1CY	Excavator	10	57	0	Diesel	138	0		
TCC-Eastern - 9	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	10	57	0	Diesel or Hybrid	130	0		
TCC-Eastern - 10	Manitowoc 777 200 Ton Crane	Crane	1016	81	13	Diesel	760	0		
TCC-Eastern - 10	1600 CFM Compressor Diesel	Air Compressor	508	81	6	Diesel Tier 4	540	0		
TCC-Eastern - 10	Hydraulic 55 Ton Crane	Crane	1016	81	13	Diesel	350	0		
TCC-Eastern - 10	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	508	81	6	Diesel or Hybrid	130	0		
TCC-Eastern - 10	Slurry Wall Mixer & Desander & Stop End & Tank	Cement & Mortar Mix	508	81	6	Diesel	8	1		
TCC-Eastern - 10	Slurry Wall Techniwell	Pumps	508	81	6	Diesel	500	1		
TCC-Eastern - 10	CAT Hyd Excavator 1CY	Excavator	380	81	5	Diesel	138	0		
TCC-Eastern - 10	Hydraulic Excavator to 3.5 tons = Kobelco SK485LC' 2.75cy' 345 hp Excavator	Excavator	380	81	5	Diesel	345	0		
TCC-Eastern - 10	250 CFM Compressor Diesel	Air Compressor	14	81	0	Diesel Tier 3	75	0		
TCC-Eastern - 12	CAT Hyd Excavator 1CY	Excavator	390	92	4	Diesel	138	0		
TCC-Eastern - 12	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	898	92	10	Diesel or Hybrid	130	0		
TCC-Eastern - 12	250 CFM Compressor Diesel	Air Compressor	14	92	0	Diesel Tier 3	75	0		
TCC-Eastern - 12	Hydraulic Excavator to 3.5 tons = Kobelco SK485LC' 2.75cy' 345 hp Excavator	Excavator	380	92	4	Diesel	345	0		
TCC-Eastern - 12	1600 CFM Compressor Diesel	Air Compressor	508	92	6	Diesel Tier 4	540	0		
TCC-Eastern - 12	Hydraulic 55 Ton Crane	Crane	1016	92	11	Diesel	350	0		
TCC-Eastern - 12	Slurry Wall Mixer & Desander & Stop End & Tank	Cement & Mortar Mix	508	92	6	Diesel	8	1		
TCC-Eastern - 12	Slurry Wall Techniwell	Pumps	508	92	6	Diesel	500	1		
TCC-Eastern - 12	Manitowoc 777 200 Ton Crane	Crane	1016	92	11	Diesel	760	0		
TCC-Eastern - 13	Manitowoc 777 200 Ton Crane	Crane	688	65	11	Diesel	760	0		
TCC-Eastern - 15	Hydraulic 40 Ton Crane	Crane	400	19	21	Diesel	300	0		
TCC-Eastern - 15	Hydraulic 25 Ton Crane	Crane	160	19	8	Diesel	100	0		
TCC-Eastern - 15	Hydraulic 9 Ton Crane	Crane	400	19	21	Diesel	85	0		
TCC-Eastern - 15	CAT Forklift 5,500 LB	Aerial Lift	400	19	21	Diesel	63	0		
TCC-Eastern - 15	Heavy Duty Mechanic Welder	Welder	160	19	8	Diesel	400	0		
TCC-Eastern - 15	1600 CFM Compressor Diesel	Air Compressor	160	19	8	Diesel Tier 4	540	0		
TCC-Eastern - 15	Truck Crane Lattice Boom 90T	Crane	160	19	8	Diesel Tier 4	300	0		
TCC-Eastern - 15	Telescope RT Forklift 5500	Forklift	160	19	8	Diesel	63	0		
TCC-Eastern - 16	Manitowoc 777 200 Ton Crane	Crane	688	65	11	Diesel	760	0		
TCC-Eastern - 17	Manitowoc 777 200 Ton Crane	Crane	466	43	11	Diesel	760	0		
TCC-Eastern - 17	Hydraulic 40 Ton Crane	Crane	160	43	4	Diesel	300	0		
TCC-Eastern - 17	Hydraulic 25 Ton Crane	Crane	397	43	9	Diesel	100	0		
TCC-Eastern - 18	Hydraulic 15 Ton Crane	Crane	200	21	10	Diesel	85	0		
TCC-Eastern - 18	Dewater Pump 6"	Pump	800	21	38	Diesel	50	1		
TCC-Eastern - 18	150 KW Diesel Generator	Generator	200	21	10	Diesel Tier 4	183	1		
TCC-Eastern - 19	Manitowoc 777 200 Ton Crane	Crane	185	20	9	Diesel	760	0		
TCC-Eastern - 19	Trailer Conc Pump 100 CY HR	Pump	21	20	1	Diesel	200	1		
TCC-Eastern - 19	250 CFM Compressor Diesel	Air Compressor	43	20	2	Diesel Tier 3	75	0		
TCC-Eastern - 20	250 CFM Compressor Diesel	Air Compressor	544	41	13	Diesel Tier 3	75	0		
TCC-Eastern - 20	Manitowoc 777 200 Ton Crane	Crane	544	41	13	Diesel	760	0		
TCC-Eastern - 21	250 CFM Compressor Diesel	Air Compressor	1110	93	12	Diesel Tier 3	75	0		
TCC-Eastern - 21	Manitowoc 777 200 Ton Crane	Crane	1306	93	14	Diesel	760	0		
TCC-Eastern - 21	Trailer Conc Pump 100 CY HR	Pump	395	93	4	Diesel	200	1		
TCC-Eastern - 22	1600 CFM Compressor Diesel	Air Compressor	160	19	8	Diesel Tier 4	540	0		
TCC-Eastern - 22	Hydraulic 25 Ton Crane	Crane	160	19	8	Diesel	100	0		
TCC-Eastern - 22	Truck Crane Lattice Boom 90T	Crane	160	19	8	Diesel Tier 4	300	0		
TCC-Eastern - 22	Telescope RT Forklift 5500	Forklift	160	19	8	Diesel	63	0		
TCC-Eastern - 22	Heavy Duty Mechanic Welder	Welder	160	19	8	Diesel	400	0		
TCC-Eastern - 23	250 CFM Compressor Diesel	Air Compressor	2300	105	22	Diesel Tier 3	75	0		
TCC-Eastern - 23	Hydraulic 40 Ton Crane	Crane	3174	105	30	Diesel	300	0		
TCC-Eastern - 23	Hydraulic 9 Ton Crane	Crane	2274	105	22	Diesel	85	0		

TCC-Eastern - 23	CAT Forklift 5,500 LB	Aerial Lift	2274	105	22	Diesel	63	0
TCC-Eastern - 24	250 CFM Compressor Diesel	Air Compressor	31660	2064	15	Diesel Tier 3	75	0
TCC-Eastern - 24	CAT 988 H Wheel Loader	Rubber Tired Loader	16145	2064	8	Diesel	400	0
TCC-Eastern - 24	CAT Forklift 5,500 LB	Aerial Lift	16346	2064	8	Diesel	63	0
TCC-Eastern - 24	Hydraulic 40 Ton Crane	Crane	16346	2064	8	Diesel Tier 4 or Hybrid Diesel	179	0
TCC-Eastern - 24	Hydraulic 9 Ton Crane	Crane	16346	2064	8	Diesel	285	0
TCC-Eastern - 24	Manitowoc 777 200 Ton Crane	Crane	42017	2064	20	Diesel	760	0
TCC-Eastern - 24	Grout Pump	Cement & Mortar Mix	1538	1297	1	Diesel	500	1
TCC-Eastern - 24	Grout Mixer	Cement & Mortar Mix	1538	1297	1	Diesel	70	1
TCC-Eastern - 25	250 CFM Compressor Diesel	Air Compressor	2300	120	19	Diesel Tier 3	75	0
TCC-Eastern - 25	Hydraulic 40 Ton Crane	Crane	900	120	8	Diesel	300	0
TCC-Eastern - 26	250 CFM Compressor Diesel	Air Compressor	19767	1297	15	Diesel Tier 3	75	0
TCC-Eastern - 26	Hydraulic 40 Ton Crane	Crane	10539	1297	8	Diesel	300	0
TCC-Eastern - 26	Hydraulic 9 Ton Crane	Crane	10539	1297	8	Diesel	85	0
TCC-Eastern - 26	CAT Forklift 5,500 LB	Aerial Lift	10539	1297	8	Diesel	63	0
TCC-Eastern - 26	CAT 980 Loader 7.5 CY	Grader	10340	1297	8	Diesel	285	0
TCC-Eastern - 26	Grout Pump	Cement & Mortar Mix	975	1297	1	Diesel	500	1
TCC-Eastern - 26	Grout Mixer	Cement & Mortar Mix	975	1297	1	Diesel	70	1
TCC-Eastern - 27	Hydraulic 55 Ton Crane	Crane	715	40	18	Diesel	350	0
TCC-Eastern - 27	Manitowoc 777 200 Ton Crane	Crane	715	40	18	Diesel	760	0
TCC-Eastern - 27	Telescope RT Forklift 5500	Forklift	690	40	17	Diesel	63	0
TCC-Eastern - 27	1600 CFM Compressor Diesel	Air Compressor	100	40	3	Diesel Tier 4	540	0
TCC-Eastern - 27	Hydraulic 25 Ton Crane	Crane	100	40	3	Diesel	100	0
TCC-Eastern - 27	Truck Crane Lattice Boom 90T	Crane	100	40	3	Diesel Tier 4	300	0
TCC-Eastern - 27	Telescope RT Forklift 5500	Forklift	100	40	3	Diesel	63	0
TCC-Eastern - 27	Heavy Duty Mechanic Welder	Welder	100	40	3	Diesel	400	0
TCC-Eastern - 27	Hydraulic 40 Ton Crane	Crane	80	40	2	Diesel	300	0
TCC-Eastern - 27	Hydraulic 9 Ton Crane	Crane	80	40	2	Diesel	85	0
TCC-Eastern - 27	CAT Forklift 5,500 LB	Aerial Lift	80	40	2	Diesel	63	0
TCC-Eastern - 28	Hydraulic 55 Ton Crane	Crane	1235	46	27	Diesel	350	0
TCC-Eastern - 28	Manitowoc 777 200 Ton Crane	Crane	715	46	16	Diesel	760	0
TCC-Eastern - 28	Telescope RT Forklift 5500	Forklift	990	46	22	Diesel	63	0
TCC-Eastern - 28	1600 CFM Compressor Diesel	Air Compressor	100	46	2	Diesel Tier 4	540	0
TCC-Eastern - 28	Hydraulic 25 Ton Crane	Crane	100	46	2	Diesel	100	0
TCC-Eastern - 28	Truck Crane Lattice Boom 90T	Crane	100	46	2	Diesel Tier 4	300	0
TCC-Eastern - 28	Heavy Duty Mechanic Welder	Welder	100	46	2	Diesel	400	0
TCC-Eastern - 29	CAT D8Rii, Dozer w winch	Crawler Tractor	2150	135	16	Diesel	310	0
TCC-Eastern - 29	CAT 12 M	Grader	700	135	5	Diesel	173	0
TCC-Eastern - 29	CAT 815, Roller	Rollers	500	135	4	Diesel	170	0
TCC-Eastern - 29	CAT 621G Scraper, Conventional	Scraper	500	135	4	Diesel	330	0
TCC-Eastern - 29	Cat 6 mgal w/ CAT 725 Tractor, 320hp	Crawler Tractor	4510	135	33	Diesel	320	0
TCC-Eastern - 29	CAT Hyd Excavator 1CY	Excavator	208	135	2	Diesel	138	0
TCC-Eastern - 29	Manitowoc 777 200 Ton Crane	Crane	208	135	2	Diesel	760	0
TCC-Eastern - 29	CAT 966 Loader 5.5 CY	Rubber Tired Loader	208	135	2	Diesel	286	0
TCC-Eastern - 29	CAT 390 MASS EXC	Excavator	700	135	5	Diesel	534	0
TCC-Eastern - 29	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	2100	135	16	Diesel	345	0
TCC-Eastern - 29	Farm Tractor, All Wheel Drive, 285 HP	Off-Highway Tractor	810	135	6	Diesel	80	0
TCC-Eastern - 29	CAT 966 GII Wheel Loader	Rubber Tired Loader	100	135	1	Diesel	170	0
TCC-Eastern - 29	CAT D9R, Dozer w ripper	Crawler Tractor	1560	135	12	Diesel	410	0
TCC-Eastern - 29	CAT 631G Scraper, Conventional	Scraper	1650	135	12	Diesel	515	0
TCC-Eastern - 29	Disk, Towed	Off-Highway Tractor	280	135	2	Diesel	140	0
TCC-Eastern - 29	Hydro Mulcher, 18 HP	Pump	100	135	1	Diesel	25	0

**Offroad Equipment (Electric) Inventory for Twin Cities Complex  
Option B2**

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
TCC-Eastern - 1	400A, Electric Welder	299	90	0	1
TCC-Eastern -2	400A, Electric Welder	8	1561	0	0
TCC-Eastern -2	Light Plant, 4 lite, 1000w	931	29		
TCC-Eastern - 23	Gantry Crane	1150	105	0	3
TCC-Eastern - 23	Axial Fan 114,000 CFM	5292	105	50	2520
TCC-Eastern - 24	Axial Fan 114,000 CFM	312508	2064	50	7570
TCC-Eastern - 25	Gantry Crane	2150	120	0	4
TCC-Eastern - 25	Axial Fan 114,000 CFM	650	120	50	271
TCC-Eastern - 26	Gantry Crane	56744	1297	0	11
TCC-Eastern - 26	Axial Fan 114,000 CFM	198284	1297	50	7644
TCC-Eastern - 27	Gantry Crane	690	40	0	4
TCC-Eastern - 28	Gantry Crane	890	46	0	5



Vehicle Inventory for Twin Cities Complex  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# of	Vehicle Hours	Hours/Trip	# of Vehicles Site	One-Way Trips/Day	Trip Location to/from	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
TCC-Eastern - 1	Pickup, 1/2T, 2wd	Materials from Sacramento	90	390	1	688	8	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 1	Truck, Flatbed, 10T, Hwy	Materials from Sacramento	90	400	1	706	8	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 1	Truck, Flatbed, 10T, Hwy	Tractor and Aerial Lift from Sacram	2	1	1	2	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 1	Truck, Flatbed, 10T, Hwy	Excavator, Two Cranes, Aerial Lift from and to Sacramento	2	2	1	4	2	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 2	Pickup, 1/2T, 2wd	Materials from Sacramento	29	233	1	411	14	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 2	Truck, Flatbed, 10T, Hwy	Roller from Sacramento	1	1	1	1	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 2	Truck, Flatbed, 10T, Hwy	Tractor to Sacramento	1	1	1	1	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 2	Truck, Flatbed, 10T, Hwy	Grader from and to Sacramento	2	1	1	2	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 3	Truck, Flatbed, 10T, Hwy	Loader from and to Sacramento	2	1	1	2	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 5	Truck, Flatbed, 10T, Hwy	Dozer, Scraper, and Grader from Sacramento	1	2	1	3	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 6	Truck, Flatbed, 10T, Hwy	Materials from Sacramento	204	133	1	235	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 6	Truck, Flatbed, 10T, Hwy	Roller from Sacramento	1	1	1	1	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 6	Truck, Flatbed, 10T, Hwy	Roller, Grader, and Scraper to Sacramento	1	2	1	3	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 6	Truck, Flatbed, 10T, Hwy	Loader from and to Sacramento	2	1	1	2	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 7	Highway Dump Truck 18 CY	Materials from Sacramento	149	96	1	170	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 7	Truck, Flatbed, 10T, Hwy	Grader from Sacramento	1	1	1	1	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 7	Truck, Flatbed, 10T, Hwy	Two Cranes from and to Sacramento	2	2	1	4	2	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 8	Truck Flatbed 4 T Highway	Rebar from Sacramento	65	9	1	15	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 8	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	65	40	0	1190	18	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 8	Truck, Flatbed, 10T, Hwy	Dozer, Grader, and Roller to Sacramento	1	2	1	3	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 8	Truck, Flatbed, 10T, Hwy	Crane from and to Sacramento	2	1	1	2	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 9	Truck, Flatbed, 10T, Hwy	Excavator and Loader from Sacramento	1	1	1	2	2	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 9	Truck Flatbed 4 T Highway	Rebar from Sacramento	57	33	1	59	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 9	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	57	46	0	1374	24	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 9	Highway Dump Truck 18 CY	Slurry Wall Bentonite from Sacramento	57	96	1	170	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 10	Truck, Flatbed, 10T, Hwy	Excavator and Two Cranes from Sacramento	1	2	1	3	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 11	Truck Flatbed 4 T Highway	Rebar from Sacramento	17	1	1	1	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 11	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	17	2	0	54	3	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 12	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	92	38	0	2150	12	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 12	Truck Flatbed 4 T Highway	Rebar from Sacramento	92	34	1	60	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 12	Highway Dump Truck 18 CY	Slurry Wall Bentonite from Sacramento	92	96	1	170	2	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 12	Truck, Flatbed, 10T, Hwy	Two Excavators, Loader, and Crane from Sacramento	1	2	1	4	4	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 15	Truck, Flatbed, 10T, Hwy	Materials from Sacramento	19	96	1	170	9	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 15	Truck, Flatbed, 10T, Hwy	Five Cranes and Aerial Lift from Sacramento	1	3	1	6	6	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 17	Truck Flatbed 4 T Highway	Rebar from Sacramento	43	17	1	90	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 17	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	43	84	0	2512	38	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 18	Truck, Flatbed, 10T, Hwy	Crane from and to Sacramento	1	1	1	1	1	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 19	Truck Flatbed 4 T Highway	Rebar from Sacramento	20	2	1	4	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 19	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	20	6	0	180	9	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 20	Truck Flatbed 4 T Highway	Rebar from Sacramento	41	5	1	9	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 21	Concrete Transit Mix Truck 12cy	Concrete from Lambert Batch Plant	93	29	0	884	10	Twin Cities Complex to/from Lambert Concrete Batch Plant	1	2	Diesel	
TCC-Eastern - 23	Truck, Flatbed, 10T, Hwy	Pre-Cast Segments from Sacramento	105	201	1	354	3	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 24	Truck Flatbed 4 T Highway	Materials from Sacramento	2064	147	1	260	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 24	Truck Flatbed 4 T Highway	Materials from Sacramento	2064	224	1	396	0	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 24	Truck, Flatbed, 10T, Hwy	Pre-Cast Segments from Sacramento	2064	26441	1	47013	23	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 24	Truck, Flatbed, 10T, Hwy	Materials from Sacramento	2064	83264	1	140936	71	Twin Cities Complex to/from Sacramento	17	34	Diesel	
TCC-Eastern - 25 Truck, Flatbed, 10T, Hwy Pre-Cast Segments from Sacramento 120 201 1 354 3 Twin Cities Complex 17 34 Diesel												
TCC-Eastern - 26	Truck, Flatbed, 10T, Hwy	Tractor and Loader Grader to Sacran	1	1	1	2	2	Site Complex to/from Sacri	17	34	Diesel	
TCC-Eastern - 26	Truck, Flatbed, 10T, Hwy	Pre-Cast Segments from Sacramento	1297	16856	1	29745	23	Twin Cities Complex to/from	17	34	Diesel	
TCC-Eastern - 27	Truck, Flatbed, 10T, Hwy	Three Cranes to Sacramento	1	2	1	3	3	Twin Cities Complex to/from	17	34	Diesel	
TCC-Eastern - 28	Truck, Flatbed, 10T, Hwy	Remove TBM to Sacramento	46	180	1	318	7	Twin Cities Complex to/from	17	34	Diesel	
TCC-Eastern - 28	Truck, Flatbed, 10T, Hwy	wo Aerial Lifts and Crane to Sacramen	1	2	1	3	3	Twin Cities Complex to/from	17	34	Diesel	
TCC-Eastern - 29	Truck, Flatbed, 10T, Hwy	ader, Roller, Scraper, Loader, and Exca	2	6	1	10	5	Site Complex to/from Sacri	17	34	Diesel	
TCC-Eastern - 29	Truck, Flatbed, 10T, Hwy	Crane, Two Excavators, to Sacramento	1	2	1	3	3	Site Complex to/from Sacri	17	34	Diesel	
TCC-Eastern - 29	Truck Flatbed 4 T Highway	Materials from Sacramento	135	101	1	178	1	Site Complex to/from Sacri	17	34	Diesel	
Ino access roads at park and ride lots1 --- on the Construction Site												
TCC-Eastern - 1	Articulated Rear Dump 22 CY/CAT 730	Dumper to move fill on-site	90	1093	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		Miles On-Site 5466	Diesel or Hybrid	
TCC-Eastern - 2	Cat 10meal w/Cat 730 S114P	Dummers	29	116	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		582	Diesel	
TCC-Eastern - 3	Truck, End Dump, 10-13cy, Hwy	Dummers	34	175	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		873	Diesel	
TCC-Eastern - 6	Water Trailer	Off-Highway Truck	204	240	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		1200	Diesel	
TCC-Eastern - 7	Truck, End Dump, 10-13cy, Hwy	ens for Fille from Twin Cities Complex E	149	4821	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		24105	Diesel	
TCC-Eastern - 8	Concrete Pump Truck	Off-Highway Truck	65	560	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		2800	Diesel	
TCC-Eastern - 9	CAT 730 Rear Dumbo	Dummoer	57	155	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		775	Diesel or Hybrid	
TCC-Eastern - 10	CAT 730 Rear Dumbo	Dummoer	81	579	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		2896	Diesel or Hybrid	
TCC-Eastern - 10	Articulated Rear Dump 22 CY/CAT 730	Dumper	81	508	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		2140	Diesel or Hybrid	
TCC-Eastern - 10	Concrete Pump Truck	Off-Highway Truck	81	5084	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		21419	Diesel	
TCC-Eastern - 11	CAT 730 Rear Dumbo	Dumper	17	155	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		775	Diesel or Hybrid	
TCC-Eastern - 12	CAT 730 Rear Dumbo	Dumper	92	579	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		2896	Diesel or Hybrid	
TCC-Eastern - 12	Articulated Rear Dump 22 CY/CAT 730	Dumper	92	568	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		2140	Diesel or Hybrid	
TCC-Eastern - 13	CAT 730 Rear Dumbo	Dummoer	65	3440	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		17199	Diesel or Hybrid	
TCC-Eastern - 16	CAT 730 Rear Dumbo	Dumper	65	3440	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		17199	Diesel or Hybrid	
TCC-Eastern - 17	Concrete Pump Truck	Off-Highway Truck	43	395	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		1974	Diesel	
TCC-Eastern - 29	Truck, End Dump, 10-13cy, Hwy	Dumper	135	8780	not applicable	not applicable	not applicable	in-site assume 5 miles/hour		43900	Diesel	

**Employees Required to Twin Cities Complex**  
**Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/ One-way Trip/Day
TCC-Eastern - 1	Carpenter Apprentice	299	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Carpenter Foreman	299	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Carpenter Journeyman	597	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Electrical Foreman	149	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Electrician Journeyman	597	10	Sacramento to/from Twin Cities Complex	17
	Iron Worker Journeyman				
TCC-Eastern - 1	Rebar/Struct	597	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Laborer G2 General	597	10	Sacramento to/from Twin Cities Complex	17
	Operator G3a Cranes 45 t and under	299			
TCC-Eastern - 1			10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Teamster G3 Boom Truck	149	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Operator G4 Dozer & Push Cat	364	10	Sacramento to/from Twin Cities Complex	17
	Operator G2 Excavator 3.5 to 7.0 cy	182			
TCC-Eastern - 1			10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	OPERATING ENGINEER FOREMAN	91	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Teamster G3 ED 8-24cy, Water>7mg	1093	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Bullgang Foreman	400	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Bullgang Laborer	800	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Mechanic / Welder	400	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Hyd Crane Operator	800	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 1	Flat Truck Driver	400	10		
TOTAL TCC-Eastern-1				Sacramento to/from Twin Cities Complex	17
	Laborer G2 General	28	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 2	Operator G5 Compactor w-blade	233	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 2	Operator G4 Dozer & Push Cat	233	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 2	OPERATING ENGINEER FOREMAN	233	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 2	Operator G2 Finish Blade	116	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 2	Teamster G3 ED 8-24cy, Water>7mg	116	10		
TOTAL TCC-Eastern-2				Sacramento to/from Twin Cities Complex	17
	Laborer G1 Pipe layers	349	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 3	Laborer G1 Power Tamper	175	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 3	Operator G3 BH-Loader>3/4cy	87	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 3	Teamster G2 Hwy ED 6-8cy, Water<7	175	10		
TOTAL TCC-Eastern-3				Sacramento to/from Twin Cities Complex	17
	Project Manager	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Safety Manager	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	QC Manager	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Environmental Manager	18515	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Project Engineer	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Cost Engineer	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Field Engineer	14400	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Safety Engineer	37027	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Schedule Engineer	9600	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Shift Engineers	37027	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	QC Technician	9600	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Survey Party Chief	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Survey Rod Man	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Tunnel Superintendent	18515	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Tunnel Walkers	18515	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Equipment Superintendent	18515	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Electrical Superintendent	18515	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	General Superintendent	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Concrete Superintendent	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Purchasing Agent	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Runner	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Payroll Clerk	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Office Administrator	19200	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 4	Accountant	19200	10		
TOTAL TCC-Eastern-4				Sacramento to/from Twin Cities Complex	17
	General Foreman	495	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 5	Dozer Operator	990	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 5	Grader Operator	990	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 5	Operator G4 Grade Check	495	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 5	Scraper Operator	1980	10		
TOTAL TCC-Eastern-5				Sacramento to/from Twin Cities Complex	17
	General Foreman	2283	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 6	Dozer Operator	4325	10	Sacramento to/from Twin Cities Complex	17
TCC-Eastern - 6	Grader Operator	4325	10	Sacramento to/from Twin Cities Complex	17

TCC-Eastern - 6	Operator G4 Grade Check	2043	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	Scraper Operator	8171	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	Grade Setter / Checker	240	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	Loader Operator	240	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	General Laborer	480	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	Flagger	480	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 6	Compactor Operator	480	10		
TOTAL TCC-Eastern-6				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 7	Grade Setter / Checker	1644	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 7	Compactor Operator	1644	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 7	Dozer Operator	1644	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 7	Grader Operator	1644	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 7	Truck Driver	1644	10		
TOTAL TCC-Eastern-7				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Hyd Crane Operator	453	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	General Laborer	809	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Carpenter	1425	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Carpenter Foreman	216	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Iron Worker Foreman	377	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Iron Worker	3770	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 8	Truck Driver	560	10		
TOTAL TCC-Eastern-8				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Shifter	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Lead Miner	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Miner	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Loader Operator	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Excavator Operator	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Truck Driver	153	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Carpenter	684	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	Carpenter Foreman	171	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 9	General Laborer	16	10		
TOTAL TCC-Eastern-9				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	General Laborer	6789	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	General Foreman	1396	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Mechanic Welder	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Shaft Crane Operator	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Crane Oiler	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Truck Driver	579	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Hyd Crane Operator	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Loader Operator	888	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Slurry Wall Consultant	508	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Shifter	1524	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Lead Miner	508	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Miner	4064	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Carpenter	85	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Carpenter Foreman	21	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Iron Worker Foreman	1034	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Iron Worker	5153	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 10	Excavator Operator	380	10		
TOTAL TCC-Eastern-10				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Truck Driver	153	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Loader Operator	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Shifter	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Lead Miner	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Miner	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Excavator Operator	10	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Carpenter	652	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 11	Carpenter Foreman	163	10		
TOTAL TCC-Eastern-9				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Mechanic / Welder	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Hyd Crane Operator	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Loader Operator	888	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	General Laborer	6805	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	General Foreman	1396	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Carpenter	117	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Carpenter Foreman	29	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Truck Driver	579	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Shifter	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Lead Miner	508	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Miner	4064	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Iron Worker Foreman	1034	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Iron Worker	5153	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Excavator Operator	380	10	Sacramento to/from Twin Cities Compl	17

TCC-Eastern - 12	Shaft Crane Operator	1016	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 12	Crane Oiler	1016	10		
TOTAL TCC-Eastern-12					
TCC-Eastern - 13	Shaft Crane Operator	688	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 13	Toplander	688	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 13	Crane Oiler	688	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 13	Diver Contractor	40	10		
TOTAL TCC-Eastern-13					
TCC-Eastern - 14	Project Manager	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Office Manager	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Safety Manager	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	QC Manager	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Geotechnical Manager	12189	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Environmental Manager	12189	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Project Engineer	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Cost Engineer	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Field Engineer	9480	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Safety Engineer	24378	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Schedule Engineer	6320	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Shift Engineers	24378	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	QC Technician	6320	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Survey Party Chief	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Survey Rod Man	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Tunnel Superintendent	12189	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Tunnel Walkers	24378	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Equipment Superintendent	12189	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Electrical Superintendent	12189	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	General Superintendent	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Concrete Superintendent	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Purchasing Agent	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Runner	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Payroll Clerk	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Office Administrator	12640	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 14	Accountant	12640	10		
TOTAL TCC-Eastern-14					
TCC-Eastern - 15	Bullgang Foreman	560	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Bullgang Laborer	1760	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Mechanic / Welder	560	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Hyd Crane Operator	960	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Flat Truck Driver	400	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Master Mechanic	480	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Shaft Crane Operator	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Crane Oiler	160	10.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Diver Contractor	40	10.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 15	Electrician	160	10.0		
TOTAL TCC-Eastern-15					
TCC-Eastern - 16	Shaft Crane Operator	688	10.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 16	Toplander	688	10.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 16	Crane Oiler	688	10.0		
TOTAL TCC-Eastern-16					
TCC-Eastern - 17	Shifter	725	24.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Lead Miner	99	24.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Miner	2047	24.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Shaft Crane Operator	466	24.0	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Toplander	1106	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Bottomlander	466	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Iron Worker Foreman	626	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Iron Worker	4448	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Hyd Crane Operator	557	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 17	Diver Contractor	18	24		
TOTAL TCC-Eastern-17					
TCC-Eastern - 18	Shifter	200	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 18	Lead Miner	200	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 18	Miner	1600	24	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 18	Hyd Crane Operator	200	24		
TOTAL TCC-Eastern-18					
TCC-Eastern - 19	Shifter	185	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Lead Miner	43	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Miner	554	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Mechanic / Welder	43	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Shaft Crane Operator	185	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Toplander	185	10	Sacramento to/from Twin Cities Compl	17

TCC-Eastern - 19	Crane Oiler	185	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Electrician	43	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Iron Worker	1136	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 19	Iron Worker Foreman	142	10		
TOTAL TCC-Eastern-19				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Shaft Crane Operator	544	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Toplander	544	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Bottomlander	544	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Crane Oiler	544	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Iron Worker	4356	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 20	Iron Worker Foreman	544	10		
TOTAL TCC-Eastern-20				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Shifter	1306	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Lead Miner	1306	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Miner	7302	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Master Mechanic	120	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Mechanic / Welder	1225	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Shaft Crane Operator	1426	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Toplander	1426	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Bottomlander	937	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Crane Oiler	1322	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Electrician	436	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Hyd Crane Operator	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Truck Driver	19095	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 21	Concrete Pump Operator	441	10		
TOTAL TCC-Eastern-21				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Bullgang Foreman	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Bullgang Laborer	960	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Mechanic / Welder	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Master Mechanic	480	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Shaft Crane Operator	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Crane Oiler	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Electrician	160	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 22	Hyd Crane Operator	160	10		
TOTAL TCC-Eastern-22				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Shifter	2550	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Lead Miner	2550	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Miner	46236	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Segment Carrier Operator	2400	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Mechanic / Welder	5924	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Shaft Crane Operator	1150	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Toplander	1150	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Bottomlander	1150	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Crane Oiler	1150	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Electrician	3650	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Hyd Crane Operator	5448	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Flat Truck Driver	2274	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	TBM Operator	2800	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Bullgang Foreman	2274	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Bullgang Laborer	4548	10	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 23	Conveyor Belt Man	1000	10		
TOTAL TCC-Eastern-23				Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Bottomlander	58362	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Bullgang Foreman	49805	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Bullgang Laborer	166528	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Conveyor Belt Man or Sub	35795	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Crane Oiler	58362	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Dozer Operator	32291	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Electrician	68485	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Flat Truck Driver	82495	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Hyd Crane Operator	32691	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Lead Miner	35795	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Loader Operator	32291	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Master Mechanic	16345	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Mechanic / Welder	101175	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Miner	247457	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Operating Engineer	32291	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Operator G2 Plant Operator	32291	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Segment Carrier Operator	254324	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Shaft Crane Operator	58362	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Shifter	35795	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	TBM Operator	71589	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Toplander	58362	20	Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 24	Utility Truck Operator	33459	20		

TOTAL TCC-Eastern-24					Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Shifter	2550	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Lead Miner	2550	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Miner	17100	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Segment Carrier Operator	4800	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Mechanic / Welder	3650	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Shaft Crane Operator	1150	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Toplander	1150	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Bottomlander	1150	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Crane Oiler	1150	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Electrician	3650	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Hyd Crane Operator	900	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Conveyor Belt Man or Sub	1000	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	Truck Driver	10620	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 25	TBM Operator	2800	10			
TOTAL TCC-Eastern-25					Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Shifter	21412	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Lead Miner	21412	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Miner	165776	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Segment Carrier Operator	161152	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Mechanic / Welder	63571	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Shaft Crane Operator	37464	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Toplander	37464	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Bottomlander	37464	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Crane Oiler	37464	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Electrician	42492	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Hyd Crane Operator	21078	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Conveyor Belt Man or Sub	42092	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Dozer Operator	20680	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Flat Truck Driver	10539	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Master Mechanic	10540	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Man Transport Truck Operator	21495	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Operating Engineer	20680	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Operator G2 Plant Operator	20680	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Utility Truck Operator	21495	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	TBM Operator	42824	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Bullgang Foreman	32034	20		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 26	Bullgang Laborer	107059	20			
TOTAL TCC-Eastern-26					Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Shifter	1405	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Lead Miner	1405	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Miner	6700	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Forklift Operator	690	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Mechanic / Welder	2300	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Shaft Crane Operator	1505	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Toplander	1405	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Bottomlander	1405	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Crane Oiler	815	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Electrician	2220	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Hyd Crane Operator	975	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Flat Truck Driver	80	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Master Mechanic	300	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Utility Truck Operator	540	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Bullgang Foreman	180	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 27	Bullgang Laborer	760	10			
TOTAL TCC-Eastern-27					Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Shifter	1605	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Lead Miner	1605	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Miner	7900	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Forklift Operator	890	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Mechanic / Welder	2420	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Shaft Crane Operator	1705	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Toplander	1605	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Bottomlander	1605	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Crane Oiler	815	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Electrician	2420	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Hyd Crane Operator	815	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Master Mechanic	300	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Utility Truck Operator	740	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Bullgang Foreman	100	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 28	Bullgang Laborer	600	10			
TOTAL TCC-Eastern-28					Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Excavator Operator	208	10		Sacramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Laborer G2 Concrete Laborer	1050	10		Sacramento to/from Twin Cities Compl	17

TCC-Eastern - 29	Laborer G2 General	270	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Laborer G3 Dumpman	300	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Laborer G3 Flagman	760	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Shaft Crane Operator	208	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Toplander	208	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Bottomlander	208	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Crane Oiler	208	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G2 Excavator 3.5 to 7.0 cy	2450	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G2 Finish Blade	700	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G3 Loader >4cy	800	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G4 Dozer & Push Cat	3710	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G4 Scraper	2150	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G5 Compactor w-blade	500	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operator G6 Tractor	810	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Operating Engineer Foreman	1035	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Teamster G2 Hwy ED 6-8cy, Water<7	9525	10	acramento to/from Twin Cities Compl	17
TCC-Eastern - 29	Teamster G4 ED 25-65 Cy	700	10		

## Marine Inventory for Twin Cities Complex

### Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



## Locomotive Inventory for Twin Cities Complex Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Twin Cities Complex**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Twin Cities Complex  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
TCC-Eastern - 1	586	90	7	41909	466						
TCC-Eastern - 2		29				55878	1927				
TCC-Eastern - 5		44		249472	5670						
TCC-Eastern - 6		204		1029535	5047						
TCC-Eastern - 7		149				72310	485				
TCC-Eastern - 8		65									
TCC-Eastern - 9		57		635	11						
TCC-Eastern - 10		81		12708	157						
TCC-Eastern - 11		17		635	37						
TCC-Eastern - 12		92		12708	138						
TCC-Eastern - 13		65		75675	1164						
TCC-Eastern - 16		65		75675	1164						
TCC-Eastern - 17		43									
TCC-Eastern - 19		20									
TCC-Eastern - 21		93									
TCC-Eastern - 24 - RTM		2064		3554725	1722						
TCC-Eastern - 25		120									
TCC-Eastern - 26 - RTM		1297		1977624	1525						
TCC-Eastern - 26		1297									
TCC-Eastern - 29	395	135	3								

Demolition Assumptions for Twin Cities Complex  
Option B2

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Twin Cities Franklin Blvd Access  
Options B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	TFA-Bethany-01	11/24/2026	11/30/2026	5	5	10
02 - Embankment	TFA-Bethany-02	12/1/2026	12/16/2026	12	5	10
03 - Culvert Pipe	TFA-Bethany-03	12/17/2026	12/17/2026	1	1	10
04 - Drainage	TFA-Bethany-04	12/18/2026	12/28/2026	7	5	10
05 - Road Base	TFA-Bethany-05	12/29/2026	1/15/2027	14	5	10
06 - Initial Overlay	TFA-Bethany-06	1/18/2027	1/21/2027	4	4	10
07 - Signs and Signals	TFA-Bethany-07	1/22/2027	1/22/2027	1	1	10
08 - Intermediate Overlay	TFA-Bethany-08	5/27/2030	5/29/2030	3	3	10
09 - Final Overlay	TFA-Bethany-09	2/19/2038	2/23/2038	3	3	10

**Total Site Acres**

**5**

Offroad Equipment (Fossil Fuel) Inventory for Twin Cities Franklin Blvd Access  
Options B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
TFA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	84.19	5	17	Diesel or Hybrid	179	0.43		
TFA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	42.1	5	8	Diesel	384	0.38		
TFA-Bethany-02	CAT 14 M	Grader	27.45	12	2	Diesel	274	0.41		
TFA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	54.9	12	5	Diesel or Hybrid	179	0.43		
TFA-Bethany-02	Water Pump, 4" Diesel	Pumps	6.59	12	1	Diesel	10	0.74		
TFA-Bethany-02	CAT 815, Roller	Rollers	54.9	12	5	Diesel	170	0.38		
TFA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	9.67	1	10	Diesel	78	0.36		
TFA-Bethany-03	Air Compressor 375 cfm	Air Compressor	4.83	1	5	Diesel - Tier 4	122	0.48		
TFA-Bethany-03	Compactor, Plate, 22"w x 35"	Plate Compactors	4.83	1	5	Diesel	8.5	0.43		
TFA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	8.08	7	1	Diesel	78	0.36		
TFA-Bethany-04	Compactor, Trench Roller, Vib 32"w CAT	Rollers	16.15	7	2	Diesel	20	0.38		
TFA-Bethany-05	14 M	Grader	48.57	14	3	Diesel	274	0.41		
TFA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP Water	Rollers	48.57	14	3	Diesel	156	0.38		
TFA-Bethany-05	Pump, 4" Diesel	Pumps	48.57	14	3	Diesel	10	0.74		
TFA-Bethany-06	CAT LOADER/HOE 416 E	Rubber Tired Loaders	34.2	4	9	Diesel	78	0.36		
TFA-Bethany-06	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	34.2	4	9	Diesel or Hybrid	224	0.42		
TFA-Bethany-06	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	34.2	4	9	Diesel or Hybrid	133	0.38		
TFA-Bethany-06	Asphalt Roller, 2 Drum 12tn, 137hp	Rollers	34.2	4	9	Diesel or Hybrid	137	0.38		
TFA-Bethany-07	Boom Truck, 12.5 Tn Boom	Crane	10	1	10	Diesel or Hybrid	100	0.29		
TFA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	10	1	10	Diesel	78	0.36		
TFA-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	10.47	3	3	Diesel	78	0.36		
TFA-Bethany-08	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	10.47	3	3	Diesel or Hybrid	224	0.42		
TFA-Bethany-08	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	10.47	3	3	Diesel or Hybrid	133	0.38		
TFA-Bethany-08	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	10.47	3	3	Diesel or Hybrid	137	0.38		
TFA-Bethany-09	LOADER/HOE 416 E	Rubber Tired Loaders	10.47	3	3	Diesel	78	0.36		
TFA-Bethany-09	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	10.47	3	3	Diesel or Hybrid	224	0.42		
TFA-Bethany-09	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	10.47	3	3	Diesel or Hybrid	133	0.38		
TFA-Bethany-09	Asphalt Roller, 2 Drum 12tn, 137hp	Rollers	10.47	3	3	Diesel or Hybrid	137	0.38		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Twin Cities Franklin Blvd Access  
Options B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
TFA-Bethany-02	Light Plant, 4 lite, 1000w	219.6	12		

Vehicle Inventory for Twin Cities Franklin Blvd Access  
Options B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
TFA-Bethany-01	Pickup, 1/2T	General Materials from Sacramento	5	1	0.8	1	0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-02	Pickup, 1/2T	General Materials from Sacramento	12	1	0.8	1	0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-02	20 Ton Flatbed Truck/End Dump	un Gravel 3 Inch Minus from Sacrame	12	422	0.8	527	44	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-03	40 Ton Tractor & Trailer	General Materials from Sacramento	1	1	0.8	1	1.0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-03	Pickup, 1/2T	General Materials from Sacramento	1	1	0.8	1	1	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-03	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Sacramento	1	1	0.8	1	1.0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-04	Pickup, 1/2T	General Materials from Sacramento	7	1	0.8	1	0.1	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Sacramento	7	2	0.8	3	0.4	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	7	0.8	0.8	1	0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-05	Pickup, 1/2T	General Materials from Sacramento	14	0.8	0.8	1	0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-05	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Sacramento	14	459.2	0.8	574	41	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-06	Pickup, 1/2T	General Materials from Sacramento	4	1	0.8	1	0.3	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-06	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Sacramento	4	182	0.8	228	57	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-07	40 Ton Tractor & Trailer	General Materials from Sacramento	1	0	0.8	0	0	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-07	Pickup, 1/2T	General Materials from Sacramento	1	0.8	0.8	1	1	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	1	1	0.8	1	1	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-08	Pickup, 1/2T	General Materials from Sacramento	3	1	0.8	1	0.3	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-08	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Sacramento	3	45	0.8	56	18.7	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-09	Pickup, 1/2T	General Materials from Sacramento	3	1	0.8	1	0.3	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
TFA-Bethany-09	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Sacramento	3	45	0.8	56	18.7	Twin Cities Franklin Access from Sacramento	24	48	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
TFA-Bethany-01	CAT 730 30T, Articulated End Dumbo	Dummers	5	210	not applicable	not applicable	not applicable	n-site: assume 5 miles/hou	not applicable	1052	Diesel or Hybrid	
TFA-Bethany-02	Cat 10motor w/Cat 770, 531HP	Dummers	12	27	not applicable	not applicable	not applicable	n-site: assume 5 miles/hou	not applicable	137	Diesel	
TFA-Bethany-04	Truck, End Dump, 120-53cu Hwy	Dummers	7	16	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	81	Diesel	



**Employees Required to Twin Cities Franklin Blvd Access  
Options B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
TFA-Bethany-01	OPERATING ENGINEER FOREMAN	21.05	10	Sacramento to TFA	24
TFA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	42.1	10	Sacramento to TFA	24
TFA-Bethany-01	Operator G4 Dozer & Push Cat	84.19	10	Sacramento to TFA	24
TFA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	210.48	10	Sacramento to TFA	24
TFA-Bethany-01 Total					
TFA-Bethany-02	Laborer G2 General	6.59	10	Sacramento to TFA	24
TFA-Bethany-02	OPERATING ENGINEER FOREMAN	54.9	10	Sacramento to TFA	24
TFA-Bethany-02	Operator G2 Finish Blade	27.45	10	Sacramento to TFA	24
TFA-Bethany-02	Operator G4 Dozer & Push Cat	54.9	10	Sacramento to TFA	24
<b>TFA-Bethany-02</b>	<b>Operator G5 Compactor w-blade</b>		<b>54.9</b>	<b>Sacramento to TFA</b>	<b>24</b>
TFA-Bethany-02	Teamster G3 ED 8-24cy, Water>7mgal	27.45	10	Sacramento to TFA	24
TFA-Bethany-02 Total					
TFA-Bethany-03	Laborer G1 Pipe layers	19.33	10	Sacramento to TFA	24
TFA-Bethany-03	Operator G3 BH-Loader>3/4cy	9.67	10	Sacramento to TFA	24
TFA-Bethany-03	Teamster G1 Hwy ED<6cy, Flatber	7.25	10	Sacramento to TFA	24
TFA-Bethany-03	Teamster G2 Hwy ED 6-8cy, Wate	2.42	10	Sacramento to TFA	24
<b>TFA-Bethany-03</b>	<b>Laborer Foreman</b>	<b>4.83</b>	<b>10</b>	<b>Sacramento to TFA</b>	<b>24</b>
TFA-Bethany-03 Total					
TFA-Bethany-04	Laborer G1 Pipe layers	32.3	10	Sacramento to TFA	24
TFA-Bethany-04	Laborer G1 Power Tamper	16.15	10	Sacramento to TFA	24
TFA-Bethany-04	Teamster G2 Hwy ED 6-8cy, Water<7	16.15	10	Sacramento to TFA	24
TFA-Bethany-04	Operator G4 Loader <4.1cy	8.08	10	Sacramento to TFA	24
TFA-Bethany-04 Total					
TFA-Bethany-05	Laborer G3 Flagman	97.14	10	Sacramento to TFA	24
TFA-Bethany-05	OPERATING ENGINEER FOREMAN	48.57	10	Sacramento to TFA	24
TFA-Bethany-05	Operator G2 Finish Blade	48.57	10	Sacramento to TFA	24
TFA-Bethany-05	Operator G4 Grade Check	48.57	10	Sacramento to TFA	24
<b>TFA-Bethany-05</b>	<b>Teamster G2 Hwy ED 6-8cy, Water&lt;7</b>	<b>48.57</b>	<b>10</b>	<b>Sacramento to TFA</b>	<b>24</b>
TFA-Bethany-05	Operator G7 Roller, Compactor	48.57	10	Sacramento to TFA	24
TFA-Bethany-05	Operator G8 Generator	9.71	10	Sacramento to TFA	24
TFA-Bethany-05 Total					
TFA-Bethany-06	Laborer G2 General	136.8	10	Sacramento to TFA	24
TFA-Bethany-06	OPERATING ENGINEER FOREMAN	34.2	10	Sacramento to TFA	24
TFA-Bethany-06	Operator G3 BH-Loader>3/4cy	34.2	10	Sacramento to TFA	24
TFA-Bethany-06	Operator G4 Grade Check	34.2	10	Sacramento to TFA	24
<b>TFA-Bethany-06</b>	<b>Teamster G2 Hwy ED 6-8cy, Water&lt;7</b>	<b>17.1</b>	<b>10</b>	<b>Sacramento to TFA</b>	<b>24</b>
TFA-Bethany-06	Operator G5 Asphalt Roller	68.4	10	Sacramento to TFA	24
TFA-Bethany-06	Operator G5 Paver	34.2	10	Sacramento to TFA	24
TFA-Bethany-06 Total					
TFA-Bethany-07	Laborer G2 General	40	10	Sacramento to TFA	24
TFA-Bethany-07	OPERATING ENGINEER FOREMAN	10	10	Sacramento to TFA	24
TFA-Bethany-07	Operator G3 BH-Loader>3/4cy	10	10	Sacramento to TFA	24
TFA-Bethany-07	Teamster G3 Boom Truck	10	10	Sacramento to TFA	24
TFA-Bethany-07	Iron Worker-Rigger	10	10	Sacramento to TFA	24
TFA-Bethany-07	Operator G4a Boom truck<15 ton	10	10	Sacramento to TFA	24
<b>TFA-Bethany-07 Total</b>					
TFA-Bethany-08	Laborer G2 General	41.89	10	Sacramento to TFA	24
TFA-Bethany-08	OPERATING ENGINEER FOREMAN	10.47	10	Sacramento to TFA	24
TFA-Bethany-08	Operator G3 BH-Loader>3/4cy	10.47	10	Sacramento to TFA	24
TFA-Bethany-08	Operator G4 Grade Check	10.47	10	Sacramento to TFA	24
<b>TFA-Bethany-08</b>	<b>Teamster G2 Hwy ED 6-8cy, Water&lt;7</b>	<b>5.24</b>	<b>10</b>	<b>Sacramento to TFA</b>	<b>24</b>
TFA-Bethany-08	Operator G5 Asphalt Roller	20.95	10	Sacramento to TFA	24
TFA-Bethany-08	Operator G5 Paver	10.47	10	Sacramento to TFA	24
TFA-Bethany-08 Total					
TFA-Bethany-09	Laborer G2 General	41.89	10	Sacramento to TFA	24
TFA-Bethany-09	OPERATING ENGINEER FOREMAN	10.47	10	Sacramento to TFA	24
TFA-Bethany-09	Operator G3 BH-Loader>3/4cy	10.47	10	Sacramento to TFA	24
TFA-Bethany-09	Operator G4 Grade Check	10.47	10	Sacramento to TFA	24
TFA-Bethany-09	Teamster G2 Hwy ED 6-8cy, Water<7	5.24	10	Sacramento to TFA	24
TFA-Bethany-09	Operator G5 Asphalt Roller	20.95	10	Sacramento to TFA	24
TFA-Bethany-09	Operator G5 Paver	10.47	10	Sacramento to TFA	24

## Marine Inventory for Twin Cities Franklin Blvd Access Options B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



**Helicopter Inventory for Twin Cities Franklin Blvd Access**  
**Options B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

## Options B2

[illegible]

**Demolition Assumptions for Twin Cities Franklin Blvd Access  
Options B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Terminus Tract Shaft  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
Clear and Grub	TI-Eastern - 1	3/20/2030	3/26/2030	5	5	10
Ground Improvement	TI-Eastern - 2	3/27/2030	4/16/2030	15	5	10
Raise Shaft Pad	TI-Eastern - 3	9/18/2030	7/10/2031	212	5	10
Excavate, Set Strips, & Place Guide Wall	TI-Eastern - 4	7/11/2031	7/21/2031	7	1	10
Place Guide Walls Concrete	TI-Eastern - 5	7/29/2031	7/30/2031	2	2	10
Excavate Slurry Wall & Place Concrete & Rebar	TI-Eastern - 6	7/31/2031	9/8/2031	40	7	24
Slurry Wall including Strip Forms and Place Rebar & Top Beam	TI-Eastern - 7	9/9/2031	10/21/2031	43	7	24
Excavate Shaft	TI-Eastern - 8	10/22/2031	6/2/2032	225	7	24
Place Tremie Seal Rebar, Cooling Pipes, & Seal	TI-Eastern - 9	10/22/2031	12/18/2031	58	7	24
Dewater Shaft	TI-Eastern - 10	12/19/2031	12/25/2031	7	7	24
Place TBM Cradle Rebar and Cradle Pour	TI-Eastern - 11	12/26/2031	1/2/2032	6	5	10
Breakout Slurry Wall for TBM	TI-Eastern - 12	1/5/2032	1/29/2032	19	5	10
Assemble & Place Buttress, Form, & Concrete for Shaft Liner	TI-Eastern - 13	1/30/2032	3/11/2032	30	5	10
Place Shaft Cover	TI-Eastern - 14	5/2/2036	5/9/2036	5	5	10

**Total Site Acres**

**13**

Offroad Equipment (Fossil Fuel) Inventory for Terminus Tract Shaft  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
TI-Eastern - 1	CAT D8 Dozer	Crawler Tractor	31	5	6	Diesel Tier 4 or Hybrid Diesel	179	0		
TI-Eastern - 1	CAT Grader 16H - 16' Blade	Grader	31	5	6	Diesel	285	0		
TI-Eastern - 1	623G Scraper Elevate 21 CY	Scraper	62	5	12	Diesel	359	0		
TI-Eastern - 3	CAT CB-634D Vibratory 84"	Rollers	1436	212	7	Diesel	145	0		
TI-Eastern - 3	CAT Grader 16H	Graders	1436	212	7	Diesel	285	0		
TI-Eastern - 3	CAT D8 Dozer	Crawler Tractor	1436	212	7	Diesel	328	0		
TI-Eastern - 4	CAT Hyd Excavator 1CY	Excavator	6	7	1	Diesel	138	0		
TI-Eastern - 4	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	6	7	1	Diesel or Hybrid	130	0		
TI-Eastern - 6	1600 CFM Compressor Diesel	Air Compressor	250	40	6	Diesel Tier 4	540	0		
TI-Eastern - 6	Hydraulic 55 Ton Crane	Crane	494	40	12	Diesel	350	0		
TI-Eastern - 6	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	247	40	6	Diesel or Hybrid	130	0		
TI-Eastern - 6	Slurry Wall Mixer & Desander & Stop End &	Cement & Mortar Mix	247	40	6	Diesel	8	1		
TI-Eastern - 6	Slurry Wall Techniwell	Pumps	247	40	6	Diesel	500	1		
TI-Eastern - 6	Manitowoc 777 200 Ton Crane	Crane	494	40	12	Diesel	760	0		
TI-Eastern - 7	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	236	43	5	Diesel or Hybrid	130	0		
TI-Eastern - 7	250 CFM Compressor Diesel	Air Compressor	16	43	0	Diesel Tier 3	75	0		
TI-Eastern - 7	Hydraulic Excavator to 3.5	Excavator	236	43	5	Diesel	138	0		
TI-Eastern - 7	CAT Hyd Excavator 1CY	Excavator	252	43	6	Diesel	138	0		
TI-Eastern - 7	Hydraulic 9 Ton Crane	Crane	16	43	0	Diesel	85	0		
TI-Eastern - 7	Hydraulic 40 Ton Crane	Crane	16	43	0	Diesel	300	0		
TI-Eastern - 7	CAT Forklift 5,500 LB	Aerial Lifts	16	43	0	Diesel	63	0		
TI-Eastern - 8	Manitowoc 777 200 Ton Crane	Crane	248	225	1	Diesel	760	0		
TI-Eastern - 9	Manitowoc 777 200 Ton Crane	Crane	111	58	2	Diesel	760	0		
TI-Eastern - 9	Hydraulic 40 Ton Crane	Crane	36	58	1	Diesel	300	0		
TI-Eastern - 9	Hydraulic 25 Ton Crane	Crane	76	58	1	Diesel	100	0		
TI-Eastern - 10	Dewater Pump 6"	Pump	400	7	57	Diesel	50	1		
TI-Eastern - 10	150 KW Diesel Generator	Generator	100	7	14	Diesel Tier 4	183	1		
TI-Eastern - 10	Hydraulic 15 Ton Crane	Crane	100	7	14	Diesel	100	0		
TI-Eastern - 11	Manitowoc 777 200 Ton Crane	Crane	36	6	6	Diesel	760	0		
TI-Eastern - 11	250 CFM Compressor Diesel	Air Compressor	8	6	1	Diesel Tier 3	75	0		
TI-Eastern - 11	Trailer Conc Pump 100 CY HR	Pump	8	6	1	Diesel	200	1		
TI-Eastern - 12	250 CFM Compressor Diesel	Air Compressor	300	19	16	Diesel Tier 3	75	0		
TI-Eastern - 12	Manitowoc 777 200 Ton Crane	Crane	300	19	16	Diesel	760	0		
TI-Eastern - 13	250 CFM Compressor Diesel	Air Compressor	678	30	23	Diesel Tier 3	75	0		
TI-Eastern - 13	Trailer Conc Pump 100 CY HR	Pump	340	30	11	Diesel	200	1		
TI-Eastern - 13	Manitowoc 777 200 Ton Crane	Crane	102	30	3	Diesel	760	0		
TI-Eastern - 13	Manitowoc 999-275 Ton Crane	Crane	288	30	10	Diesel	900	0		
TI-Eastern - 14	Hydraulic 9 Ton Crane	Crane	50	5	10	Diesel	85	0		
TI-Eastern - 14	Hydraulic 40 Ton Crane	Crane	50	5	10	Diesel	300	0		
TI-Eastern - 14	CAT Forklift 5,500 LB	Aerial Lift	50	5	10	Diesel	63	0		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT



Offroad Equipment (Electric) Inventory for Terminus Tract Shaft  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
NOT NEEDED					

Vehicle Inventory for Terminus Tract Shaft  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# days	Vehicle Hours	Hours/Trip	# of Vehicles On Site	One-Way Trips/Day	Trip Location To/From	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
Ti-Eastern - 1	Truck, Water, 4 legal Hwy	Recycled Water from Lodi	5	83	0	192	38	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 1	Truck, Flatbed, 10T, Hwy	Scraper to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 1	Truck, Flatbed, 10T, Hwy	Dozer and Grader from Stockton	1	1	1	2	2	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 2	Truck, Water, 4 legal Hwy	Recycled Water from Lodi	15	83	0	192	13	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 2	Truck, Flatbed, 10T, Hwy	Dozer and Grader from Stockton	15	1	1	2	61	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 3	Highway Dump Truck 18 CY	Materials from Stockton	212	1436	1	2268	11	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 3	Truck, Water, 4 legal Hwy	Recycled Water from Lodi	212	637	0	1470	7	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 3	Truck End Dump/ 16-20cy Hwy	trial in Covered Trucks from Twin Cities	212	3512	1	4214	20	Terminus Shaft to/from Twin Cities Complex	25	50	Diesel	
Ti-Eastern - 3	Truck, Flatbed, 10T, Hwy	Roller to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 3	Truck, Flatbed, 10T, Hwy	Dozer and Grader to Stockton	1	1	1	2	2	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 4	Truck, Flatbed, 10T, Hwy	Excavator and Loader from Stockton	1	1	1	2	2	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 5	Truck Flatbed 4 T Highway	Rebar from Sacramento	2	1	1	1	1	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 5	Concrete Transit Mix Truck 12cy	Concrete from Lodi	2	10	0	23	12	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 6	Highway Dump Truck 18 CY	Slurry Wall Bentonite from Sacramento	40	260	1	195	5	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 6	Truck Flatbed 4 T Highway	Rebar from Sacramento	40	1	1	28	1	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 6	Concrete Transit Mix Truck 12cy	Concrete from Lodi	40	282	0	650	16	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 6	Truck, Water, 4 legal Hwy	Recycled Water from Lodi	40	145	0	335	8	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 6	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 6	Truck, Flatbed, 10T, Hwy	Crane from Stockton	1	1	1	1	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 7	Truck, Flatbed, 10T, Hwy	Excavator and Loader to Stockton	1	1	1	2	2	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 7	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	1	1	1	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 7	Truck, Flatbed, 10T, Hwy	Excavator, Forklift, and Crane from and to Stockton	2	4	1	6	3	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 7	Truck Flatbed 4 T Highway	Rebar from Sacramento	43	1	1	1	0	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 7	Concrete Transit Mix Truck 12cy	Concrete from Lodi	43	5	0	12	0	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 8	Truck Flatbed 4 T Highway	Rebar from Sacramento	225	9	1	7	0	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 8	Concrete Transit Mix Truck 12cy	Concrete from Lodi	225	210	0	484	2	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 9	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	1	1	1	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 9	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 10	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 11	Truck Flatbed 4 T Highway	Rebar from Sacramento	6	1	1	1	0	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 11	Concrete Transit Mix Truck 12cy	Concrete from Lodi	6	210	0	484	81	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 12	Truck Flatbed 4 T Highway	Rebar from Sacramento	19	7	1	5	0	Terminus Shaft to/from Sacramento	40	80	Diesel	
Ti-Eastern - 13	Concrete Transit Mix Truck 12cy	Concrete from Lodi	30	169	0	391	13	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 13	Truck, Water, 4 legal Hwy	Recycled Water from Lodi	30	166	0	384	13	Terminus Shaft to/from Lodi	13	26	Diesel	
Ti-Eastern - 13	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	1	1	1	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 13	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	1	1	2	1	Terminus Shaft to/from Stockton	19	38	Diesel	
Ti-Eastern - 14	Truck, Flatbed, 10T, Hwy	Excavator, Forklift, and two Cranes from and to Stockton	2	5	1	8	4	Terminus Shaft to/from Stockton	19	38	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On Site		
Ti-Eastern - 3	Highway Dump Truck 18 CY	Dumper	212	1436	not applicable	not applicable	not applicable	in-site, assume 5 miles/hour		7181	Diesel	
Ti-Eastern - 4	CAT 730 Rear Dump	Dumper	7	18	not applicable	not applicable	not applicable	in-site, assume 5 miles/hour		92	Diesel or Hybrid	
Ti-Eastern - 6	CAT 730 Rear Dump	Dumper	40	247	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		1235	Diesel or Hybrid	
Ti-Eastern - 6	Articulated Rear Dump 22 CY/CAT 730	Dumper	40	247	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		1235	Diesel or Hybrid	
Ti-Eastern - 6	Concrete Pump Truck	OP Highway Truck	40	494	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		2470	Diesel	
Ti-Eastern - 7	Highway Flatbed 10 Ton	OP Highway Truck	43	16	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		80	Diesel	
Ti-Eastern - 8	Trucking Off Highway CAT 730	Dumpers	225	1242	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		6210	Diesel	
Ti-Eastern - 9	Concrete Pump Truck	OP Highway Truck	58	76	not applicable	not applicable	not applicable	on-site, assume 5 miles/hour		380	Diesel	
Ti-Eastern - 14	Highway Flatbed 10 Ton	OP Highway Truck	5	50	not applicable	not applicable	not applicable	in-site, assume 5 miles/hour		250	Diesel	

**Employees Required for Terminus Tract Shaft  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
TI-Eastern - 1	General Foreman	15.54	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 1	Dozer Operator	31.08	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 1	Grader Operator	31.08	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 1	Operator G4 Grade Check	15.54	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 1	Scraper Operator	62.16	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-1					
TI-Eastern - 3	Grade Setter / Checker	1436.1	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 3	Water Truck Highway	1436.1	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 3	Compactor Operator	1436.1	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 3	Dozer Operator	1436.1	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 3	Grader Operator	1436.1	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 3	Truck Driver	1436.1	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-3					
TI-Eastern - 4	Shifter	6	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Lead Miner	6	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Miner	6	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Loader Operator	6	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Excavator Operator	6	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Truck Driver	17.94	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Carpenter	353.39	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 4	Carpenter Foreman	88.35	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-4					
TI-Eastern - 5	General Laborer	10.9	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 5	Carpenter	94.95	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 5	Carpenter Foreman	23.74	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-5					
TI-Eastern - 6	General Laborer	2717	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	General Foreman	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Mechanic Welder	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Shaft Crane Operator	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Crane Oiler	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Truck Driver	247	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Shifter	741	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Lead Miner	247	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Miner	1976	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Hyd Crane Operator	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Loader Operator	247	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Slurry Wall Consultant	247	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Iron Worker Foreman	494	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 6	Iron Worker	2470	24	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-6					
TI-Eastern - 7	Loader Operator	235.5	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Excavator Operator	235.5	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	General Laborer	735.78	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	General Foreman	235.5	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Carpenter	33.2	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Carpenter Foreman	8.3	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Bullgang Foreman	16	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Bullgang Laborer	32	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Mechanic / Welder	16	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Hyd Crane Operator	32	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Flat Truck Driver	16	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Excavator Operator	16	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Iron Worker Foreman	12.68	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 7	Iron Worker	50.74	24	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-7					
TI-Eastern - 8	Diver Contractor	220	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 8	Shaft Crane Operator	248	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 8	Toplander	248	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 8	Crane Oiler	248	24	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-8					

TI-Eastern - 9	Diver Contractor	138.74	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Shifter	166.12	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Lead Miner	19.12	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Miner	446.95	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Hyd Crane Operator	188.94	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Toplander	255	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Bottomlander	111	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Shaft Crane Operator	111	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Iron Worker Foreman	147	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 9	Iron Worker	1176	24	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-9					
TI-Eastern - 10	Shifter	100	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 10	Lead Miner	100	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 10	Miner	800	24	Lodi to/from Terminus Shaft	13
TI-Eastern - 10	Hyd Crane Operator	100	24	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-10					
TI-Eastern - 11	Shifter	35.53	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Miner	120.27	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Shaft Crane Operator	35.53	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Toplander	35.53	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Crane Oiler	35.53	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Iron Worker	218.67	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Iron Worker Foreman	27.33	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Lead Miner	8.2	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Mechanic Welder	8.2	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 11	Electrician	8.2	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-11					
TI-Eastern - 12	Shaft Crane Operator	300	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 12	Toplander	300	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 12	Bottomlander	300	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 12	Crane Oiler	300	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 12	Iron Worker	2400	10	Lodi to/from Terminus Shaft	13.0
TI-Eastern - 12	Iron Worker Foreman	300	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-12					
TI-Eastern - 13	Shifter	678	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Lead Miner	678	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Miner	5324	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Mechanic / Welder	390	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Shaft Crane Operator	678	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Toplander	678	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Bottomlander	102	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Crane Oiler	626	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 13	Concrete Pump Operator	288	10	Lodi to/from Terminus Shaft	13
TOTAL TI-Eastern-13					
TI-Eastern - 14	Bullgang Foreman	50	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 14	Bullgang Laborer	100	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 14	Mechanic / Welder	50	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 14	Hyd Crane Operator	100	10	Lodi to/from Terminus Shaft	13
TI-Eastern - 14	Flat Truck Driver	50	10	Lodi to/from Terminus Shaft	13

TOTAL BI-Central-17

TOTAL BI-Central-17

Marine Inventory for Terminus Tract Shaft  
Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

Locomotive Inventory for Terminus Tract Shaft  
Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Terminus Tract Shaft  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED



Earthmoving/Paving Assumptions for Terminus Tract Shaft  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
Ti-Eastern - 1	13.3	5	3								
Ti-Eastern - 3		212					63210		298		
Ti-Eastern - 4		7			392	56					
Ti-Eastern - 5		2					218	109			
Ti-Eastern - 6		40			6175	154					
Ti-Eastern - 8		225			27325	121					

**Demolition Assumptions for Terminus Tract Shaft  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for King Island Shaft  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
Clear and Grub	KI-Eastern - 1	1/3/2029	1/23/2029	15	5	10
Ground Improvement	KI-Eastern - 2	2/14/2029	3/20/2029	25	5	10
Raise Shaft Pad	KI-Eastern - 3	3/21/2029	3/19/2030	260	5	10
Excavate, Set Strips, & Place Guide Wall	KI-Eastern - 4	3/20/2030	4/5/2030	13	5	10
Place Guide Walls Concrete	KI-Eastern - 5	4/8/2030	4/11/2030	4	4	10
Excavate Slurry Wall & Place Concrete & Rebar	KI-Eastern - 6	4/9/2030	6/1/2030	39	7	24
Slurry Wall including Strip Forms and Place Rebar & Top Beam	KI-Eastern - 7	5/17/2030	7/16/2030	43	7	24
Excavate Shaft	KI-Eastern - 8	7/1/2030	8/20/2030	37	7	24
Place Tremie Seal Rebar, Cooling Pipes, & Seal	KI-Eastern - 9	8/8/2030	8/26/2030	13	7	24
Dewater Shaft	KI-Eastern - 10	8/22/2030	8/30/2030	7	7	24
Place TBM Cradle Rebar and Cradle Pour	KI-Eastern - 11	8/29/2030	9/5/2030	6	5	10
Breakout Slurry Wall for TBM	KI-Eastern - 12	9/6/2030	10/2/2030	19	5	10
Assemble & Place Buttress, Form, & Concrete for Shaft Liner	KI-Eastern - 13	9/6/2030	12/16/2030	72	5	10
Place Shaft Cover	KI-Eastern - 14	12/26/2030	1/3/2031	7	5	10
Maintenance	KI-Eastern - 15	2/12/2036	3/12/2036	22	5	10

**Total Site Acres**

**12**

Offroad Equipment (Fossil Fuel) Inventory for King Island Shaft

Option B2

(note that tab spacing for "Hours," "# day," and "Hours/day" are shifted to left

Code	Equipment Name	General Equipment	Hours	# day	Hours/day	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
KI-Eastern - 1	CAT D8 Dozer	Crawler Tractor	22	15	15	1 Diesel Tier 4 or Hybrid Diesel	179	0		
KI-Eastern - 1	CAT Grader 16H - 16' Blade	Grader	22	15	15	1 Diesel	285	0		
KI-Eastern - 1	623G Scraper Elevate 21 CY	Scraper	45	15	15	3 Diesel	359	0		
KI-Eastern - 3	CAT CB-634D Vibratory 84"	Rollers	1784	260	260	7 Diesel	145	0		
KI-Eastern - 3	CAT Grader 16H	Graders	1784	260	260	7 Diesel	285	0		
KI-Eastern - 3	CAT D8 Dozer	Crawler Tractor	1784	260	260	7 Diesel	328	0		
KI-Eastern - 4	CAT Hyd Excavator 1CY	Excavator	6	13	13	0 Diesel	138	0		
KI-Eastern - 4	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	6	13	13	0 Diesel or Hybrid	130	0		
KI-Eastern - 6	1600 CFM Compressor Diesel	Air Compressor	211	39	39	5 Diesel Tier 4	540	0		
KI-Eastern - 6	Hydraulic 55 Ton Crane	Crane	422	39	39	11 Diesel	350	0		
KI-Eastern - 6	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	211	39	39	5 Diesel or Hybrid	130	0		
KI-Eastern - 6	Slurry Wall Mixer & Desander & Stop End &	Cement & Mortar Mix	211	39	39	5 Diesel	8	1		
KI-Eastern - 6	Slurry Wall Techniwell	Pumps	211	39	39	5 Diesel	500	1		
KI-Eastern - 6	Manitowoc 777 200 Ton Crane	Crane	422	39	39	11 Diesel	760	0		
KI-Eastern - 7	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	236	43	43	5 Diesel or Hybrid	130	0		
KI-Eastern - 7	250 CFM Compressor Diesel	Air Compressor	4	43	43	0 Diesel Tier 3	75	0		
KI-Eastern - 7	Hydraulic Excavator to 3.5	Excavator	236	43	43	5 Diesel	138	0		
KI-Eastern - 7	CAT Hyd Excavator 1CY	Excavator	236	43	43	5 Diesel	138	0		
KI-Eastern - 8	Manitowoc 777 200 Ton Crane	Crane	231	37	37	6 Diesel	760	0		
KI-Eastern - 9	Manitowoc 777 200 Ton Crane	Crane	111	13	13	9 Diesel	760	0		
KI-Eastern - 9	Hydraulic 40 Ton Crane	Crane	36	13	13	3 Diesel	300	0		
KI-Eastern - 9	Hydraulic 25 Ton Crane	Crane	76	13	13	6 Diesel	100	0		
KI-Eastern - 10	Dewater Pump 6"	Pump	400	7	7	57 Diesel	50	1		
KI-Eastern - 10	150 KW Diesel Generator	Generator	100	7	7	14 Diesel Tier 4	183	1		
KI-Eastern - 10	Hydraulic 15 Ton Crane	Crane	100	7	7	14 Diesel	100	0		
KI-Eastern - 11	Manitowoc 777 200 Ton Crane	Crane	36	6	6	6 Diesel	760	0		
KI-Eastern - 11	250 CFM Compressor Diesel	Air Compressor	8	6	6	1 Diesel Tier 3	75	0		
KI-Eastern - 11	Trailer Conc Pump 100 CY HR	Pump	8	6	6	1 Diesel	200	1		
KI-Eastern - 12	250 CFM Compressor Diesel	Air Compressor	119	19	19	6 Diesel Tier 3	75	0		
KI-Eastern - 12	Manitowoc 777 200 Ton Crane	Crane	119	19	19	6 Diesel	760	0		
KI-Eastern - 13	250 CFM Compressor Diesel	Air Compressor	700	72	72	10 Diesel Tier 3	75	0		
KI-Eastern - 13	Trailer Conc Pump 100 CY HR	Pump	321	72	72	4 Diesel	200	1		
KI-Eastern - 13	Manitowoc 777 200 Ton Crane	Crane	102	72	72	1 Diesel	760	0		
KI-Eastern - 13	Manitowoc 999-275 Ton Crane	Crane	128	72	72	2 Diesel	900	0		
KI-Eastern - 13	Hydraulic 9 Ton Crane	Crane	265	72	72	4 Diesel	85	0		
KI-Eastern - 14	Hydraulic 9 Ton Crane	Crane	40	7	7	6 Diesel	85	0		
KI-Eastern - 14	Hydraulic 40 Ton Crane	Crane	40	7	7	6 Diesel	300	0		
KI-Eastern - 14	CAT Forklift 5,500 LB	Aerial Lift	40	7	7	6 Diesel	63	0		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for King Island Shaft  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
NOT NEEDED					

Vehicle Inventory for King Island Shaft  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles/Trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
KI-Eastern - 1	Truck, Flatbed, 10T, Hwy	Scrapers to and from Stockton	2	1	0.4	2	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 1	Truck, Flatbed, 10T, Hwy	Dozer and Grader from Stockton	1	0	0.4	1	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 2	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	25	90	0.4	225	9.0	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern - 2	Truck, Flatbed, 10T, Hwy	Materials from Stockton	25	25	0.4	57	2	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 3	Highway Dump Truck 18 CY	Materials from Stockton	260	1436	0.4	3314	12.7	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 3	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	260	854	0.4	2134	8.2	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern - 3	Truck End Dump 16-20cy Hwy	rial in Covered Trucks from Twin Cities	260	4533.533333	0.9	5231	20	King I Shaft to/from Twin Cities Complex	26	52	Diesel	
KI-Eastern - 3	Truck, Flatbed, 10T, Hwy	Roller to and from Stockton	2	0.866666667	0.4	2	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 3	Truck, Flatbed, 10T, Hwy	Dozer and Grader to Stockton	1	0.433333333	0.4	1	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -4	Truck, Flatbed, 10T, Hwy	Excavator and Loader from Stockton	1	1	0.4	2	2	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -4	Truck Flatbed 4 T Highway	Rebar from Sacramento	13	1	1.4	1	0	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern -4	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	13	19.93333333	0.9	23	2	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern -5	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	4	481	0.9	555	138.8	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern - 6	Highway Dump Truck 18 CY	Slurry Wall Bentonite from Sacramento	39	280	1.4	195	5.0	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern - 6	Truck Flatbed 4 T Highway	Rebar from Sacramento	39	34	1.4	24	0.6	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern - 6	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	39	176	0.4	440	11	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern - 6	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	0.9	0.4	2	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 6	Truck, Flatbed, 10T, Hwy	Crane from Stockton	1	0.4	0.4	1	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -7	Truck, Flatbed, 10T, Hwy	Excavator and Loader to Stockton	1	1	0.4	2	2.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -7	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	0	0.4	1	1.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -7	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	43	250	0.4	625	15	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern -7	Truck Flatbed 4 T Highway	Rebar from Sacramento	43	1.4	1.4	1	0	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern -7	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	43	9.5	0.9	11	0	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern - 8	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	37	90	0.4	225	6	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern - 9	Truck Flatbed 4 T Highway	Rebar from Sacramento	13	10	1.4	7	1	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern - 9	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	13	419	0.9	484	37.2	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern - 9	Truck, Flatbed, 10T, Hwy	Two Cranes to and from Stockton	2	2	0.4	4	2.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern - 9	Truck, Water, 4 kgal, Hwy	Recycled Water from Lodi	13	78.8	0.4	197	15	King I Shaft to/from Lodi	12	24	Diesel	
KI-Eastern -10	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	1	0.4	2	1.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -11	Truck Flatbed 4 T Highway	Rebar from Sacramento	6	1	1.4	1	0.2	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern -11	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	6	30.3	0.9	35	6	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern -12	Truck Flatbed 4 T Highway	Rebar from Sacramento	19	3	1.4	2	0.1	King I Shaft to/from Sacramento	43	86	Diesel	
KI-Eastern -13	Concrete Transit Mix Truck 12cy	Concrete from Lambert Road	72	316	0.9	365	5.1	King I Shaft to/from Lambert Road Concrete Batch Plant	26	52	Diesel	
KI-Eastern -13	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	0	0.4	1	1.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -13	Truck, Flatbed, 10T, Hwy	Crane to and from Stockton	2	0.9	0.4	2	1	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -14	Truck, Flatbed, 10T, Hwy	Forklift from and to Stockton	1	0.866666667	0.4	2	2	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -14	Truck, Flatbed, 10T, Hwy	Crane to Stockton	1	0	0.4	1	1.0	King I Shaft to/from Stockton	13	26	Diesel	
KI-Eastern -14	Truck, Flatbed, 10T, Hwy	Materials from Stockton	7	0	0.4	1	0.1	King I Shaft to/from Stockton	13	26	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
KI-Eastern - 3	Highway Dump Truck 18 CY	Dumper	260	1785	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		8913	Diesel	
KI-Eastern - 4	CAT 730 Rear Dump	Dumper	13	18	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		92	Diesel or Hybrid	
KI-Eastern - 6	CAT 730 Rear Dump	Dumper	39	241	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		1203	Diesel or Hybrid	
KI-Eastern - 6	Articulated Rear Dump 22 CY/CAT 730	Dumper	39	211	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		1055	Diesel or Hybrid	
KI-Eastern - 6	Concrete Pump Truck	Off-Highway Truck	39	422	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		2110	Diesel	
KI-Eastern - 8	Trucking Off Highway CAT 730	Dumpers	37	1155	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		5775	Diesel	
KI-Eastern - 9	Concrete Pump Truck	Off-Highway Truck	13	76	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		380	Diesel	
KI-Eastern -13	Highway Flatbed 30 Ton	Off-Highway Truck	72	60	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		300	Diesel	
KI-Eastern -14	Hiawav Flatbed 30 Ton	Off-Hiawav Truck	7	40	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour		300	Diesel	

**Employees Required for King Island Shaft  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
KI-Eastern - 1	General Foreman	11	10	Stockton to/from King I Shaft	13
KI-Eastern - 1	Dozer Operator	22	10	Stockton to/from King I Shaft	13
KI-Eastern - 1	Grader Operator	22	10	Stockton to/from King I Shaft	13
KI-Eastern - 1	Operator G4 Grade Check	11	10	Stockton to/from King I Shaft	13
KI-Eastern - 1	Scraper Operator	45	10	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-1					
KI-Eastern - 3	Grade Setter / Checker	1784	10	Stockton to/from King I Shaft	13
KI-Eastern - 3	Water Truck Highway	1784	10	Stockton to/from King I Shaft	13
KI-Eastern - 3	Compactor Operator	1784	10	Stockton to/from King I Shaft	13
KI-Eastern - 3	Dozer Operator	1784	10	Stockton to/from King I Shaft	13
KI-Eastern - 3	Grader Operator	1784	10	Stockton to/from King I Shaft	13
KI-Eastern - 3	Truck Driver	1784	10	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-3					
KI-Eastern - 4	Shifter	6	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Lead Miner	6	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Miner	6	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Loader Operator	6	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Excavator Operator	6	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Truck Driver	18	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Carpenter	353	10	Stockton to/from King I Shaft	13
KI-Eastern - 4	Carpenter Foreman	88	10	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-4					
KI-Eastern - 5	General Laborer	11	10	Stockton to/from King I Shaft	13
KI-Eastern - 5	Carpenter	95	10	Stockton to/from King I Shaft	13
KI-Eastern - 5	Carpenter Foreman	24	10	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-5					
KI-Eastern - 6	General Laborer	2321	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	General Foreman	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Mechanic Welder	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Shaft Crane Operator	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Crane Oiler	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Truck Driver	241	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Shifter	633	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Lead Miner	211	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Miner	1688	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Hyd Crane Operator	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Loader Operator	211	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Slurry Wall Consultant	211	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Iron Worker Foreman	422	24	Stockton to/from King I Shaft	13
KI-Eastern - 6	Iron Worker	2110	24	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-6					
KI-Eastern - 7	Loader Operator	236	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	Excavator Operator	236	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	General Laborer	736	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	General Foreman	236	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	Carpenter	37	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	Carpenter Foreman	9	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	Iron Worker Foreman	13	24	Stockton to/from King I Shaft	13
KI-Eastern - 7	Iron Worker	51	24	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-7					
KI-Eastern - 8	Diver Contractor	220	24	Stockton to/from King I Shaft	13
KI-Eastern - 8	Shaft Crane Operator	231	24	Stockton to/from King I Shaft	13
KI-Eastern - 8	Toplander	231	24	Stockton to/from King I Shaft	13
KI-Eastern - 8	Crane Oiler	231	24	Stockton to/from King I Shaft	13
TOTAL KI-Eastern-8					
KI-Eastern - 9	Diver Contractor	139	24	Stockton to/from King I Shaft	13
KI-Eastern - 9	Shifter	166	24	Stockton to/from King I Shaft	13
KI-Eastern - 9	Lead Miner	19	24	Stockton to/from King I Shaft	13
KI-Eastern - 9	Miner	447	24	Stockton to/from King I Shaft	13
KI-Eastern - 9	Hyd Crane Operator	112	24	Stockton to/from King I Shaft	13

KI-Eastern - 9	Toplander	255	24	Stockton to/from King I Shaft	13	
KI-Eastern - 9	Bottomlander	111	24	Stockton to/from King I Shaft	13	
KI-Eastern - 9	Shaft Crane Operator	111	24	Stockton to/from King I Shaft	13	
KI-Eastern - 9	Iron Worker Foreman	147	24	Stockton to/from King I Shaft	13	
KI-Eastern - 9	Iron Worker	1176	24	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-9						
KI-Eastern - 10	Shifter	100	24	Stockton to/from King I Shaft	13	
KI-Eastern - 10	Lead Miner	100	24	Stockton to/from King I Shaft	13	
KI-Eastern - 10	Miner	800	24	Stockton to/from King I Shaft	13	
KI-Eastern - 10	Hyd Crane Operator	100	24	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-10						
KI-Eastern - 11	Shifter	36	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Miner	120	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Shaft Crane Operator	36	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Toplander	36	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Crane Oiler	36	10	Stockton to/from King I Shaft	13	13
KI-Eastern - 11	Iron Worker	216	10	Stockton to/from King I Shaft	13	13
KI-Eastern - 11	Iron Worker Foreman	27	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Lead Miner	8	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Mechanic Welder	8	10	Stockton to/from King I Shaft	13	
KI-Eastern - 11	Electrician	8	10	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-11						
KI-Eastern - 12	Shaft Crane Operator	119	10	Stockton to/from King I Shaft	13	
KI-Eastern - 12	Toplander	119	10	Stockton to/from King I Shaft	13	
KI-Eastern - 12	Bottomlander	119	10	Stockton to/from King I Shaft	13	
KI-Eastern - 12	Crane Oiler	119	10	Stockton to/from King I Shaft	13	13
KI-Eastern - 12	Iron Worker	949	10	Stockton to/from King I Shaft	13	13
KI-Eastern - 12	Iron Worker Foreman	119	10	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-12						
KI-Eastern - 13	Shifter	700	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Electric Welder 400 AMP	205	10	Stockton to/from King I Shaft	13.0	13
KI-Eastern - 13	Electrician	265	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Hyd Crane Operator	60	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Lead Miner	700	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Miner	4681	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Mechanic / Welder	840	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Shaft Crane Operator	230	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Toplander	230	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Bottomlander	102	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Crane Oiler	178	10	Stockton to/from King I Shaft	13	
KI-Eastern - 13	Concrete Pump Operator	64	10	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-13						
KI-Eastern - 14	Bullgang Foreman	40	10	Stockton to/from King I Shaft	13	
KI-Eastern - 14	Bullgang Laborer	80	10	Stockton to/from King I Shaft	13	
KI-Eastern - 14	Mechanic / Welder	40	10	Stockton to/from King I Shaft	13	
KI-Eastern - 14	Hyd Crane Operator	80	10	Stockton to/from King I Shaft	13	
KI-Eastern - 14	Flat Truck Driver	40	10	Stockton to/from King I Shaft	13	
TOTAL KI-Eastern-14						
KI-Eastern - 15	Shifter	1200	10	Stockton to/from King I Shaft	13	13
KI-Eastern - 15	Lead Miner	1200	10	Stockton to/from King I Shaft	13	
KI-Eastern - 15	Miner	7200	10	Stockton to/from King I Shaft	13	
KI-Eastern - 15	Mechanic / Welder	1200	10	Stockton to/from King I Shaft	13	
KI-Eastern - 15	Electrician	1200	10	Stockton to/from King I Shaft	13	
KI-Eastern - 15	TBM Operator	2400	10	Stockton to/from King I Shaft	13	
KI-Eastern - 15	Conveyor Belt Man	1200	10	Stockton to/from King I Shaft	13	



## Marine Inventory for King Island Shaft Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

## Locomotive Inventory for King Island Shaft Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for King Island Shaft**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for King Island Shaft  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
KI-Eastern - 1	12	15	1								
KI-Eastern - 3		260					78458		302		
KI-Eastern - 4		13			392	30					
KI-Eastern - 5		4					218		55		
KI-Eastern - 6		39			5268	135					
KI-Eastern - 7		43					5268		135		
KI-Eastern - 8		37			25420	687			104		2
KI-Eastern - 9		13					4592		353		
KI-Eastern - 11		6					328		55		
KI-Eastern - 13		72					3420		48		

**Demolition Assumptions for King Island Shaft  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Lower Roberts Island - Access Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	LRA-Bethany-01	2/16/2026	3/12/2026	19	5	10
02 - Road Embankment	LRA-Bethany-02	3/13/2026	4/21/2026	28	5	10
03 - Bridge Construction	LRA-Bethany-03	4/22/2026	11/13/2026	148	5	10
04 - Culvert Pipe	LRA-Bethany-04	4/22/2026	4/27/2026	4	4	10
05 - Road Subdrain System	LRA-Bethany-05	4/28/2026	6/22/2026	40	5	10
06 - Road Base	LRA-Bethany-06	6/23/2026	7/28/2026	26	5	10
07 - Initial Overlay	LRA-Bethany-07	11/16/2026	12/18/2026	25	5	10
08 - Signs and Signals	LRA-Bethany-08	12/21/2026	12/22/2026	2	2	10
09 - Intermediate Overlay	LRA-Bethany-09	4/26/2030	5/23/2030	20	5	10
10 - Final Overlay	LRA-Bethany-10	1/21/2038	3/21/2028	10	5	10

**Total Site Acres** **50**

**Offroad Equipment (Fossil Fuel) Inventory for Lower Roberts Island Access Road  
Option B2**

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
LRA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	363	19	19	Diesel or Hybrid	179	0		
LRA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	182	19	10	Diesel	384	0		
LRA-Bethany-02	CAT 14 M	Grader	133	28	5	Diesel	274	0		
LRA-Bethany-02	CAT 815, Roller	Rollers	265	28	9	Diesel	170	0		
LRA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	265	28	9	Diesel or Hybrid	179	0		
LRA-Bethany-02	Water Pump, 4" Diesel	Pumps	32	28	1	Diesel	10	1		
LRA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	62	4	16	Diesel	78	0		
LRA-Bethany-04	Air Compressor 375 cfm	Air Compressor	31	4	8	Diesel - Tier 4	122	0		
LRA-Bethany-04	Compactor, Plate, 22"w x 35"	Plate Compactors	31	4	8	Diesel	9	0		
LRA-Bethany-05	CAT LOADER/HOE 416 E	Rubber Tired Loaders	96	40	2	Diesel	78	0		
LRA-Bethany-05	Compactor, Trench Roller, Vib 32"w CAT	Rollers	193	40	5	Diesel	20	0		
LRA-Bethany-06	14 M	Grader	342	26	13	Diesel	274	0		
LRA-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP Water	Rollers	342	26	13	Diesel	156	0		
LRA-Bethany-06	Pump, 4" Diesel	Pumps	342	26	13	Diesel	10	1		
LRA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	243	25	10	Diesel or Hybrid	224	0		
LRA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	243	25	10	Diesel or Hybrid	133	0		
LRA-Bethany-07	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	243	25	10	Diesel or Hybrid	137	0		
LRA-Bethany-07	LOADER/HOE 416 E	Rubber Tired Loaders	243	25	10	Diesel	78	0		
LRA-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	11	2	6	Diesel	78	0		
LRA-Bethany-08	Boom Truck, 12.5 Tn Boom	Crane	11	2	6	Diesel or Hybrid	100	0		
LRA-Bethany-09	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	126	20	6	Diesel or Hybrid	224	0		
LRA-Bethany-09	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	126	20	6	Diesel or Hybrid	133	0		
LRA-Bethany-09	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	126	20	6	Diesel or Hybrid	137	0		
LRA-Bethany-09	LOADER/HOE 416 E	Rubber Tired Loaders	126	20	6	Diesel	78	0		
LRA-Bethany-10	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	126	10	13	Diesel or Hybrid	224	0		
LRA-Bethany-10	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	126	10	13	Diesel or Hybrid	133	0		
LRA-Bethany-10	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	126	10	13	Diesel or Hybrid	137	0		
LRA-Bethany-10	LOADER/HOE 416 E	Rubber Tired Loaders	126	10	13	Diesel	78	0		

Offroad Equipment (Electric) Inventory for Lower Roberts Island Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
LRA-Bethany-02	Light Plant, 4 lite, 1000w	1060	28		



Vehicle Inventory for Lower Roberts Island Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles/trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
LRA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	19	1	0.6	1	0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-02	20 Ton Flatbed Truck/End Dump	Iturun Gravel 3 Inch Minus from Verna	28	2842	0.9	3045	109	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-02	Pickup, 1/2T	General Materials from Stockton	28	1	0.6	1	0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	148	32	0.6	50	0.3	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	4	6	0.9	6	2	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-04	Pickup, 1/2T	General Materials from Stockton	4	1	0.6	1	0.3	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-04	40 Ton Tractor & Trailer	General Materials from Stockton	4	1	0.6	2	0.5	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	40	3	0.6	4	0.1	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-05	20 Ton Flatbed Truck/End Dump	Iturun Gravel 3 Inch Minus from Verna	40	24.26666667	0.9	26	1	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-05	Pickup, 1/2T	General Materials from Stockton	40	0.633333333	0.6	1	0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-06	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	26	3484.133333	0.9	3733	144	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-06	Pickup, 1/2T	General Materials from Stockton	26	1	0.6	1	0.0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-07	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	25	1385	0.9	1484	59	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-07	Pickup, 1/2T	General Materials from Stockton	25	1	0.6	1	0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	2	0.633333333	0.6	1	1	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-08	Pickup, 1/2T	General Materials from Stockton	2	1	0.6	1	1	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	2	0	0.6	0	0.0	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-09	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	20	621	0.9	665	33.3	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-09	Pickup, 1/2T	General Materials from Stockton	20	1	0.6	1	0.1	Lower Roberts Access from Stockton	19	38	Diesel	
LRA-Bethany-10	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	10	621	0.9	665	66.5	Lower Roberts Access from Vernalis	28	56	Diesel	
LRA-Bethany-10	Pickup, 1/2T	General Materials from Stockton	10	1	0.6	1	0	Lower Roberts Access from Stockton	19	38	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
LRA-Bethany-01	CAT 730 30T, Articulated End Dump	Dumpers	19	908	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	4540	Diesel or Hybrid	
LRA-Bethany-02	Cat 10mpal w/Cat 770, 511HP	Dumpers	28	133	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	663	Diesel	
LRA-Bethany-05	Truck, End Dump, 10-12cu. Yew	Dumpers	40	193	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	963	Diesel	

**Employees Required for Lower Roberts Island Access Road  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
LRA-Bethany-01	OPERATING ENGINEER FOREMAN	91	10	Stockton to LRA	19
LRA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	182	10	Stockton to LRA	19
LRA-Bethany-01	Operator G4 Dozer & Push Cat	363	10	Stockton to LRA	19
LRA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	908	10	Stockton to LRA	19
LRA-Bethany-01 Total					
LRA-Bethany-02	Laborer G2 General	32	10	Stockton to LRA	19
LRA-Bethany-02	OPERATING ENGINEER FOREMAN	265	10	Stockton to LRA	19
LRA-Bethany-02	Operator G2 Finish Blade	133	10	Stockton to LRA	19
LRA-Bethany-02	Operator G4 Dozer & Push Cat	265	10	Stockton to LRA	19
LRA-Bethany-02	Operator G5 Compactor w-blade	265	10	Stockton to LRA	19
LRA-Bethany-02	Teamster G3 ED 8-24cy, Water>7mgal	133	10	Stockton to LRA	19
LRA-Bethany-02 Total					
LRA-Bethany-04	Operator G3 BH-Loader>3/4cy	62	10	Stockton to LRA	19
LRA-Bethany-04	Teamster G2 Hwy ED 6-8cy, Wate	16	10	Stockton to LRA	19
LRA-Bethany-04	Laborer Foreman	31	10	Stockton to LRA	19
LRA-Bethany-04	Laborer G1 Pipe layers	125	10	Stockton to LRA	19
LRA-Bethany-04	Teamster G1 Hwy ED<6cy, Flatber	47	10	Stockton to LRA	19
LRA-Bethany-04 Total					
LRA-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	193	10	Stockton to LRA	19
LRA-Bethany-05	Laborer G1 Pipe layers	385	10	Stockton to LRA	19
LRA-Bethany-05	Laborer G1 Power Tamper	193	10	Stockton to LRA	19
LRA-Bethany-05	Operator G4 Loader <4.1cy	96	10	Stockton to LRA	19
LRA-Bethany-05 Total					
LRA-Bethany-06	OPERATING ENGINEER FOREMAN	342	10	Stockton to LRA	19
LRA-Bethany-06	Operator G4 Grade Check	342	10	Stockton to LRA	19
LRA-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	342	10	Stockton to LRA	19
LRA-Bethany-06	Laborer G3 Flagman	685	10	Stockton to LRA	19
LRA-Bethany-06	Operator G2 Finish Blade	342	10	Stockton to LRA	19
LRA-Bethany-06	Operator G7 Roller, Compactor	342	10	Stockton to LRA	19
LRA-Bethany-06	Operator G8 Generator	68	10	Stockton to LRA	19
LRA-Bethany-06 Total					
LRA-Bethany-07	Laborer G2 General	971	10	Stockton to LRA	19
LRA-Bethany-07	OPERATING ENGINEER FOREMAN	243	10	Stockton to LRA	19
LRA-Bethany-07	Operator G3 BH-Loader>3/4cy	243	10	Stockton to LRA	19
LRA-Bethany-07	Operator G4 Grade Check	243	10	Stockton to LRA	19
LRA-Bethany-07	Operator G5 Asphalt Roller	486	10	Stockton to LRA	19
LRA-Bethany-07	Operator G5 Paver	243	10	Stockton to LRA	19
LRA-Bethany-07	Teamster G2 Hwy ED 6-8cy, Water<7	121	10	Stockton to LRA	19
LRA-Bethany-07 Total					
LRA-Bethany-08	Laborer G2 General	46	10	Stockton to LRA	19
LRA-Bethany-08	OPERATING ENGINEER FOREMAN	11	10	Stockton to LRA	19
LRA-Bethany-08	Operator G3 BH-Loader>3/4cy	11	10	Stockton to LRA	19
LRA-Bethany-08	Iron Worker-Rigger	11	10	Stockton to LRA	19
LRA-Bethany-08	Operator G4a Boom truck<15 ton	11	10	Stockton to LRA	19
LRA-Bethany-08	Teamster G3 Boom Truck	11	10	Stockton to LRA	19
LRA-Bethany-08 Total					
LRA-Bethany-09	Laborer G2 General	503	10	Stockton to LRA	19
LRA-Bethany-09	OPERATING ENGINEER FOREMAN	126	10	Stockton to LRA	19
LRA-Bethany-09	Operator G3 BH-Loader>3/4cy	126	10	Stockton to LRA	19
LRA-Bethany-09	Operator G4 Grade Check	126	10	Stockton to LRA	19
LRA-Bethany-09	Operator G5 Asphalt Roller	252	10	Stockton to LRA	19
LRA-Bethany-09	Operator G5 Paver	126	10	Stockton to LRA	19
LRA-Bethany-09	Teamster G2 Hwy ED 6-8cy, Water<7	63	10	Stockton to LRA	19
LRA-Bethany-09 Total					
LRA-Bethany-10	Laborer G2 General	503	10	Stockton to LRA	19
LRA-Bethany-10	OPERATING ENGINEER FOREMAN	126	10	Stockton to LRA	19
LRA-Bethany-10	Operator G3 BH-Loader>3/4cy	126	10	Stockton to LRA	19
LRA-Bethany-10	Operator G4 Grade Check	126	10	Stockton to LRA	19
LRA-Bethany-10	Operator G5 Asphalt Roller	252	10	Stockton to LRA	19
LRA-Bethany-10	Operator G5 Paver	126	10	Stockton to LRA	19
LRA-Bethany-10	Teamster G2 Hwy ED 6-8cy, Water<7	63	10	Stockton to LRA	19

## Marine Inventory for Lower Roberts Island Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

## Locomotive Inventory for Lower Roberts Island Access Road Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Lower Roberts Island Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Lower Roberts Island Access Road  
Option B2

Code	Stripping or Grading		# day	Stripping or Grading		Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
LRA-Bethany-01	0	19	0	0	32688	1720	0	0	0	0	0	0	0	0	0	0	0
LRA-Bethany-02	0	28	0	0	0	0	60956	2177	0	0	0	0	0	0	0	0	0
LRA-Bethany-06	0	26	0	0	0	0	41089	1580	0	0	0	0	0	0	0	0	0
LRA-Bethany-07	0	25	0	0	0	0	0	0	0	0	0	0	0	0	1201860	48074	48074
LRA-Bethany-09	0	20	0	0	0	0	0	0	0	0	0	0	0	0	537930	26897	26897
LRA-Bethany-10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	537930	53793	53793

**Demolition Assumptions for Lower Roberts Island Access Road  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

Construction Schedule for Lower Roberts Island Levees  
Option B2

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
Construct Levee improvements	LRL-Bethany-01	1/12/2028	3/21/2028	50	5	10

Total Site Acres

50



Offroad Equipment (Fossil Fuel) Inventory for Lower Roberts Island Levees  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
LRL-Bethany-01	621G 44 CY	Scaper	97.13	50	2	Diesel	330	0.48		
LRL-Bethany-01	631G 33 CY	Scaper	97.13	50	2	Diesel	515	0.48		
LRL-Bethany-01	CAT 825H Compactor	Rollers	48.56	50	1	Diesel	401	0.38		
LRL-Bethany-01	CAT D8 Dozer	Crawler Tractor	97.13	50	2	Diesel	328	0.43		
LRL-Bethany-01	CAT Grader 16H	Grader	49	50	1	Diesel	285	0.41		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Lower Roberts Island Levees  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
NOT NEEDED					

Vehicle Inventory for Lower Roberts Island Levees  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hour/Trip	# of Vehicles/trip	One-Way Trips/Day	Trip Location To/From	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
NOT NEEDED												
Vehicle Use on Unpaved/Dirt Surface (no access roads at work and ride lots) --- on the Construction Site										Miles On-Site		
NOT NEEDED												

**Employees Required for Lower Roberts Island Levees**  
**Option B2**

<b>Code</b>	<b>Employee Type</b>	<b>Hours</b>	<b># WorkDay</b>	<b>Trip Location (to/from)</b>	<b>Commute Miles/</b>
LRL-Bethany-01	Compactor	49	10	Stockton to LRL	19
LRL-Bethany-01	Compactor Operator	97	10	Stockton to LRL	19
LRL-Bethany-01	Dozer Operator	49	10	Stockton to LRL	19
LRL-Bethany-01	Grade Setter / Checker	49	10	Stockton to LRL	19
LRL-Bethany-01	Scraper Operator	194	10	Stockton to LRL	19
LRL-Bethany-01	Water Tanker Off road	49	10	Stockton to LRL	19

## Marine Inventory for Lower Roberts Island Levees Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



**Helicopter Inventory for Lower Roberts Island Levees**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Lower Roberts Island Levees  
Option B2

Code	Stripping or Grading		# day		Stripping or Grading	Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
LRL-Bethany-01			0	50	0		0	0	36424	728			0	0		0	0



**Demolition Assumptions for Lower Roberts Island Levees**  
**Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Lower Roberts Island Rail  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Mobilization	LRRR-Bethany-01	12/23/2026	12/23/2026	1	1	10
02 - Contractor Site Management & Facilities	LRRR-Bethany-02	12/23/2026	6/18/2027	128	5	10
03 - Excavate Track Bed	LRRR-Bethany-03	12/23/2026	1/5/2027	10	5	10
04 - Rail Embankment	LRRR-Bethany-04	1/6/2027	2/5/2027	23	5	10
05 - Rail Drainage	LRRR-Bethany-05	2/8/2027	3/17/2027	28	5	10
06 - Rail Sub-Ballast	LRRR-Bethany-06	3/18/2027	4/1/2027	11	5	10
07 - Rail Ballast	LRRR-Bethany-07	4/2/2027	4/19/2027	12	5	10
08 - Track	LRRR-Bethany-08	4/20/2027	6/18/2027	44	5	10
09 - Yard Facilities	LRRR-Bethany-09	6/21/2027	6/21/2027	1	1	10

**Total Site Acres**

**8**

Offroad Equipment (Fossil Fuel) Inventory for Lower Roberts Island Rail  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
LRRR-Bethany-02	Air Compressor 185 cfm	Air Compressor	27	128	0	Diesel - Tier 4	49	0.48		
LRRR-Bethany-02	Boom Truck, 12.5 Tn Boom	Crane	13	128	0	Diesel or Hybrid	100	0.29		
LRRR-Bethany-02	Fork Lift, 8000LB, RT, 4x4	Forklifts	1400	128	11	Diesel	142	0.2		
LRRR-Bethany-02	Grove RT Crane 30T, 160HP	Crane	560	128	4	Diesel	160	0.29		
LRRR-Bethany-03	CAT D6 LGPDozer w winch	Crawler Tractor	380	10	38	Diesel or Hybrid	179	0.43		
LRRR-Bethany-03	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	190	10	19	Diesel	384	0.38		
LRRR-Bethany-04	CAT 14 M	Grader	114	23	5	Diesel	274	0.41		
LRRR-Bethany-04	CAT 825, Roller	Rollers	228	23	10	Diesel	315	0.38		
LRRR-Bethany-04	CAT D6 LGPDozer w winch	Crawler Tractor	228	23	10	Diesel or Hybrid	179	0.43		
LRRR-Bethany-04	Water Pump, 4" Diesel	Pumps	27	23	1	Diesel	10	0.74		
LRRR-Bethany-05	CAT LOADER/HOE 416 E	Rubber Tired Loaders	68	28	2	Diesel	78	0.36		
LRRR-Bethany-05	Compactor, Trench Roller, Vib 32"w	Rollers	137	28	5	Diesel	20	0.38		
LRRR-Bethany-06	CAT 14 M	Grader	105	11	10	Diesel	274	0.41		
LRRR-Bethany-06	CAT 962 H Wheel Loader	Rubber Tired Loaders	105	11	10	Diesel	230	0.36		
LRRR-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	105	11	10	Diesel	156	0.38		
LRRR-Bethany-06	Water Pump, 4" Diesel	Pumps	21	11	2	Diesel	10	0.74		
LRRR-Bethany-07	CAT 14 M	Grader	118	12	10	Diesel	274	0.41		
LRRR-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	118	12	10	Diesel	230	0.36		
LRRR-Bethany-07	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	118	12	10	Diesel	156	0.38		
LRRR-Bethany-07	Water Pump, 4" Diesel	Pumps	24	12	2	Diesel	10	0.74		
LRRR-Bethany-08	CAT D6 LGPDozer w winch	Crawler Tractor	219	44	5	Diesel or Hybrid	179	0.43		
LRRR-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	874	44	20	Diesel	78	0.36		
LRRR-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	874	44	20	Diesel	247	0.29		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Lower Roberts Island Rail  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
LRRR-Bethany-02	400A, Electric Welder	26.67	128	14.4	3
LRRR-Bethany-04	Light Plant, 4 lite, 1000w	910	23		

Vehicle Inventory for Lower Roberts Island Rail  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
LRRR-Bethany-02	40 Ton Tractor & Trailer	General Materials from Stockton	128	3	0.6	4	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-02	Pickup, 1/2T	General Materials from Stockton	128	1	0.6	1	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-02	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	128	3	0.6	4	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-03	Pickup, 1/2T	General Materials from Stockton	10	1	0.6	1	0.1	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-04	Pickup, 1/2T	General Materials from Stockton	23	1	0.6	1	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	23	4249	0.9	4553	198.0	Lower Roberts Access Rail from Vernalis	28	56	Diesel	
LRRR-Bethany-05	Pickup, 1/2T	General Materials from Stockton	28	1	0.6	1	0.0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-05	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	28	18	0.9	19	0.7	Lower Roberts Access Rail from Vernalis	28	56	Diesel	
LRRR-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	28	1.9	0.6	3	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-06	Pickup, 1/2T	General Materials from Stockton	11	0.63333333	0.6	1	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-06	20 Ton Flatbed Truck/End Dump	Ballast from Stockton	11	1110.866667	0.6	1754	159	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-07	Pickup, 1/2T	General Materials from Stockton	12	1	0.6	1	0.1	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-07	20 Ton Flatbed Truck/End Dump	Ballast from Stockton	12	957	0.6	1511	126	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	44	32	0.6	51	1	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-08	Pickup, 1/2T	General Materials from Stockton	44	0.63333333	0.6	1	0	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	44	43	0.6	68	2	Lower Roberts Access Rail from Stockton	19	38	Diesel	
LRRR-Bethany-09	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1	1	0.6	1	1.0	Lower Roberts Access Rail from Stockton	19	38	Diesel	

Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
Off Highway Truck	128	1400.35	not applicable	not applicable	not applicable	Re: assume 5 miles	not applicable	7002		Diesel		
Dumpers	10	1140	not applicable	not applicable	not applicable	Re: assume 5 miles	not applicable	5700		Diesel or Hybrid		
Dumpers	23	113.8	not applicable	not applicable	not applicable	on-site: assume 5 n	not applicable	569		Diesel		
Dumpers	28	136.55	not applicable	not applicable	not applicable	on-site: assume 5 n	not applicable	682.75		Diesel		
Dumpers	11	420.82	not applicable	not applicable	not applicable	on-site: assume 5 n	not applicable	2104.1		Diesel		
Dumpers	12	473.78	not applicable	not applicable	not applicable	on-site: assume 5 n	not applicable	2368.9		Diesel		

**Employees Required for Lower Roberts Island Rail  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
LRRR-Bethany-02	Carpenter Apprentice	27	10	Stockton to LRRR	19
LRRR-Bethany-02	Carpenter Foreman	27	10	Stockton to LRRR	19
LRRR-Bethany-02	Carpenter Journeyman	53	10	Stockton to LRRR	19
LRRR-Bethany-02	Electrical Foreman	13	10	Stockton to LRRR	19
LRRR-Bethany-02	Electrician Journeyman	53	10	Stockton to LRRR	19
LRRR-Bethany-02	Iron Worker Journeyman	53	10	Stockton to LRRR	19
LRRR-Bethany-02	Rebar/Struct	53	10	Stockton to LRRR	19
LRRR-Bethany-02	Laborer G2 General	5653	10	Stockton to LRRR	38
LRRR-Bethany-02	Operator G3a Cranes 45 t and under	587	10	Stockton to LRRR	38
LRRR-Bethany-02	Teamster G1 Hwy ED<6cy, Flatbed	1400	10	Stockton to LRRR	19
LRRR-Bethany-02	Teamster G3 Boom Truck	13	10	Stockton to LRRR	19
LRRR-Bethany-02	Early Works - Rail - Admin Salaries	2800	10	Stockton to LRRR	19
LRRR-Bethany-02	Early Works - Rail - Engineering S	4200	10	Stockton to LRRR	19
LRRR-Bethany-02	Early Works - Rail - Management	2800	10	Stockton to LRRR	19
LRRR-Bethany-02	Early Works - Rail - Tech & Clerk S	7000	10	Stockton to LRRR	19
LRRR-Bethany-02 Total					
LRRR-Bethany-03	OPERATING ENGINEER FOREMAN	95	10	Stockton to LRRR	19
LRRR-Bethany-03	Operator G2 Excavator 3.5 to 7.0	190	10	Stockton to LRRR	19
LRRR-Bethany-03	Operator G4 Dozer & Push Cat	380	10	Stockton to LRRR	19
LRRR-Bethany-03	Teamster G3 ED 8-24cy, Water>7mgz	1140	10	Stockton to LRRR	19
LRRR-Bethany-03 Total					
LRRR-Bethany-04	Laborer G2 General	27	10	Stockton to LRRR	19
LRRR-Bethany-04	OPERATING ENGINEER FOREMAN	228	10	Stockton to LRRR	19
LRRR-Bethany-04	Operator G2 Finish Blade	114	10	Stockton to LRRR	19
LRRR-Bethany-04	Operator G4 Dozer & Push Cat	228	10	Stockton to LRRR	19
LRRR-Bethany-04	Operator G5 Compactor w-blade	228	10	Stockton to LRRR	19
LRRR-Bethany-04	Teamster G3 ED 8-24cy, Water>7mgz	114	10	Stockton to LRRR	19
LRRR-Bethany-04 Total					
LRRR-Bethany-05	Laborer G1 Pipe layers	273	10	Stockton to LRRR	19
LRRR-Bethany-05	Laborer G1 Power Tamper	137	10	Stockton to LRRR	19
LRRR-Bethany-05	Operator G3 BH-Loader>3/4cy	68	10	Stockton to LRRR	19
LRRR-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	137	10	Stockton to LRRR	19
LRRR-Bethany-05 Total					
LRRR-Bethany-06	Laborer G3 Flagman	210	10	Stockton to LRRR	19
LRRR-Bethany-06	OPERATING ENGINEER FOREMAN	105	10	Stockton to LRRR	19
LRRR-Bethany-06	Operator G2 Finish Blade	105	10	Stockton to LRRR	19
LRRR-Bethany-06	Operator G3 Loader >4cy	105	10	Stockton to LRRR	19
LRRR-Bethany-06	Operator G5 Compactor w-blade	105	10	Stockton to LRRR	19
LRRR-Bethany-06	Operator G8 Pump	21	10	Stockton to LRRR	19
LRRR-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	105	10	Stockton to LRRR	19
LRRR-Bethany-06	Teamster G3 ED 8-24cy, Water>7mgz	421	10	Stockton to LRRR	19
LRRR-Bethany-06 Total					
LRRR-Bethany-07	Laborer G3 Flagman	237	10	Stockton to LRRR	19
LRRR-Bethany-07	OPERATING ENGINEER FOREMAN	118	10	Stockton to LRRR	19
LRRR-Bethany-07	Operator G2 Finish Blade	118	10	Stockton to LRRR	19
LRRR-Bethany-07	Operator G3 Loader >4cy	118	10	Stockton to LRRR	19
LRRR-Bethany-07	Operator G5 Compactor w-blade	118	10	Stockton to LRRR	19
LRRR-Bethany-07	Operator G8 Pump	24	10	Stockton to LRRR	19
LRRR-Bethany-07	Teamster G2 Hwy ED 6-8cy, Water<7	118	10	Stockton to LRRR	19
LRRR-Bethany-07	Teamster G3 ED 8-24cy, Water>7mgz	474	10	Stockton to LRRR	19
LRRR-Bethany-07 Total					
LRRR-Bethany-08	Laborer G2 General	1748	10	Stockton to LRRR	19
LRRR-Bethany-08	OPERATING ENGINEER FOREMAN	437	10	Stockton to LRRR	19
LRRR-Bethany-08	Operator G2a Cranes 45 to 100 t	874	10	Stockton to LRRR	19
LRRR-Bethany-08	Operator G3 BH-Loader>3/4cy	874	10	Stockton to LRRR	19
LRRR-Bethany-08	Operator G4 Dozer & Push Cat	219	10	Stockton to LRRR	19
LRRR-Bethany-08	Operator G4 Grade Check	437	10	Stockton to LRRR	19
LRRR-Bethany-08	Teamster G2 Hwy ED 6-8cy, Water<7	219	10	Stockton to LRRR	19

## Marine Inventory for Lower Roberts Island Rail

### Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									





**Helicopter Inventory for Lower Roberts Island Rail**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmov  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
LRRR-Bethany-03	0	10	0	43700	4370	0	0	0	0	0	0
LRRR-Bethany-04	0	23	0	0	0	54625	2375	0	0	0	0
LRRR-Bethany-06	0	11	0	0	0	21041	1913	0	0	0	0
LRRR-Bethany-07	0	12	0	0	0	21320	1777	0	0	0	0

**Demolition Assumptions for Lower Roberts Island Rail  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Lower Roberts Island Shaft  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Site Facilities and support - Reach 4	LRI-Bethany-01	11/17/2027	6/29/2038	2770	5	10
02 - Mobilize and site Preparation Reach 4	LRI-Bethany-02	11/17/2027	10/4/2029	492	5	10
03 - Set up Site and Shaft pad Reach 4	LRI-Bethany-03	2/9/2028	2/8/2029	262	5	10
05 - Construct Double Shaft	LRI-Bethany-04	11/8/2028	8/27/2030	470	5	10
06 - Site Facilities and support - Reach 3	LRI-Bethany-05	11/8/2028	5/27/2036	1970	5	10
04 - Mobilize and site Preparation Reach 3	LRI-Bethany-06	11/8/2028	1/2/2029	40	5	10
07 - Set up Site Reach 3	LRI-Bethany-07	8/1/2029	6/3/2030	219	5	10
08 - TBM Assembly and Launch - Reach 4	LRI-Bethany-08	7/12/2030	12/13/2030	111	5	10
09 - TBM Assembly including Shaft Utilities - Reach 3	LRI-Bethany-09	8/23/2030	7/15/2031	233	5	10
10 - Tunnel Construction - Reach 4	LRI-Bethany-10	10/2/2030	10/16/2037	1838	6	20
11 - Tunnel Construction - Reach 3	LRI-Bethany-11	12/25/2030	3/12/2036	1361	6	20
12 - Remove TBM and Finsihing - Reach 3	LRI-Bethany-12	3/13/2036	6/4/2036	60	5	10
13 - Remove TBM and Finsihing - Reach 4	LRI-Bethany-13	10/19/2037	1/11/2038	61	5	10
14 - Site Restoration	LRI-Bethany-14	12/24/2037	6/29/2038	134	5	10

**Total Site Acres**

**610**

Offroad Equipment (Fossil Fuel) Inventory for Lower Roberts Island Shaft  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
LRI-Bethany-02	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	2824	492	6	Diesel or Hybrid	130	0.36		
LRI-Bethany-02	CAT D8 Dozer	Crawler Tractor	202	492	0	Diesel	328	0.43		
LRI-Bethany-02	CAT D8 Dozer	Crawler Tractor	1016	492	2	Diesel	328	0.43		
LRI-Bethany-02	CAT Forklift 5,500 LB	Aerial Lifts	400	492	1	Diesel	63	0.31		
LRI-Bethany-02	Concrete Pump Truck	Off-Highway Truck	464	492	1	Diesel	300	0.38		
LRI-Bethany-02	Hydraulic 9 Ton Crane	Crane	400	492	1	Diesel	85	0.29		
LRI-Bethany-02	Hydraulic 9 Ton Crane	Crane	312	492	1	Diesel	85	0.29		
LRI-Bethany-02	Hydraulic 9 Ton Crane	Crane	63	492	0	Diesel	85	0.29		
LRI-Bethany-02	Grader 16H - 16' Blade	Grader	1016	492	2	Diesel	285	0.41		
LRI-Bethany-02	623G Scraper Elevate 21 CY	Scaper	2032	492	4	Diesel	359	0.48		
LRI-Bethany-02	CAT Hyd Excavator 1CY	Excavator	2824	492	6	Diesel	138	0.38		
LRI-Bethany-02	Hydraulic 40 Ton Crane	Crane	400	492	1	Diesel	300	0.29		
LRI-Bethany-02	Air Compressor 375 CFM Diesel	Air Compressor	3547	492	7	Diesel - Tier 4	122	0.48		
LRI-Bethany-02	Case 590 SupN Loader BH	Rubber Tired Loaders	3547	492	7	Diesel	110	0.36		
LRI-Bethany-02	CAT 825H Compactor	Rollers	202	492	0	Diesel	401	0.38		
LRI-Bethany-02	CAT 980 Loader 7.5 CY	Rubber Tired Loaders	202	492	0	Diesel	393	0.36		
LRI-Bethany-02	CAT CB-634D Vibratory 84"	Rollers	202	492	0	Diesel	145	0.38		
LRI-Bethany-02	CAT Grader 16H	Grader	202	492	0	Diesel	285	0.41		
LRI-Bethany-02	DMM Deep Soil Mixer	Bore Drill Rigs	3547	492	7	Diesel	522	0.5		
LRI-Bethany-02	DMM Grout Mix Plant	Other Construction Equipn	3547	492	7	Diesel	500	0.34		
LRI-Bethany-02	Grove RT Crane 30 Ton	Crane	3547	492	7	Diesel	160	0.29		
LRI-Bethany-02	Portable 90 Kw Diesel Gen	Generator	3547	492	7	Diesel - Tier 4	158	0.74		
LRI-Bethany-03	CAT D8 Dozer	Crawler Tractor	120	262	0	Diesel	328	0.43		
LRI-Bethany-03	CAT D8 Dozer	Crawler Tractor	9647	262	37	Diesel	328	0.43		
LRI-Bethany-03	Concrete Pump Truck	Off-Highway Truck	280	262	1	Diesel	300	0.38		
LRI-Bethany-03	Hydraulic 9 Ton Crane	Crane	189	262	1	Diesel	85	0.29		
LRI-Bethany-03	Hydraulic 9 Ton Crane	Crane	38	262	0	Diesel	85	0.29		
LRI-Bethany-03	CAT 825H Compactor	Rollers	120	262	0	Diesel	401	0.38		
LRI-Bethany-03	CAT 980 Loader 7.5 CY	Rubber Tired Loaders	120	262	0	Diesel	393	0.36		
LRI-Bethany-03	CAT CB-634D Vibratory 84"	Rollers	120	262	0	Diesel	145	0.38		
LRI-Bethany-03	CAT CB-634D Vibratory 84"	Rollers	9647	262	37	Diesel	145	0.38		
LRI-Bethany-03	CAT Grader 16H	Grader	120	262	0	Diesel	285	0.41		
LRI-Bethany-03	CAT Grader 16H	Grader	9647	262	37	Diesel	285	0.41		
LRI-Bethany-04	150 KW Diesel Generator	Generator	100	470	0	Diesel - Tier 4	183	0.74		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	60	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	100	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	144	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	14	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	16	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	52	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	281	470	1	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	21	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	250 CFM Compressor Diesel	Air Compressor	181	470	0	Diesel - Tier 3	75	0.48		
LRI-Bethany-04	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	380	470	1	Diesel or Hybrid	130	0.36		
LRI-Bethany-04	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	508	470	1	Diesel or Hybrid	130	0.36		
LRI-Bethany-04	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	10	470	0	Diesel or Hybrid	130	0.36		
LRI-Bethany-04	CAT Forklift 5,500 LB	Aerial Lifts	16	470	0	Diesel	63	0.31		
LRI-Bethany-04	Concrete Pump Truck	Off-Highway Truck	1016	470	2	Diesel	300	0.38		
LRI-Bethany-04	Concrete Pump Truck	Off-Highway Truck	197	470	0	Diesel	300	0.38		
LRI-Bethany-04	Hydraulic 9 Ton Crane	Crane	16	470	0	Diesel	85	0.29		
LRI-Bethany-04	Manitowoc 999-275 Ton Crane	Crane	144	470	0	Diesel	900	0.29		
LRI-Bethany-04	Hydraulic 15 Ton Crane	Crane	100	470	0	Diesel	85	0.29		
LRI-Bethany-04	Hydraulic 25 Ton Crane	Crane	199	470	0	Diesel	100	0.29		
LRI-Bethany-04	Trailer Conc Pump 100 CY HR	Pumps	144	470	0	Diesel	200	0.74		
LRI-Bethany-04	Trailer Conc Pump 100 CY HR	Pumps	52	470	0	Diesel	200	0.74		
LRI-Bethany-04	Trailer Conc Pump 100 CY HR	Pumps	21	470	0	Diesel	200	0.74		
LRI-Bethany-04	Trailer Conc Pump 100 CY HR	Pumps	181	470	0	Diesel	200	0.74		
LRI-Bethany-04	1600 CFM Compressor Diesel	Air Compressor	508	470	1	Diesel - Tier 4	540	0.48		
LRI-Bethany-04	CAT Hyd Excavator 1CY	Excavator	380	470	1	Diesel	138	0.38		
LRI-Bethany-04	CAT Hyd Excavator 1CY	Excavator	16	470	0	Diesel	138	0.38		
LRI-Bethany-04	CAT Hyd Excavator 1CY	Excavator	10	470	0	Diesel	138	0.38		
LRI-Bethany-04	Dewater Pump 6"	Pumps	400	470	1	Diesel	50	0.74		
LRI-Bethany-04	Hydraulic 40 Ton Crane	Crane	80	470	0	Diesel	300	0.29		
LRI-Bethany-04	Hydraulic 40 Ton Crane	Crane	16	470	0	Diesel	300	0.29		
LRI-Bethany-04	Hydraulic 55 Ton Crane	Crane	508	470	1	Diesel	350	0.29		
LRI-Bethany-04	Hydromill	Bore Drill Rig	508	470	1	Diesel	522	0.5		
LRI-Bethany-04	Manitowoc 200 Ton Crane	Crane	508	470	1	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	60	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	100	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	128	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	688	470	1	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	52	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	508	470	1	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	233	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	281	470	1	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	71	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	21	470	0	Diesel	760	0.29		
LRI-Bethany-04	Manitowoc 777 200 Ton Crane	Crane	181	470	0	Diesel	760	0.29		
LRI-Bethany-04	Slurry Wall Mixer	Cement & Mortar Mix	508	470	1	Diesel	8	0.56		
LRI-Bethany-04	Slurry Wall Techniwell	Pumps	508	470	1	Diesel	500	0.74		
LRI-Bethany-06	CAT Forklift 5,500 LB	Aerial Lifts	400	40	10	Diesel	63	0.31		
LRI-Bethany-06	Hydraulic 9 Ton Crane	Crane	400	40	10	Diesel	85	0.29		
LRI-Bethany-06	Hydraulic 40 Ton Crane	Crane	400	40	10	Diesel	300	0.29		
LRI-Bethany-07	CAT D8 Dozer	Crawler Tractor	202	219	1	Diesel	328	0.43		
LRI-Bethany-07	Concrete Pump Truck	Off-Highway Truck	464	219	2	Diesel	300	0.38		
LRI-Bethany-07	Hydraulic 9 Ton Crane	Crane	312	219	1	Diesel	85	0.29		
LRI-Bethany-07	Hydraulic 9 Ton Crane	Crane	63	219	0	Diesel	85	0.29		
LRI-Bethany-07	Air Compressor 375 CFM Diesel	Air Compressor	3547	219	16	Diesel - Tier 4	122	0.48		
LRI-Bethany-07	Case 590 SupN Loader BH	Rubber Tired Loaders	3547	219	16	Diesel	110	0.36		
LRI-Bethany-07	CAT 825H Compactor	Rollers	202	219	1	Diesel	401	0.38		
LRI-Bethany-07	CAT 980 Loader 7.5 CY	Rubber Tired Loaders	202	219	1	Diesel	393	0.36		
LRI-Bethany-07	CAT CB-634D Vibratory 84"	Rollers	202	219	1	Diesel	145	0.38		
LRI-Bethany-07	CAT Grader 16H	Grader	202	219	1	Diesel	285	0.41		
LRI-Bethany-07	DMM Deep Soil Mixer	Bore Drill Rig	3547	219	16	Diesel	522	0.5		
LRI-Bethany-07	DMM Grout Mix Plant	Other Construction Equipn	3547	219	16	Diesel	500	0.34		
LRI-Bethany-07	Grove RT Crane 30 Ton	Crane	3547	219	16	Diesel	160	0.29		
LRI-Bethany-07	Portable 90 Kw Diesel Gen	Generator	3547	219	16	Diesel - Tier 4	158	0.74		
LRI-Bethany-08	250 CFM Compressor Diesel	Air Compressor	400	111	4	Diesel - Tier 3	75	0.48		
LRI-Bethany-08	250 CFM Compressor Diesel	Air Compressor	500	111	5	Diesel - Tier 3	75	0.48		
LRI-Bethany-08	Hydraulic 25 Ton Crane	Crane	160	111	1	Diesel	100	0.29		
LRI-Bethany-08	1600 CFM Compressor Diesel	Air Compressor	160	111	1	Diesel - Tier 4	540	0.48		
LRI-Bethany-08	Hydraulic 40 Ton Crane	Crane	400	111	4	Diesel	300	0.29		
LRI-Bethany-08	Hydraulic 40 Ton Crane	Crane	500	111	5	Diesel	300	0.29		
LRI-Bethany-08	Manitowoc 777 200 Ton Crane	Crane	400	111	4	Diesel	760	0.29		
LRI-Bethany-08	ST-2G LHD 2.5 CY	Rubber Tired Loaders	400	111	4	Diesel	109	0.36		

LRI-Bethany-08	Telescope RT Forklift 5500	Forklifts	160	111	1	Diesel	63	0.2
LRI-Bethany-08	Truck Crane Lattice Boom 90T	Crane	160	111	1	Diesel - Tier 4	300	0.29
LRI-Bethany-09	250 CFM Compressor Diesel	Air Compressor	400	233	2	Diesel - Tier 3	75	0.48
LRI-Bethany-09	250 CFM Compressor Diesel	Air Compressor	500	233	2	Diesel - Tier 3	75	0.48
LRI-Bethany-09	Hydraulic 25 Ton Crane	Crane	160	233	1	Diesel	100	0.29
LRI-Bethany-09	1600 CFM Compressor Diesel	Air Compressor	160	233	1	Diesel - Tier 4	540	0.48
LRI-Bethany-09	Hydraulic 40 Ton Crane	Crane	400	233	2	Diesel	300	0.29
LRI-Bethany-09	Hydraulic 40 Ton Crane	Crane	500	233	2	Diesel	300	0.29
LRI-Bethany-09	ST-2G LHD 2.5 CY	Rubber Tired Loaders	400	233	2	Diesel	109	0.36
LRI-Bethany-09	Telescope RT Forklift 5500	Forklifts	160	233	1	Diesel	63	0.2
LRI-Bethany-09	Truck Crane Lattice Boom 90T	Crane	160	233	1	Diesel - Tier 4	300	0.29
LRI-Bethany-10	250 CFM Compressor Diesel	Air Compressor	1000	1838	1	Diesel - Tier 3	75	0.48
LRI-Bethany-10	250 CFM Compressor Diesel	Air Compressor	891	1838	0	Diesel - Tier 3	75	0.48
LRI-Bethany-10	250 CFM Compressor Diesel	Air Compressor	35961	1838	20	Diesel - Tier 3	75	0.48
LRI-Bethany-10	CAT Forklift 5,500 LB	Aerial Lifts	3776	1838	2	Diesel	63	0.31
LRI-Bethany-10	CAT Forklift 5,500 LB	Aerial Lifts	15104	1838	8	Diesel	63	0.31
LRI-Bethany-10	Hydraulic 9 Ton Crane	Crane	3776	1838	2	Diesel	85	0.29
LRI-Bethany-10	Hydraulic 9 Ton Crane	Crane	15104	1838	8	Diesel	85	0.29
LRI-Bethany-10	Hydraulic 40 Ton Crane	Crane	3776	1838	2	Diesel	300	0.29
LRI-Bethany-10	Hydraulic 40 Ton Crane	Crane	15104	1838	8	Diesel	300	0.29
LRI-Bethany-10	Grout Mixer	Cement & Mortar Mix	1782	1838	1	Diesel	70	0.56
LRI-Bethany-10	Grout Pump	Cement & Mortar Mix	1782	1838	1	Diesel	500	0.56
LRI-Bethany-10	CAT 980 Loader 7.5 CY 250	Rubber Tired Loader	14704	1838	8	Diesel	400	0.36
LRI-Bethany-11	CFM Compressor Diesel 250	Air Compressor	1000	1361	1	Diesel - Tier 3	75	0.48
LRI-Bethany-11	CFM Compressor Diesel 250	Air Compressor	22880	1361	17	Diesel - Tier 3	75	0.48
LRI-Bethany-11	CFM Compressor Diesel CAT	Air Compressor	576	1361	0	Diesel - Tier 3	75	0.48
LRI-Bethany-11	Forklift 5,500 LB	Aerial Lifts	2468	1361	2	Diesel	63	0.31
LRI-Bethany-11	CAT Forklift 5,500 LB	Aerial Lifts	9872	1361	7	Diesel	63	0.31
LRI-Bethany-11	Hydraulic 9 Ton Crane	Crane	2468	1361	2	Diesel	85	0.29
LRI-Bethany-11	Hydraulic 9 Ton Crane	Crane	9872	1361	7	Diesel	85	0.29
LRI-Bethany-11	Hydraulic 40 Ton Crane	Crane	2468	1361	2	Diesel	300	0.29
LRI-Bethany-11	Hydraulic 40 Ton Crane	Crane	9872	1361	7	Diesel	300	0.29
LRI-Bethany-11	Manitowoc 777 200 Ton Crane	Crane	31516	1361	23	Diesel	760	0.29
LRI-Bethany-11	CAT 980 Loader 7.5 CY	Rubber Tired Loaders	10888	1361	8	Diesel	393	0.36
LRI-Bethany-11	Grout Mixer	Cement & Mortar Mix	1151	1361	1	Diesel	70	0.56
LRI-Bethany-11	Grout Pump	Cement & Mortar Mix	1151	1361	1	Diesel	500	0.56
LRI-Bethany-11	Highway 40,000 LB Truck	Off-Highway Truck	12513	1361	9	Diesel	350	0.38
LRI-Bethany-12	CAT Forklift 5,500 LB	Aerial Lifts	50	60	1	Diesel	63	0.31
LRI-Bethany-12	Hydraulic 9 Ton Crane	Crane	50	60	1	Diesel	85	0.29
LRI-Bethany-12	Hydraulic 25 Ton Crane	Crane	100	60	2	Diesel	100	0.29
LRI-Bethany-12	1600 CFM Compressor Diesel	Air Compressor	100	60	2	Diesel - Tier 4	540	0.48
LRI-Bethany-12	Hydraulic 40 Ton Crane	Crane	50	60	1	Diesel	300	0.29
LRI-Bethany-12	Telescope RT Forklift 5500	Forklifts	100	60	2	Diesel	63	0.2
LRI-Bethany-12	Telescope RT Forklift 5500	Forklifts	150	60	3	Diesel	63	0.2
LRI-Bethany-12	Telescope RT Forklift 5500	Forklifts	460	60	8	Diesel	63	0.2
LRI-Bethany-12	Truck Crane Lattice Boom 90T	Crane	100	60	2	Diesel - Tier 4	300	0.29
LRI-Bethany-13	Hydraulic 25 Ton Crane	Crane	100	61	2	Diesel	100	0.29
LRI-Bethany-13	1600 CFM Compressor Diesel	Air Compressor	100	61	2	Diesel - Tier 4	540	0.48
LRI-Bethany-13	CAT Hyd Excavator 1CY	Excavator	181	61	3	Diesel	138	0.38
LRI-Bethany-13	Hydraulic 55 Ton Crane	Crane	400	61	7	Diesel	350	0.29
LRI-Bethany-13	Manitowoc 777 200 Ton Crane	Crane	181	61	3	Diesel	760	0.29
LRI-Bethany-13	CAT 966 Loader 5.5 CY	Rubber Tired Loaders	181	61	3	Diesel or Hybrid	170	0.36
LRI-Bethany-13	CAT 980 Loader 7.5 CY	Rubber Tired Loaders	181	61	3	Diesel	393	0.36
LRI-Bethany-13	Telescope RT Forklift 5500	Forklifts	100	61	2	Diesel	63	0.2
LRI-Bethany-13	Telescope RT Forklift 5500	Forklifts	150	61	2	Diesel	63	0.2
LRI-Bethany-13	Telescope RT Forklift 5500	Forklifts	400	61	7	Diesel	63	0.2
LRI-Bethany-13	Truck Crane Lattice Boom 90T	Crane	100	61	2	Diesel - Tier 4	300	0.29
LRI-Bethany-14	CAT 12 M	Grader	40	134	0	Diesel	173	0.41
LRI-Bethany-14	CAT 14 M	Grader	20	134	0	Diesel	274	0.41
LRI-Bethany-14	CAT 390 MASS EXC	Excavator	330	134	2	Diesel	534	0.38
LRI-Bethany-14	Cat 613 C Self Loading Scraper	Scaper	40	134	0	Diesel	187	0.48
LRI-Bethany-14	CAT 966 Gil Wheel Loader	Rubber Tired Loaders	10	134	0	Diesel	170	0.36
LRI-Bethany-14	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	20	134	0	Diesel	156	0.38
LRI-Bethany-14	CAT D6 LGPDozer w winch	Crawler Tractor	20	134	0	Diesel or Hybrid	179	0.43
LRI-Bethany-14	CAT D8Ril, Dozer w winch	Crawler Tractor	760	134	6	Diesel	310	0.43
LRI-Bethany-14	CAT D9R, Dozer w ripper	Crawler Tractor	50	134	0	Diesel	410	0.43
LRI-Bethany-14	Farm Tractor, All Wheel Drive, 80 HP	Off-Highway Tractor	10	134	0	Diesel	80	0.44
LRI-Bethany-14	Hydro Mulcher, 18 HP	Pumps	110	134	1	Diesel	25	0.74
LRI-Bethany-14	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	990	134	7	Diesel	345	0.38
LRI-Bethany-14	Water Pump, 4" Diesel	Pumps	20	134	0	Diesel	10	0.74
LRI-Bethany-14	CAT 631G Scraper, Conventional	Scaper	760	134	6	Diesel	515	0.48
LRI-Bethany-14	Farm Tractor, All Wheel Drive, 285 HP	Off-Highway Tractor	10	134	0	Diesel	285	0.44
LRI-Bethany-14	Farm Tractor, All Wheel Drive, 285 HP	Off-Highway Tractor	13	134	0	Diesel	285	0.44
LRI-Bethany-14	Farm Tractor, All Wheel Drive, 285 HP	Off-Highway Tractor	110	134	1	Diesel	285	0.44

**Offroad Equipment (Electric) Inventory for Lower Roberts Island Shaft  
Option B2**

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
LRI-Bethany-02	Water Pump 4" Electric	3547	492	1	7
LRI-Bethany-04	Gantry Crane	120	470	0	0
LRI-Bethany-07	Water Pump 4" Electric	3547	219	1	16
LRI-Bethany-08	Gantry Crane	1150	111	0	3
LRI-Bethany-08	Axial Fan 114,000 CFM	650	111	50	293
LRI-Bethany-09	Gantry Crane	1150	233	0	1
LRI-Bethany-09	Axial Fan 114,000 CFM	1550	233	50	333
LRI-Bethany-10	Gantry Crane	67409	1838	0	9
LRI-Bethany-10	Axial Fan 114,000 CFM	367906	1838	50	10008
LRI-Bethany-11	Axial Fan 114,000 CFM	212808	1361	50	7818
LRI-Bethany-12	Gantry Crane	1070	60	0	4
LRI-Bethany-13	Gantry Crane	550	61	0	2

Vehicle Inventory for Lower Roberts Island Shaft  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
LRI-Bethany-01	Water Truck 4000 gal	Water from Lodi	2770	0	0	0	0	Lower Roberts Island Shaft from Lodi	11	22	Diesel	
LRI-Bethany-02	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	492	1	1	2	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-02	40 Ton Tractor & Trailer	General Materials from Stockton	492	1	1	1	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-02	40 Ton Tractor & Trailer	Rebar from Livermore	492	19	2	12	0	Lower Roberts Island Shaft from Livermore	48	96	Diesel	
LRI-Bethany-02	Concrete Transit Mix Truck 12cy	Concrete from Stockton	492	624	1	986	2	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-02	Pickup, 1/2T	General Materials from Stockton	492	7	1	11	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	262	72	1	113	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-03	20 Ton Flatbed Truck/End Dump	Fill From Jobsite from Lower Roberts Island	262	472	0	14150	54	Lower Roberts Island Shaft from Lower Roberts Island	1	2	Diesel	
LRI-Bethany-03	40 Ton Tractor & Trailer	General Materials from Stockton	262	1	1	1	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-03	40 Ton Tractor & Trailer	Rebar from Livermore	262	13	2	8	0	Lower Roberts Island Shaft from Livermore	48	96	Diesel	
LRI-Bethany-03	Concrete Transit Mix Truck 12cy	Concrete from Stockton	262	377	1	595	2	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	470	77	1	122	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-04	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	470	476	1	340	1	Lower Roberts Island Shaft from Sacramento	42	84	Diesel	
LRI-Bethany-04	40 Ton Tractor & Trailer	General Materials from Stockton	470	8	1	12	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-04	40 Ton Tractor & Trailer	Rebar from Livermore	470	262	2	164	0	Lower Roberts Island Shaft from Livermore	48	96	Diesel	
LRI-Bethany-04	Concrete Transit Mix Truck 12cy	Concrete from Stockton	470	4335	1	6844	15	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	40	1	1	1	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	219	1	1	1	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-07	40 Ton Tractor & Trailer	General Materials from Stockton	219	1	1	1	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-07	40 Ton Tractor & Trailer	Rebar from Livermore	219	19	2	12	0	Lower Roberts Island Shaft from Livermore	48	96	Diesel	
LRI-Bethany-07	Concrete Transit Mix Truck 12cy	Concrete from Stockton	219	624	1	986	5	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-07	Pickup, 1/2T	General Materials from Stockton	219	7	1	11	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	111	4	1	7	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-08	20 Ton Flatbed Truck/End Dump	Pre-Cast Segment Grout from Stockton	111	77	1	122	1	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	111	18	1	28	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-08	40 Ton Tractor & Trailer	Pre Cast Segment 36" ID x 6' Wide From Stockton	111	0	1	0	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-09	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	233	15	1	24	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-09	20 Ton Flatbed Truck/End Dump	Pre-Cast Segment Grout from Stockton	233	77	1	122	1	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-09	40 Ton Tractor & Trailer	General Materials from Stockton	233	18	1	28	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-09	40 Ton Tractor & Trailer	Pre Cast Segment 36" ID x 6' Wide From Stockton	233	0	1	0	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1838	273	1	431	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1838	2	0	5	0	Lower Roberts Island Shaft from Stockton	13	26	Diesel	
LRI-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1838	3	1	5	0	Lower Roberts Island Shaft from Stockton	18	36	Diesel	
LRI-Bethany-10	20 Ton Flatbed Truck/End Dump	Pre-Cast Segment Grout from Stockton	1838	12999	1	20525	11	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-10	40 Ton Tractor & Trailer	General Materials from Stockton	1838	2704	1	4269	2	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-10	40 Ton Tractor & Trailer	Pre Cast Segment 36" ID x 6' Wide From Stockton	1838	0	1	0	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-11	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1361	170	1	269	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-11	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1361	2	0	5	0	Lower Roberts Island Shaft from Stockton	13	26	Diesel	
LRI-Bethany-11	20 Ton Flatbed Truck/End Dump	Pre-Cast Segment Grout from Stockton	1361	8366	1	13210	10	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-11	40 Ton Tractor & Trailer	General Materials from Stockton	1361	1740	1	2747	2	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-11	40 Ton Tractor & Trailer	Pre Cast Segment 36" ID x 6' Wide From Stockton	1361	0	1	0	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-12	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	60	3	1	5	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-12	40 Ton Tractor & Trailer	General Materials from Stockton	60	13	1	20	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-13	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	61	3	1	5	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	134	38	1	60	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
LRI-Bethany-14	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	134	25	1	27	0	Lower Roberts Island Shaft from Vernalis	28	56	Diesel	
LRI-Bethany-14	Pickup, 1/2T	General Materials from Stockton	134	7	1	11	0	Lower Roberts Island Shaft from Stockton	19	38	Diesel	
no access roads at park and ride lots) --- on the Construction Site										Miles On Site		
LRI-Bethany-02	Highway Flatbed 10 Ton	Off-Highway Truck	492	400	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	2000	Diesel	
LRI-Bethany-02	CAT 730 Rear Dump	Dumpers	492	2824	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	14120	Diesel or Hybrid	
LRI-Bethany-04	Highway Flatbed 10 Ton	Off-Highway Truck	470	32	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	160	Diesel	
LRI-Bethany-04	CAT 730 Rear Dump	Dumpers	470	1468	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	7342	Diesel or Hybrid	
LRI-Bethany-04	Trucking Off Highway CAT 730	Dumpers	470	6880	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	34398	Diesel or Hybrid	
LRI-Bethany-06	Highway Flatbed 10 Ton	Off-Highway Truck	40	400	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	2000	Diesel	
LRI-Bethany-10	Highway Flatbed 10 Ton	Off-Highway Truck	1838	18880	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	94400	Diesel	
LRI-Bethany-11	Highway Flatbed 10 Ton	Off-Highway Truck	1361	12340	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	61700	Diesel	
LRI-Bethany-12	Highway Flatbed 10 Ton	Off-Highway Truck	60	50	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	250	Diesel	
LRI-Bethany-13	CAT 730 Rear Dump	Dumpers	61	724	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	3620	Diesel or Hybrid	
LRI-Bethany-14	CAT 740 40T, Articulated End dump	Dumpers	134	330	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	1650	Diesel or Hybrid	
LRI-Bethany-14	Truck, End Dump, 10-13cy, Hwy	Dumpers	134	2640	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	13200	Diesel	
LRI-Bethany-14	Cat 6 mgal w/ CAT 725 Tractor, 320hp	Dumpers	134	417	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	2083	Diesel or Hybrid	



**Employees Required for Lower Roberts Island Shaft  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
LRI-Bethany-01	Accountant	123	10	Stockton to LRI	19
LRI-Bethany-01	Concrete Superintendent	62	10	Stockton to LRI	19
LRI-Bethany-01	Cost Engineer	123	10	Stockton to LRI	19
LRI-Bethany-01	Electrical Superintendent	123	10	Stockton to LRI	19
LRI-Bethany-01	EMT	123	10	Stockton to LRI	19
LRI-Bethany-01	Environmental Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	Equipment Superintendent	123	10	Stockton to LRI	19
LRI-Bethany-01	Field Engineer	92	10	Stockton to LRI	19
LRI-Bethany-01	General Superintendent	123	10	Stockton to LRI	19
LRI-Bethany-01	Geotechnical Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	Office Administrator	123	10	Stockton to LRI	19
LRI-Bethany-01	Office Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	Payroll Clerk	123	10	Stockton to LRI	19
LRI-Bethany-01	Project Engineer	123	10	Stockton to LRI	19
LRI-Bethany-01	Project Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	Purchasing Agent	123	10	Stockton to LRI	19
LRI-Bethany-01	QC Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	QC Technician	62	10	Stockton to LRI	19
LRI-Bethany-01	Runner	123	10	Stockton to LRI	19
LRI-Bethany-01	Safety Engineer	246	10	Stockton to LRI	19
LRI-Bethany-01	Safety Manager	123	10	Stockton to LRI	19
LRI-Bethany-01	Schedule Engineer	62	10	Stockton to LRI	19
LRI-Bethany-01	Shift Engineers	246	10	Stockton to LRI	19
LRI-Bethany-01	Survey Party Chief	123	10	Stockton to LRI	19
LRI-Bethany-01	Survey Rod Man	123	10	Stockton to LRI	19
LRI-Bethany-01	Tunnel Superintendent	123	10	Stockton to LRI	19
LRI-Bethany-01	Tunnel Walkers	246	10	Stockton to LRI	19
LRI-Bethany-01 Total					
LRI-Bethany-02	Laborer G2 General	10641	10	Stockton to LRI	19
LRI-Bethany-02	Carpenter Foreman	179	10	Stockton to LRI	38
LRI-Bethany-02	Carpenter	1180	10	Stockton to LRI	38
LRI-Bethany-02	Dozer Operator	1218	10	Stockton to LRI	38
LRI-Bethany-02	Excavator Operator	2824	10	Stockton to LRI	19
LRI-Bethany-02	Flat Truck Driver	400	10	Stockton to LRI	19
LRI-Bethany-02	General Foreman	3534	10	Stockton to LRI	57
LRI-Bethany-02	General Laborer	3898	10	Stockton to LRI	95
LRI-Bethany-02	Grader Operator	1218	10	Stockton to LRI	38
LRI-Bethany-02	Hyd Crane Operator	1175	10	Stockton to LRI	57
LRI-Bethany-02	Iron Worker	3120	10	Stockton to LRI	19
LRI-Bethany-02	Iron Worker Foreman	312	10	Stockton to LRI	19
LRI-Bethany-02	Mechanic / Welder	400	10	Stockton to LRI	19
LRI-Bethany-02	Scraper Operator	2032	10	Stockton to LRI	19
LRI-Bethany-02	Truck Driver	464	10	Stockton to LRI	19
LRI-Bethany-02	Bullgang Foreman	400	10	Stockton to LRI	19
LRI-Bethany-02	Bullgang Laborer	800	10	Stockton to LRI	19
LRI-Bethany-02	Loader Operator	3026	10	Stockton to LRI	38
LRI-Bethany-02	Operator G2 Plant Operator	7094	10	Stockton to LRI	19
LRI-Bethany-02	Operator G4 Grade Check	4055	10	Stockton to LRI	38
LRI-Bethany-02	Articulated Rear Dump 22 CY	2824	10	Stockton to LRI	19
LRI-Bethany-02	Compactor Operator	404	10	Stockton to LRI	19
LRI-Bethany-02	Flagger	404	10	Stockton to LRI	19
LRI-Bethany-02	Grade Setter / Checker	202	10	Stockton to LRI	19
LRI-Bethany-02	Operating Engineer	3547	10	Stockton to LRI	19
LRI-Bethany-02	Operator G3 BH-1 Loader	3547	10	Stockton to LRI	19
LRI-Bethany-02	Operator G3a Cranes 45 Ton	3547	10	Stockton to LRI	19
LRI-Bethany-02	Operator G4 Heavy Duty Mechanic	3547	10	Stockton to LRI	19
LRI-Bethany-02	Teamster G1 Hwy	3547	10	Stockton to LRI	19
LRI-Bethany-02	Teamster G2 Hwy	3547	10	Stockton to LRI	19
LRI-Bethany-02	Water Tanker Off road	202	10	Stockton to LRI	19
LRI-Bethany-02 Total					
LRI-Bethany-03	Carpenter Foreman	108	10	Stockton to LRI	38
LRI-Bethany-03	Carpenter	712	10	Stockton to LRI	38
LRI-Bethany-03	Dozer Operator	9767	10	Stockton to LRI	38
LRI-Bethany-03	General Foreman	120	10	Stockton to LRI	19
LRI-Bethany-03	General Laborer	645	10	Stockton to LRI	76
LRI-Bethany-03	Grader Operator	9767	10	Stockton to LRI	38
LRI-Bethany-03	Hyd Crane Operator	227	10	Stockton to LRI	38

LRI-Bethany-03	Iron Worker	1885	10	Stockton to LRI	19
LRI-Bethany-03	Iron Worker Foreman	189	10	Stockton to LRI	19
LRI-Bethany-03	Truck Driver	9927	10	Stockton to LRI	38
LRI-Bethany-03	Loader Operator	120	10	Stockton to LRI	19
LRI-Bethany-03	Compactor Operator	240	10	Stockton to LRI	19
LRI-Bethany-03	Compactor Operator	9647	10	Stockton to LRI	19
LRI-Bethany-03	Flagger	240	10	Stockton to LRI	19
LRI-Bethany-03	Grade Setter / Checker	9767	10	Stockton to LRI	38
LRI-Bethany-03	Water Tanker Off road	120	10	Stockton to LRI	19
LRI-Bethany-03	Water Truck Highway	9647	10	Stockton to LRI	19
LRI-Bethany-03 Total					
LRI-Bethany-04	Carpenter Foreman	384	10	Stockton to LRI	190
LRI-Bethany-04	Carpenter	1538	10	Stockton to LRI	190
LRI-Bethany-04	Concrete Pump Operator	650	10	Stockton to LRI	76
LRI-Bethany-04	Crane Oiler	5789	10	Stockton to LRI	475
LRI-Bethany-04	Electrician	539	10	Stockton to LRI	95
LRI-Bethany-04	Excavator Operator	811	10	Stockton to LRI	114
LRI-Bethany-04	Flat Truck Driver	32	10	Stockton to LRI	38
LRI-Bethany-04	General Foreman	2792	10	Stockton to LRI	114
LRI-Bethany-04	General Laborer	13610	10	Stockton to LRI	266
LRI-Bethany-04	Hyd Crane Operator	2853	10	Stockton to LRI	228
LRI-Bethany-04	Iron Worker	20953	10	Stockton to LRI	266
LRI-Bethany-04	Iron Worker Foreman	3399	10	Stockton to LRI	266
LRI-Bethany-04	Lead Miner	2995	10	Stockton to LRI	456
LRI-Bethany-04	Mechanic / Welder	1512	10	Stockton to LRI	133
LRI-Bethany-04	Miner	26319	10	Stockton to LRI	589
LRI-Bethany-04	Shifter	5795	10	Stockton to LRI	646
LRI-Bethany-04	Hydraulic Excavator to 3.5	760	10	Stockton to LRI	38
LRI-Bethany-04	Truck Driver	1464	10	Stockton to LRI	76
LRI-Bethany-04	Bottomlander	2190	10	Stockton to LRI	285
LRI-Bethany-04	Bullgang Foreman	32	10	Stockton to LRI	38
LRI-Bethany-04	Bullgang Laborer	64	10	Stockton to LRI	38
LRI-Bethany-04	Hyd Track Drill	760	10	Stockton to LRI	38
LRI-Bethany-04	Loader Operator	1795	10	Stockton to LRI	114
LRI-Bethany-04	Mechanic Welder	1923	10	Stockton to LRI	228
LRI-Bethany-04	Shaft Crane Operator	6359	10	Stockton to LRI	551.0
LRI-Bethany-04	Toplander	4967	10	Stockton to LRI	513
LRI-Bethany-04	Articulated Rear Dump 22 CY	1016	10	Stockton to LRI	38
LRI-Bethany-04	Master Mechanic	120	10	Stockton to LRI	19
LRI-Bethany-04 Total					
LRI-Bethany-05	Accountant	92	10	Stockton to LRI	19
LRI-Bethany-05	Concrete Superintendent	46	10	Stockton to LRI	19
LRI-Bethany-05	Cost Engineer	92	10	Stockton to LRI	19
LRI-Bethany-05	Electrical Superintendent	92	10	Stockton to LRI	19
LRI-Bethany-05	EMT	92	10	Stockton to LRI	19
LRI-Bethany-05	Environmental Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	Equipment Superintendent	92	10	Stockton to LRI	19
LRI-Bethany-05	Field Engineer	69	10	Stockton to LRI	19
LRI-Bethany-05	General Superintendent	92	10	Stockton to LRI	19
LRI-Bethany-05	Geotechnical Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	Office Administrator	92	10	Stockton to LRI	19
LRI-Bethany-05	Office Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	Payroll Clerk	92	10	Stockton to LRI	19
LRI-Bethany-05	Project Engineer	92	10	Stockton to LRI	19
LRI-Bethany-05	Project Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	Purchasing Agent	92	10	Stockton to LRI	19
LRI-Bethany-05	QC Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	QC Technician	46	10	Stockton to LRI	19
LRI-Bethany-05	Runner	92	10	Stockton to LRI	19
LRI-Bethany-05	Safety Engineer	184	10	Stockton to LRI	19
LRI-Bethany-05	Safety Manager	92	10	Stockton to LRI	19
LRI-Bethany-05	Schedule Engineer	46	10	Stockton to LRI	19
LRI-Bethany-05	Shift Engineers	184	10	Stockton to LRI	19
LRI-Bethany-05	Survey Party Chief	92	10	Stockton to LRI	19
LRI-Bethany-05	Survey Rod Man	92	10	Stockton to LRI	19
LRI-Bethany-05	Tunnel Superintendent	92	10	Stockton to LRI	19
LRI-Bethany-05	Tunnel Walkers	184	10	Stockton to LRI	19
LRI-Bethany-05 Total					
LRI-Bethany-06	Flat Truck Driver	400	10	Stockton to LRI	19
LRI-Bethany-06	Hyd Crane Operator	800	10	Stockton to LRI	19
LRI-Bethany-06	Mechanic / Welder	400	10	Stockton to LRI	19
LRI-Bethany-06	Bullgang Foreman	400	10	Stockton to LRI	19

LRI-Bethany-06	Bullgang Laborer	800	10	Stockton to LRI	19
LRI-Bethany-06 Total					
LRI-Bethany-07	Laborer G2 General	10641	10	Stockton to LRI	19
LRI-Bethany-07	Carpenter Foreman	179	10	Stockton to LRI	38
LRI-Bethany-07	Carpenter	1180	10	Stockton to LRI	38
LRI-Bethany-07	Dozer Operator	202	10	Stockton to LRI	19
LRI-Bethany-07	General Foreman	202	10	Stockton to LRI	19
LRI-Bethany-07	General Laborer	1074	10	Stockton to LRI	76
LRI-Bethany-07	Grader Operator	202	10	Stockton to LRI	19
LRI-Bethany-07	Hyd Crane Operator	375	10	Stockton to LRI	38
LRI-Bethany-07	Iron Worker	3120	10	Stockton to LRI	19
LRI-Bethany-07	Iron Worker Foreman	312	10	Stockton to LRI	19
LRI-Bethany-07	Truck Driver	464	10	Stockton to LRI	19
LRI-Bethany-07	Loader Operator	202	10	Stockton to LRI	19
LRI-Bethany-07	Operator G2 Plant Operator	7094	10	Stockton to LRI	19
LRI-Bethany-07	Operator G4 Grade Check	3547	10	Stockton to LRI	19
LRI-Bethany-07	Compactor Operator	404	10	Stockton to LRI	19
LRI-Bethany-07	Flagger	404	10	Stockton to LRI	19
LRI-Bethany-07	Grade Setter / Checker	202	10	Stockton to LRI	19
LRI-Bethany-07	Operating Engineer	3547	10	Stockton to LRI	19
LRI-Bethany-07	Operator G3 BH-1 Loader	3547	10	Stockton to LRI	19
LRI-Bethany-07	Operator G3a Cranes 45 Ton	3547	10	Stockton to LRI	19
LRI-Bethany-07	Operator G4 Heavy Duty Mechanic	3547	10	Stockton to LRI	19
LRI-Bethany-07	Teamster G1 Hwy	3547	10	Stockton to LRI	19
LRI-Bethany-07	Teamster G2 Hwy	3547	10	Stockton to LRI	19
LRI-Bethany-07	Water Tanker Off road	202	10	Stockton to LRI	19
LRI-Bethany-07 Total					
LRI-Bethany-08	Crane Oiler	1710	10	Stockton to LRI	114
LRI-Bethany-08	Electrician	2810	10	Stockton to LRI	114
LRI-Bethany-08	Hyd Crane Operator	1060	10	Stockton to LRI	57
LRI-Bethany-08	Lead Miner	1550	10	Stockton to LRI	95
LRI-Bethany-08	Mechanic / Welder	2810	10	Stockton to LRI	114
LRI-Bethany-08	Miner	11100	10	Stockton to LRI	95
LRI-Bethany-08	Shifter	1550	10	Stockton to LRI	95
LRI-Bethany-08	Bottomlander	1550	10	Stockton to LRI	95
LRI-Bethany-08	Bullgang Foreman	160	10	Stockton to LRI	19
LRI-Bethany-08	Bullgang Laborer	960	10	Stockton to LRI	19
LRI-Bethany-08	Shaft Crane Operator	1710	10	Stockton to LRI	114
LRI-Bethany-08	Toplander	1550	10	Stockton to LRI	95
LRI-Bethany-08	Heavy Duty Mechanic Welder	160	10	Stockton to LRI	19
LRI-Bethany-08	Master Mechanic	480	10	Stockton to LRI	19
LRI-Bethany-08	Segment Carrier Operator	400	10	Stockton to LRI	19
LRI-Bethany-08	ST2G Mucker Operator	400	10	Stockton to LRI	19
LRI-Bethany-08	TBM Operator	800	10	Stockton to LRI	19
LRI-Bethany-08 Total					
LRI-Bethany-09	Crane Oiler	1310	10	Stockton to LRI	95
LRI-Bethany-09	Electrician	2810	10	Stockton to LRI	114
LRI-Bethany-09	Hyd Crane Operator	1060	10	Stockton to LRI	57
LRI-Bethany-09	Lead Miner	1550	10	Stockton to LRI	95
LRI-Bethany-09	Mechanic / Welder	2810	10	Stockton to LRI	114
LRI-Bethany-09	Miner	11100	10	Stockton to LRI	95
LRI-Bethany-09	Shifter	1550	10	Stockton to LRI	95
LRI-Bethany-09	Bottomlander	1150	10	Stockton to LRI	76
LRI-Bethany-09	Bullgang Foreman	160	10	Stockton to LRI	19
LRI-Bethany-09	Bullgang Laborer	960	10	Stockton to LRI	19
LRI-Bethany-09	Shaft Crane Operator	1310	10.0	Stockton to LRI	95
LRI-Bethany-09	Toplander	1150	10.0	Stockton to LRI	76
LRI-Bethany-09	Heavy Duty Mechanic Welder	160	10.0	Stockton to LRI	19
LRI-Bethany-09	Master Mechanic	480	10.0	Stockton to LRI	19
LRI-Bethany-09	Segment Carrier Operator	400	10.0	Stockton to LRI	19
LRI-Bethany-09	ST2G Mucker Operator	400	10.0	Stockton to LRI	19
LRI-Bethany-09	TBM Operator	800	10.0	Stockton to LRI	19
LRI-Bethany-09 Total					
LRI-Bethany-10	Crane Oiler	67409	20.0	Stockton to LRI	38
LRI-Bethany-10	Electrician	82625	20.0	Stockton to LRI	107
LRI-Bethany-10	Flat Truck Driver	18880	20.0	Stockton to LRI	38
LRI-Bethany-10	Hyd Crane Operator	37760	20.0	Stockton to LRI	38
LRI-Bethany-10	Lead Miner	45025	20.0	Stockton to LRI	88
LRI-Bethany-10	Mechanic / Welder	120305	20.0	Stockton to LRI	145
LRI-Bethany-10	Miner	337319	20	Stockton to LRI	126
LRI-Bethany-10	Shifter	45025	20	Stockton to LRI	88
LRI-Bethany-10	Truck Driver	15522	20	Stockton to LRI	19

LRI-Bethany-10	Bottomlander	67409	20	Stockton to LRI	38
LRI-Bethany-10	Bullgang Foreman	57531	20	Stockton to LRI	76
LRI-Bethany-10	Bullgang Laborer	192364	20	Stockton to LRI	76
LRI-Bethany-10	Shaft Crane Operator	67409	20	Stockton to LRI	38
LRI-Bethany-10	Toplander	67409	20	Stockton to LRI	38
LRI-Bethany-10	Conveyor Belt Man	45025	20	Stockton to LRI	88
LRI-Bethany-10	Fanline Carrier Operator	37760	20	Stockton to LRI	19
LRI-Bethany-10	Man Transport Truck Operator	38651	20	Stockton to LRI	38
LRI-Bethany-10	Master Mechanic	18800	20	Stockton to LRI	19
LRI-Bethany-10	Segment Carrier Operator	296885	20	Stockton to LRI	57
LRI-Bethany-10	TBM Operator	90050	20	Stockton to LRI	88
LRI-Bethany-10	Utility Truck Operator	38651	20	Stockton to LRI	38
LRI-Bethany-10 Total					
LRI-Bethany-11	Crane Oiler	43888	20	Stockton to LRI	38
LRI-Bethany-11	Electrician	53527	20	Stockton to LRI	89
LRI-Bethany-11	Flat Truck Driver	12340	20	Stockton to LRI	38
LRI-Bethany-11	General Laborer	60700	20	Stockton to LRI	19
LRI-Bethany-11	Hyd Crane Operator	24680	20	Stockton to LRI	38
LRI-Bethany-11	Lead Miner	28782	20	Stockton to LRI	70
LRI-Bethany-11	Mechanic / Welder	78239	20	Stockton to LRI	127
LRI-Bethany-11	Miner	215741	20	Stockton to LRI	108
LRI-Bethany-11	Shifter	28782	20	Stockton to LRI	70
LRI-Bethany-11	Truck Driver	12513	20	Stockton to LRI	19
LRI-Bethany-11	Bottomlander	43888	20	Stockton to LRI	38
LRI-Bethany-11	Bullgang Foreman	37596	20	Stockton to LRI	76
LRI-Bethany-11	Bullgang Laborer	125702	20	Stockton to LRI	76
LRI-Bethany-11	Loader Operator	60700	20	Stockton to LRI	19
LRI-Bethany-11	Shaft Crane Operator	43888	20	Stockton to LRI	38
LRI-Bethany-11	Toplander	43888	20	Stockton to LRI	38
LRI-Bethany-11	Conveyor Belt Man	28782	20	Stockton to LRI	70
LRI-Bethany-11	Fanline Carrier Operator	24680	20	Stockton to LRI	19
LRI-Bethany-11	Man Transport Truck Operator	25256	20	Stockton to LRI	38
LRI-Bethany-11	Master Mechanic	12372	20	Stockton to LRI	19
LRI-Bethany-11	Segment Carrier Operator	169360	20	Stockton to LRI	57
LRI-Bethany-11	TBM Operator	57564	20	Stockton to LRI	70
LRI-Bethany-11	Utility Truck Operator	25256	20	Stockton to LRI	38
LRI-Bethany-11 Total					
LRI-Bethany-12	Crane Oiler	100	10	Stockton to LRI	19
LRI-Bethany-12	Electrician	1170	10	Stockton to LRI	76
LRI-Bethany-12	Flat Truck Driver	50	10	Stockton to LRI	19
LRI-Bethany-12	Hyd Crane Operator	200	10	Stockton to LRI	38
LRI-Bethany-12	Lead Miner	1070	10	Stockton to LRI	57
LRI-Bethany-12	Mechanic / Welder	1220	10	Stockton to LRI	95
LRI-Bethany-12	Miner	6120	10	Stockton to LRI	57
LRI-Bethany-12	Shifter	1070	10	Stockton to LRI	57
LRI-Bethany-12	Bottomlander	1070	10	Stockton to LRI	57
LRI-Bethany-12	Bullgang Foreman	150	10	Stockton to LRI	38
LRI-Bethany-12	Bullgang Laborer	700	10	Stockton to LRI	38
LRI-Bethany-12	Shaft Crane Operator	1170	10	Stockton to LRI	76
LRI-Bethany-12	Toplander	1070	10	Stockton to LRI	57
LRI-Bethany-12	Forklift Operator	1070	10	Stockton to LRI	57
LRI-Bethany-12	Heavy Duty Mechanic Welder	100	10	Stockton to LRI	19
LRI-Bethany-12	Master Mechanic	300	10	Stockton to LRI	19
LRI-Bethany-12	Utility Truck Operator	920	10	Stockton to LRI	38
LRI-Bethany-12 Total					
LRI-Bethany-13	Crane Oiler	281	10	Stockton to LRI	38
LRI-Bethany-13	Electrician	1050	10	Stockton to LRI	76
LRI-Bethany-13	Excavator Operator	181	10	Stockton to LRI	19
LRI-Bethany-13	Hyd Crane Operator	100	10	Stockton to LRI	19
LRI-Bethany-13	Lead Miner	950	10	Stockton to LRI	57
LRI-Bethany-13	Mechanic / Welder	1050	10	Stockton to LRI	76
LRI-Bethany-13	Miner	5400	10	Stockton to LRI	57
LRI-Bethany-13	Shifter	950	10	Stockton to LRI	57
LRI-Bethany-13	Truck Driver	724	10	Stockton to LRI	19
LRI-Bethany-13	Bottomlander	1131	10	Stockton to LRI	76
LRI-Bethany-13	Bullgang Foreman	100	10	Stockton to LRI	19
LRI-Bethany-13	Bullgang Laborer	600	10	Stockton to LRI	19
LRI-Bethany-13	Loader Operator	181	10	Stockton to LRI	19
LRI-Bethany-13	Shaft Crane Operator	1231	10	Stockton to LRI	95
LRI-Bethany-13	Toplander	1131	10	Stockton to LRI	76
LRI-Bethany-13	Forklift Operator	950	10	Stockton to LRI	57
LRI-Bethany-13	Heavy Duty Mechanic Welder	100	10	Stockton to LRI	19

LRI-Bethany-13	Master Mechanic	300	10	Stockton to LRI	19
LRI-Bethany-13	Utility Truck Operator	800	10	Stockton to LRI	38
LRI-Bethany-13 Total					
LRI-Bethany-14	Laborer G2 General	250	10	Stockton to LRI	57
LRI-Bethany-14	Laborer G2 Concrete Laborer	990	10	Stockton to LRI	19
LRI-Bethany-14	Laborer G3 Flagman	780	10	Stockton to LRI	38
LRI-Bethany-14	OPERATING ENGINEER FOREMAN	702	10	Stockton to LRI	209
LRI-Bethany-14	Operator G2 Excavator 3.5 to 7.0 cy	1320	10	Stockton to LRI	19
LRI-Bethany-14	Operator G2 Finish Blade	60	10	Stockton to LRI	38
LRI-Bethany-14	Operator G3 Loader >4cy	340	10	Stockton to LRI	38
LRI-Bethany-14	Operator G4 Dozer & Push Cat	880	10	Stockton to LRI	76
LRI-Bethany-14	Operator G4 Grade Check	20	10	Stockton to LRI	19
LRI-Bethany-14	Operator G4 Scraper	800	10	Stockton to LRI	38
LRI-Bethany-14	Operator G6 Tractor	153	10	Stockton to LRI	95
LRI-Bethany-14	Operator G7 Roller, Compactor	20	10	Stockton to LRI	19
LRI-Bethany-14	Teamster G2 Hwy ED 6-8cy, Water<7m	3077	10	Stockton to LRI	114
LRI-Bethany-14	Teamster G4 ED 25-65 Cy	330	10	Stockton to LRI	19

## Marine Inventory for Lower Roberts Island Shaft Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

Locomotive Inventory for Lower Roberts Island Shaft  
Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
LRI-Bethany-08		111 Pre Cast Segment 36' ID x 6	Stockton	LRI	45	0.405405405	UPRR	Diesel
LRI-Bethany-10		1838 Pre Cast Segment 36' ID x 6	Stockton	LRI	134	0.072905332	UPRR	Diesel
LRI-Bethany-10		1838 Pre Cast Segment 36' ID x 6	Stockton	LRI	6743	3.668661589	UPRR	Diesel
LRI-Bethany-11		1361 Pre Cast Segment 36' ID x 6	Stockton	LRI	134	0.098457017	UPRR	Diesel
LRI-Bethany-11		1361 Pre Cast Segment 36' ID x 6	Stockton	LRI	4291	3.152828802	UPRR	Diesel
LRI-Bethany-09		233 Pre Cast Segment 36' ID x 6	Stockton	LRI	45	0.193133047	UPRR	Diesel

**Helicopter Inventory for Lower Roberts Island Shaft**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED



Earthmovi  
Option B2

[illegible]

**Demolition Assumptions for Lower Roberts Island Shaft  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

Construction Schedule for Upper Jones Tract Access Road  
Option B2

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
07 - Initial Overlay	UJA-Bethany-07	1/14/2027	1/20/2027	5	5	10

Total Site Acres

1

Offroad Equipment (Fossil Fuel) Inventory for Upper Jones Tract Access Road  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
UJA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	47	5	9	Diesel or Hybrid	224	0.42		
UJA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	47	5	9	Diesel or Hybrid	133	0.38		
UJA-Bethany-07	Asphalt Roller, 2 Drum 12tn, 137hp	Rollers	47	5	9	Diesel or Hybrid	137	0.38		
UJA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	47	5	9	Diesel	78	0.36		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Upper Jones Tract Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
NOT NEEDED					

Vehicle Inventory for Upper Jones Tract Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
UJA-Bethany-07	20 Ton Flatbed Truck/End Dump	asphalt, Hot Mix Delivered from Verna	5	174	0.7	248	50	Upper Jones Access from Vernalis	21	42	Diesel	
UJA-Bethany-07	Pickup, 1/2T	General Materials from Stockton	5	0	0.4	1	0	Upper Jones Access from Stockton	13	26	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		

Employees Required for Upper Jones Tract Access Road  
Option B2

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
UJA-Bethany-07	Laborer G2 General	188	10	Stockton to UJA	13
UJA-Bethany-07	OPERATING ENGINEER FOREMAN	47	10	Stockton to UJA	13
UJA-Bethany-07	Operator G3 BH-Loader>3/4cy	47	10	Stockton to UJA	13
UJA-Bethany-07	Operator G4 Grade Check	47	10	Stockton to UJA	13
UJA-Bethany-07	Operator G5 Asphalt Roller	94	10	Stockton to UJA	13
UJA-Bethany-07	Operator G5 Paver	47	10	Stockton to UJA	13
UJA-Bethany-07	Teamster G2 Hwy ED 6-8cy, Water<7mgal	23	10	Stockton to UJA	13

## Marine Inventory for Upper Jones Tract Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



## Locomotive Inventory for Upper Jones Tract Access Road Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Upper Jones Tract Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Upper Jones Tract Access Road  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
UJA-Bethany-07		05	0		00		00		00	200430	40086

**Demolition Assumptions for Upper Jones Tract Access Road  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Upper Jones Tract Shaft  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Shaft site facilities and operations	UJ-Bethany-01	11/8/2028	10/30/2030	516	5	10
02 - Clear and Grub	UJ-Bethany-02	11/8/2028	11/28/2028	15	5	10
03 - Ground Improvement	UJ-Bethany-03	11/29/2028	1/23/2029	40	5	10
04 - Raise Shaft Pad	UJ-Bethany-04	1/24/2029	1/22/2030	260	5	10
05 - Excavate, Set Strips, & Place Guide Wall	UJ-Bethany-05	1/23/2030	2/7/2030	12	5	10
06 - Place Guide Walls Concrete	UJ-Bethany-06	2/8/2030	2/11/2030	2	2	10
07 - Excavate Slurry Wall & Place Concrete & Rebar	UJ-Bethany-07	2/12/2030	3/21/2030	28	5	10
08 - Slurry Wall including Strip Forms and Place Rebar & Top Beam	UJ-Bethany-08	3/22/2030	5/3/2030	31	5	10
10 - Place Tremie Seal Rebar, Cooling Pipes, & Seal	UJ-Bethany-09	5/6/2030	6/26/2030	38	7	24
09 - Excavate Shaft	UJ-Bethany-10	5/6/2030	6/12/2030	28	5	10
11 - Dewater Shaft	UJ-Bethany-11	6/27/2030	7/3/2030	5	5	10
12 - Place TBM Cradle Rebar and Cradle Pour	UJ-Bethany-12	7/4/2030	7/11/2030	6	5	10
13 - Assemble & Place Buttress, Form, & Concrete for Shaft Liner	UJ-Bethany-13	7/12/2030	10/22/2030	73	5	10
14 - Breakout Slurry Wall for TBM	UJ-Bethany-14	7/12/2030	8/7/2030	19	5	10
15 - Shaft Finishing	UJ-Bethany-15	10/22/2030	10/30/2030	7	5	10

**Total Site Acres**

**12**

Offroad Equipment (Fossil Fuel) Inventory for Upper Jones Tract Shaft  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
UJ-Bethany-02	623G Scraper Elevate 21 CY	Scaper	58	15	4	Diesel	359	0.48		
UJ-Bethany-02	CAT D8 Dozer	Crawler Tractor	29	15	2	Diesel	328	0.43		
UJ-Bethany-02	Grader 16H - 16' Blade	Grader	29	15	2	Diesel	285	0.41		
UJ-Bethany-03	Air Compressor 375 CFM Diesel	Air Compressor	492	40	12	Diesel - Tier 4	122	0.48		
UJ-Bethany-03	Case 590 SupH Loader BH	Rubber Tired Loaders	492	40	12.3	Diesel	110	0.36		
UJ-Bethany-03	DMM Deep Soil Mixer	Bore Drill Rig	200	40	5	Diesel	522	0.5		
UJ-Bethany-03	DMM Grout Mix Plant	Other Construction Equipn	200	40	5	Diesel	500	0.34		
UJ-Bethany-03	Grove RT Crane 30 Ton	Crane	492	40	12	Diesel	160	0.29		
UJ-Bethany-03	Portable 90 Kw Diesel Gen	Generator	492	40	12	Diesel - Tier 4	158	0.74		
UJ-Bethany-04	CAT CB-634D Vibratory 84"	Rollers	2490	260	10	Diesel	145	0.38		
UJ-Bethany-04	CAT D8 Dozer	Crawler Tractor	2490	260	10	Diesel	328	0.43		
UJ-Bethany-04	CAT Grader 16H	Grader	2490	260	10	Diesel	285	0.41		
UJ-Bethany-04	Highway Dump Truck 18 CY	Off-Highway Truck	2490	260	10	Diesel - Tier 4	280	0.38		
UJ-Bethany-05	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	6	12	1	Diesel or Hybrid	130	0.36		
UJ-Bethany-05	CAT Hyd Excavator 1CY	Excavator	6	12	1	Diesel	138	0.38		
UJ-Bethany-07	1600 CFM Compressor Diesel	Air Compressor	211	28	8	Diesel - Tier 4	540	0.48		
UJ-Bethany-07	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	211	28	8	Diesel or Hybrid	130	0.36		
UJ-Bethany-07	Concrete Pump Truck	Off-Highway Truck	422	28	15	Diesel	300	0.38		
UJ-Bethany-07	Hydraulic 55 Ton Crane	Crane	211	28	8	Diesel	350	0.29		
UJ-Bethany-07	Hydromill	Bore Drill Rig	211	28	8	Diesel	552	0.5		
UJ-Bethany-07	Manitowoc 200 Ton Crane	Crane	211	28	8	Diesel	760	0.29		
UJ-Bethany-07	Manitowoc 777 200 Ton Crane	Crane	211	28	8	Diesel	760	0.29		
UJ-Bethany-07	Slurry Wall Mixer	Cement & Mortar Mix	211	28	8	Diesel	8	0.56		
UJ-Bethany-07	Slurry Wall Techniwell	Pumps	211	28	8	Diesel	500	0.74		
UJ-Bethany-08	250 CFM Compressor Diesel	Air Compressor	4	31	0	Diesel - Tier 3	75	0.48		
UJ-Bethany-08	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	236	31	8	Diesel or Hybrid	130	0.36		
UJ-Bethany-08	CAT Hyd Excavator 1CY	Excavator	236	31	8	Diesel	138	0.38		
UJ-Bethany-09	Concrete Pump Truck	Off-Highway Truck	76	38	2	Diesel	300	0.38		
UJ-Bethany-09	Hydraulic 25 Ton Crane	Crane	76	38	2	Diesel	100	0.29		
UJ-Bethany-09	Hydraulic 40 Ton Crane	Crane	36	38	1	Diesel	300	0.29		
UJ-Bethany-09	Manitowoc 777 200 Ton Crane	Crane	111	38	3	Diesel	760	0.29		
UJ-Bethany-10	Manitowoc 777 200 Ton Crane	Crane	231	28	8	Diesel	760	0.29		
UJ-Bethany-11	150 KW Diesel Generator	Generator	100	5	20.0	Diesel - Tier 4	183	0.74		
UJ-Bethany-11	Dewater Pump 6"	Pumps	400	5	80.0	Diesel	50	0.74		
UJ-Bethany-11	Hydraulic 15 Ton Crane	Crane	100	5	20.0	Diesel	85	0.29		
UJ-Bethany-12	250 CFM Compressor Diesel	Air Compressor	8	6	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-12	Manitowoc 777 200 Ton Crane	Crane	8	6	1	Diesel	760	0.29		
UJ-Bethany-12	Manitowoc 777 200 Ton Crane	Crane	27	6	5	Diesel	760	0.29		
UJ-Bethany-12	Trailer Conc Pump 100 CY HR	Pumps	8	6	1	Diesel	200	0.74		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	50	73	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	60	73	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	52	73	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	64	73	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	64	73	1	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	205	73	3	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	250 CFM Compressor Diesel	Air Compressor	205	73	3	Diesel - Tier 3	75	0.48		
UJ-Bethany-13	Electric Welder 400 AMP	Welder	205	73	3	Diesel	33	0.45		
UJ-Bethany-13	Hydraulic 9 Ton Crane	Crane	60	73	1	Diesel	85	0.29		
UJ-Bethany-13	Hydraulic 9 Ton Crane	Crane	205	73	3	Diesel	85	0.29		
UJ-Bethany-13	Manitowoc 777 200 Ton Crane	Crane	50	73	1	Diesel	760	0.29		
UJ-Bethany-13	Manitowoc 777 200 Ton Crane	Crane	52	73	1	Diesel	760	0.29		
UJ-Bethany-13	Manitowoc 999-275 Ton Crane	Crane	64	73	1	Diesel	900	0.29		
UJ-Bethany-13	Manitowoc 999-275 Ton Crane	Crane	64	73	1	Diesel	900	0.29		
UJ-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	52	73	1	Diesel	200	0.74		
UJ-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	64	73	1	Diesel	200	0.74		
UJ-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	205	73	3	Diesel	200	0.74		
UJ-Bethany-14	250 CFM Compressor Diesel	Air Compressor	119	19	6	Diesel - Tier 3	75	0.48		
UJ-Bethany-14	Manitowoc 777 200 Ton Crane	Crane	119	19	6	Diesel	760	0.29		
UJ-Bethany-15	CAT Forklift 5,500 LB	Aerial Lifts	50	7	7	Diesel	63	0.31		
UJ-Bethany-15	Hydraulic 40 Ton Crane	Crane	50	7	7	Diesel	300	0.29		
UJ-Bethany-15	Hydraulic 9 Ton Crane	Crane	50	7	7	Diesel	85	0.29		

Offroad Equipment (Electric) Inventory for Upper Jones Tract Shaft  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
UJ-Bethany-03	Water Pump 4" Electric	492	40	1	12
UJ-Bethany-13	Axial Fan 114,000 CFM	60	73	50	41

Vehicle Inventory for Upper Jones Tract Shaft  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# dte	Vehicle Hours	Hours/Trip	# of Vehicles Inv.	One-Way Trips/Day	Trip Location To/From	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
UJ-Bethany-03	Pickup, 1/2T	General Materials from Stockton	40	1	0	2	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	40	20	0	45	1	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-04	20 Ton Flatbed Truck/End Dump	Fill From JobSite from Lower Roberts	260	1827	1	3653	14	Upper Jones Shaft from Lower Roberts	15	30	Diesel	
UJ-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	12	1	0	2	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-05	40 Ton Tractor & Trailer	General Materials from Stockton	12	1	0	3	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	2	0	0	1	1	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-06	40 Ton Tractor & Trailer	Rebar from Livermore	2	1	1	1	1	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-06	Concrete Transit Mix Truck 13cy	Concrete from Stockton	2	10	0	23	12	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	28	3	0	6	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-07	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	28	384	2	195	7	Upper Jones Shaft from Sacramento	59	118	Diesel	
UJ-Bethany-07	40 Ton Tractor & Trailer	Rebar from Livermore	28	30	1	24	1	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-07	Concrete Transit Mix Truck 13cy	Concrete from Stockton	28	241	0	555	20	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	31	0	0	1	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	31	1	0	3	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-08	40 Ton Tractor & Trailer	Rebar from Livermore	31	1	1	1	0	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-08	Concrete Transit Mix Truck 13cy	Concrete from Stockton	31	5	0	11	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-09	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	38	2	0	5	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-09	40 Ton Tractor & Trailer	Rebar from Livermore	38	9	1	7	0	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-09	Concrete Transit Mix Truck 13cy	Concrete from Stockton	38	210	0	484	13	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-12	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	6	1	0	2	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-12	40 Ton Tractor & Trailer	Rebar from Livermore	6	1	1	1	0	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-12	Concrete Transit Mix Truck 13cy	Concrete from Stockton	6	30	0	70	12	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-13	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	73	2	0	5	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-13	Concrete Transit Mix Truck 13cy	Concrete from Stockton	73	158	0	365	5	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	19	2	0	5	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-14	40 Ton Tractor & Trailer	Rebar from Livermore	19	3	1	2	0	Upper Jones Shaft from Livermore	38	76	Diesel	
UJ-Bethany-15	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	7	0	0	1	0	Upper Jones Shaft from Stockton	13	26	Diesel	
UJ-Bethany-15	40 Ton Tractor & Trailer	General Materials from Stockton	7	9	0	20	3	Upper Jones Shaft from Stockton	13	26	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
UJ-Bethany-03	Truck Flatbed 4 Ton	Off Highway Truck	40	492	not applicable	not applicable	not applicable	in-site assume 5 miles/hou	not applicable	2460	Diesel	
UJ-Bethany-05	CAT 730 Rear Dump	Dumpers	12	18	not applicable	not applicable	not applicable	in-site assume 5 miles/hou	not applicable	92	Diesel or Hybrid	
UJ-Bethany-07	CAT 730 Rear Dump	Dumpers	28	241	not applicable	not applicable	not applicable	on-site assume 5 miles/hou	not applicable	1203	Diesel or Hybrid	
UJ-Bethany-10	Truck/ine Off Highway CAT 730	Dumpers	28	1155	not applicable	not applicable	not applicable	on-site assume 5 miles/hou	not applicable	5775	Diesel or Hybrid	
UJ-Bethany-15	Highway Flatbed 30 Ton	Off-Highway Truck	7	50	not applicable	not applicable	not applicable	on-site assume 5 miles/hou	not applicable	250	Diesel	



**Employees Required for Upper Jones Tract Shaft  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
UJ-Bethany-02	Operator G4 Grade Check	15	10	Stockton to UJ	13
UJ-Bethany-02	Dozer Operator	29	10	Stockton to UJ	13
UJ-Bethany-02	General Foreman	15	10	Stockton to UJ	13
UJ-Bethany-02	Grader Operator	29	10	Stockton to UJ	13
UJ-Bethany-02	Scraper Operator	58	10	Stockton to UJ	13
UJ-Bethany-02 Total					
UJ-Bethany-03	Laborer G2 General	1476	10	Stockton to UJ	13
UJ-Bethany-03	Operator G4 Grade Check	492	10	Stockton to UJ	13
UJ-Bethany-03	Operating Engineer	492	10	Stockton to UJ	13
UJ-Bethany-03	Operator G2 Plant Operator	984	10	Stockton to UJ	13
UJ-Bethany-03	Operator G3 BH-1 Loader	492	10	Stockton to UJ	13
UJ-Bethany-03	Operator G3a Cranes 45 Ton	492	10	Stockton to UJ	13
UJ-Bethany-03	Operator G4 Heavy Duty Mechanic	492	10	Stockton to UJ	13
UJ-Bethany-03	Teamster G1 Hwy	492	10	Stockton to UJ	13
UJ-Bethany-03	Teamster G2 Hwy	492	10	Stockton to UJ	13
UJ-Bethany-03 Total					
UJ-Bethany-04	Compactor Operator	2490	10	Stockton to UJ	13
UJ-Bethany-04	Dozer Operator	2490	10	Stockton to UJ	13
UJ-Bethany-04	Grade Setter / Checker	2490	10	Stockton to UJ	13
UJ-Bethany-04	Grader Operator	2490	10	Stockton to UJ	13
UJ-Bethany-04	Truck Driver	2490	10	Stockton to UJ	13
UJ-Bethany-04	Water Truck Highway	2490	10	Stockton to UJ	13
UJ-Bethany-04 Total					
UJ-Bethany-05	Carpenter Foreman	88	10	Stockton to UJ	13
UJ-Bethany-05	Carpenter	353	10	Stockton to UJ	13
UJ-Bethany-05	Excavator Operator	6	10	Stockton to UJ	13
UJ-Bethany-05	Lead Miner	6	10	Stockton to UJ	13
UJ-Bethany-05	Loader Operator	6	10	Stockton to UJ	13
UJ-Bethany-05	Miner	6	10	Stockton to UJ	13
UJ-Bethany-05	Shifter	6	10	Stockton to UJ	13
UJ-Bethany-05	Truck Driver	18	10	Stockton to UJ	13
UJ-Bethany-05 Total					
UJ-Bethany-06	Carpenter Foreman	24	10	Stockton to UJ	13
UJ-Bethany-06	Carpenter	95	10	Stockton to UJ	13
UJ-Bethany-06	General Laborer	11	10	Stockton to UJ	13
UJ-Bethany-06 Total					
UJ-Bethany-07	Articulated Rear Dump 22 CY	211	10	Stockton to UJ	13
UJ-Bethany-07	Crane Oiler	422	10	Stockton to UJ	13
UJ-Bethany-07	General Foreman	422	10	Stockton to UJ	13
UJ-Bethany-07	General Laborer	2321	10	Stockton to UJ	13
UJ-Bethany-07	Hyd Crane Operator	422	10	Stockton to UJ	13
UJ-Bethany-07	Iron Worker	2110	10	Stockton to UJ	13
UJ-Bethany-07	Iron Worker Foreman	422	10	Stockton to UJ	13
UJ-Bethany-07	Lead Miner	211	10	Stockton to UJ	13
UJ-Bethany-07	Loader Operator	211	10	Stockton to UJ	13
UJ-Bethany-07	Mechanic / Welder	211	10	Stockton to UJ	13
UJ-Bethany-07	Mechanic Welder	211	10	Stockton to UJ	13
UJ-Bethany-07	Miner	1688	10	Stockton to UJ	13
UJ-Bethany-07	Shaft Crane Operator	422	10	Stockton to UJ	13
UJ-Bethany-07	Shifter	633	10	Stockton to UJ	13
UJ-Bethany-07	Truck Driver	241	10	Stockton to UJ	13
UJ-Bethany-07 Total					
UJ-Bethany-08	Carpenter Foreman	9	10	Stockton to UJ	13
UJ-Bethany-08	Carpenter	37	10	Stockton to UJ	13
UJ-Bethany-08	Excavator Operator	236	10	Stockton to UJ	13
UJ-Bethany-08	General Foreman	236	10	Stockton to UJ	13
UJ-Bethany-08	General Laborer	736	10	Stockton to UJ	13
UJ-Bethany-08	Hyd Track Drill	236	10	Stockton to UJ	13
UJ-Bethany-08	Hydraulic Excavator to 3.5	236	10	Stockton to UJ	13
UJ-Bethany-08	Iron Worker	44	10	Stockton to UJ	13
UJ-Bethany-08	Iron Worker Foreman	11	10	Stockton to UJ	13
UJ-Bethany-08	Loader Operator	236	10	Stockton to UJ	13
UJ-Bethany-08 Total					
UJ-Bethany-09	Bottomlander	111	24	Stockton to UJ	13
UJ-Bethany-09	Hyd Crane Operator	112	24	Stockton to UJ	13
UJ-Bethany-09	Iron Worker	1176	24	Stockton to UJ	13
UJ-Bethany-09	Iron Worker Foreman	147	24	Stockton to UJ	13

UJ-Bethany-09	Lead Miner	19	24	Stockton to UJ	13
UJ-Bethany-09	Miner	447	24	Stockton to UJ	13
UJ-Bethany-09	Shaft Crane Operator	111	24	Stockton to UJ	13
UJ-Bethany-09	Shifter	166	24	Stockton to UJ	13
UJ-Bethany-09	Toplander	255	24	Stockton to UJ	13
UJ-Bethany-09 Total					
UJ-Bethany-10	Crane Oiler	231	10	Stockton to UJ	13
UJ-Bethany-10	Shaft Crane Operator	231	10	Stockton to UJ	13
UJ-Bethany-10	Toplander	231	10	Stockton to UJ	13
UJ-Bethany-10 Total					
UJ-Bethany-11	Hyd Crane Operator	100	10	Stockton to UJ	13
UJ-Bethany-11	Lead Miner	100	10	Stockton to UJ	13
UJ-Bethany-11	Miner	800	10	Stockton to UJ	13
UJ-Bethany-11	Shifter	100	10	Stockton to UJ	13
UJ-Bethany-11 Total					
UJ-Bethany-12	Crane Oiler	35	10	Stockton to UJ	13
UJ-Bethany-12	Electrician	8	10	Stockton to UJ	13
UJ-Bethany-12	Iron Worker	216	10	Stockton to UJ	13
UJ-Bethany-12	Iron Worker Foreman	27	10	Stockton to UJ	13
UJ-Bethany-12	Lead Miner	8	10	Stockton to UJ	13
UJ-Bethany-12	Mechanic Welder	8	10	Stockton to UJ	13
UJ-Bethany-12	Miner	120	10	Stockton to UJ	13
UJ-Bethany-12	Shaft Crane Operator	35	10	Stockton to UJ	13
UJ-Bethany-12	Shifter	35	10	Stockton to UJ	13
UJ-Bethany-12	Toplander	35	10	Stockton to UJ	13
UJ-Bethany-12 Total					
UJ-Bethany-13	Bottomlander	102	10	Stockton to UJ	13
UJ-Bethany-13	Concrete Pump Operator	64	10	Stockton to UJ	13
UJ-Bethany-13	Crane Oiler	178	10	Stockton to UJ	13
UJ-Bethany-13	Electrician	265	10	Stockton to UJ	13
UJ-Bethany-13	Hyd Crane Operator	265	10	Stockton to UJ	13
UJ-Bethany-13	Lead Miner	700	10	Stockton to UJ	13
UJ-Bethany-13	Mechanic / Welder	726	10	Stockton to UJ	13
UJ-Bethany-13	Mechanic Welder	114	10	Stockton to UJ	13
UJ-Bethany-13	Miner	4681	10	Stockton to UJ	13
UJ-Bethany-13	Shaft Crane Operator	230	10	Stockton to UJ	13.0
UJ-Bethany-13	Shifter	700	10	Stockton to UJ	13
UJ-Bethany-13	Toplander	230	10	Stockton to UJ	13
UJ-Bethany-13 Total					
UJ-Bethany-14	Bottomlander	119	10	Stockton to UJ	13
UJ-Bethany-14	Crane Oiler	119	10	Stockton to UJ	13
UJ-Bethany-14	Iron Worker	949	10	Stockton to UJ	13
UJ-Bethany-14	Iron Worker Foreman	119	10	Stockton to UJ	13
UJ-Bethany-14	Shaft Crane Operator	119	10	Stockton to UJ	13
UJ-Bethany-14	Toplander	119	10	Stockton to UJ	13
UJ-Bethany-14 Total					
UJ-Bethany-15	Bullgang Foreman	50	10	Stockton to UJ	13
UJ-Bethany-15	Bullgang Laborer	100	10	Stockton to UJ	13
UJ-Bethany-15	Flat Truck Driver	50	10	Stockton to UJ	13
UJ-Bethany-15	Hyd Crane Operator	100	10	Stockton to UJ	13
UJ-Bethany-15	Mechanic / Welder	50	10	Stockton to UJ	13

## Marine Inventory for Upper Jones Tract Shaft Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

### Locomotive Inventory for Upper Jones Tract Shaft Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Upper Jones Tract Shaft  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmov  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day)	Paving (sf)	Paving (sf/day)
UJ-Bethany-04	0	260	0	0	0	54795	211	0	0	0	0
UJ-Bethany-05	0	12	0	392	33	0	0	0	0	0	0
UJ-Bethany-07	0	28	0	5268	188	0	0	0	0	0	0
UJ-Bethany-02	5	15	0	0	0	0	0	0	0	0	0
UJ-Bethany-10	0	28	0	25420	908	0	0	0	0	0	0

**Demolition Assumptions for Upper Jones Tract Shaft  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Union Island Access Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Initial Overlay	UIA-Bethany-01	2/1/2027	2/16/2027	12	5	10
02 - Intermediate Overlay	UIA-Bethany-02	6/19/2030	6/24/2030	4	4	10
03 - Final Overlay	UIA-Bethany-03	1/29/2038	5/13/2038	75	4	10

**Total Site Acres**

**0.1**



Offroad Equipment (Fossil Fuel) Inventory for Union Island Access Road  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
UIA-Bethany-01	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	119	12	10	Diesel or Hybrid	224	0.42		
UIA-Bethany-01	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	119	12	10	Diesel or Hybrid	133	0.38		
UIA-Bethany-01	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	119	12	10	Diesel or Hybrid	137	0.38		
UIA-Bethany-01	CAT LOADER/HOE 416 E	Rubber Tired Loaders	119	12	10	Diesel	78	0.36		
UIA-Bethany-02	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	32	4	8	Diesel or Hybrid	224	0.42		
UIA-Bethany-02	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	32	4	8	Diesel or Hybrid	133	0.38		
UIA-Bethany-02	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	32	4	8	Diesel or Hybrid	137	0.38		
UIA-Bethany-02	CAT LOADER/HOE 416 E	Rubber Tired Loaders	32	4	8	Diesel	78	0.36		
UIA-Bethany-03	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	32	75	8	Diesel or Hybrid	224	0.42		
UIA-Bethany-03	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	32	75	8	Diesel or Hybrid	133	0.38		
UIA-Bethany-03	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	32	75	8	Diesel or Hybrid	137	0.38		
UIA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	32	75	8	Diesel	78	0.36		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Union Island Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
NOT NEEDED					

Vehicle Inventory for Union Island Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# dws	Vehicle Hours	Hours/Trip	# of Vehicles/Trip	One-Way Trips/Dws	Trip Location To/From	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
UIA-Bethany-01	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	12	439	0.7	62.7	52	Union Island Access from Vernalis	21	42	Diesel	
UIA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	12	1	0.6	1	0	Union Island Access from Stockton	18	36	Diesel	
UIA-Bethany-02	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	4	119	0.7	170	43	Union Island Access from Stockton	21	42	Diesel	
UIA-Bethany-02	Pickup, 1/2T	General Materials from Stockton	4	1	0.6	1	0.3	Union Island Access from Vernalis	18	36	Diesel	
UIA-Bethany-03	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	75	10379	0.7	1482.7	188	Union Island Access from Stockton	21	42	Diesel	
UIA-Bethany-03	Pickup, 1/2T	General Materials from Stockton	75	4	0.6	6	0.1	Union Island Access from Stockton	18	36	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		

**Employees Required for Union Island Access Road  
Option B2**

<b>Code</b>	<b>Employee Type</b>	<b>Hours</b>	<b># WorkDay</b>	<b>Trip Location (to/from)</b>	<b>Commute Miles/</b>
UIA-Bethany-01	Laborer G2 General	475	10	Stockton to UIA	18
UIA-Bethany-01	OPERATING ENGINEER FOREMAN	119	10	Stockton to UIA	18
UIA-Bethany-01	Operator G3 BH-Loader>3/4cy	119	10	Stockton to UIA	18
UIA-Bethany-01	Operator G4 Grade Check	119	10	Stockton to UIA	18
UIA-Bethany-01	Operator G5 Asphalt Roller	238	10	Stockton to UIA	18
UIA-Bethany-01	Operator G5 Paver	119	10	Stockton to UIA	18
UIA-Bethany-01	Teamster G2 Hwy ED 6-8cy, Water<7mgal	59	10	Stockton to UIA	18
UIA-Bethany-01 Total					
UIA-Bethany-02	Laborer G2 General	128	10	Stockton to UIA	18
UIA-Bethany-02	OPERATING ENGINEER FOREMAN	32	10	Stockton to UIA	18
UIA-Bethany-02	Operator G3 BH-Loader>3/4cy	32	10	Stockton to UIA	18
UIA-Bethany-02	Operator G4 Grade Check	32	10	Stockton to UIA	18
UIA-Bethany-02	Operator G5 Asphalt Roller	64	10	Stockton to UIA	18
UIA-Bethany-02	Operator G5 Paver	32	10	Stockton to UIA	18
UIA-Bethany-02	Teamster G2 Hwy ED 6-8cy, Wate	16	10	Stockton to UIA	18
UIA-Bethany-02 Total					
UIA-Bethany-03	Laborer G2 General	11237	10	Stockton to UIA	18
UIA-Bethany-03	OPERATING ENGINEER FOREMAN	2809	10	Stockton to UIA	18
UIA-Bethany-03	Operator G3 BH-Loader>3/4cy	2809	10	Stockton to UIA	18
UIA-Bethany-03	Operator G4 Grade Check	2809	10	Stockton to UIA	18
UIA-Bethany-03	Operator G5 Asphalt Roller	5619	10	Stockton to UIA	18
UIA-Bethany-03	Operator G5 Paver	2809	10	Stockton to UIA	18
UIA-Bethany-03	Teamster G2 Hwy ED 6-8cy, Water<7	1405	10	Stockton to UIA	18

## Marine Inventory for Union Island Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

## Locomotive Inventory for Union Island Access Road Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Union Island Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Union Island Access Road  
Option B2

Code	Stripping or Grading		# day	Stripping or Grading		Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
UIA-Bethany-01	0	12	0	0	0	0	0	0	0	0	0	0	0	0	507825	42319	
UIA-Bethany-02	0	4	0	0	0	0	0	0	0	0	0	0	0	0	137280	34320	
UIA-Bethany-03	0	75	0	0	0	0	0	0	0	0	0	0	0	0	12009825	160131	



**Demolition Assumptions for Union Island Access Road  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Union Shaft  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
02 - Clear and Grub	UI-Bethany-01	1/23/2030	2/12/2030	15	5	10
01 - Shaft site facilities and operations	UI-Bethany-02	1/23/2030	1/14/2032	516	5	10
03 - Ground treatment	UI-Bethany-03	2/13/2030	4/9/2030	40	5	10
04 - Raise Shaft Pad	UI-Bethany-04	4/10/2030	4/8/2031	260	5	10
05 - Excavate, Set Strips, & Place Guide Wall	UI-Bethany-05	4/9/2031	4/24/2031	12	5	10
06 - Place Guide Walls Concrete	UI-Bethany-06	4/25/2031	4/28/2031	2	2	10
07 - Excavate Slurry Wall & Place Concrete & Rebar	UI-Bethany-07	4/29/2031	6/5/2031	28	5	10
08 - Slurry Wall including Strip Forms and Place Rebar & Top Beam	UI-Bethany-08	6/6/2031	7/18/2031	31	5	10
09 - Excavate Shaft	UI-Bethany-09	7/21/2031	8/27/2031	28	5	10
10 - Place Tremie Seal Rebar, Cooling Pipes, & Seal	UI-Bethany-10	7/21/2031	9/10/2031	38	7	24
11 - Dewater Shaft	UI-Bethany-11	9/11/2031	9/17/2031	5	5	10
12 - Place TBM Cradle Rebar and Cradle Pour	UI-Bethany-12	9/18/2031	9/25/2031	6	5	10
14 - Assemble & Place Buttress, Form, & Concrete for Shaft Liner	UI-Bethany-13	9/26/2031	1/6/2032	73	5	10
13 - Breakout Slurry Wall for TBM	UI-Bethany-14	9/26/2031	10/22/2031	19	5	10
15 - Shaft Finishing	UI-Bethany-15	1/6/2032	1/14/2032	7	5	10

**Total Site Acres**

**14**

Offroad Equipment (Fossil Fuel) Inventory for Union Shaft  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
UI-Bethany-01	623G Scraper Elevate 21 CY	Scaper	58	15	4	Diesel	359	0.48		
UI-Bethany-01	CAT D8 Dozer	Crawler Tractor	29	15	2	Diesel	328	0.43		
UI-Bethany-01	Grader 16H - 16' Blade	Grader	29	15	2	Diesel	285	0.41		
UI-Bethany-03	Air Compressor 375 CFM Diesel	Air Compressor	492	40	12	Diesel - Tier 4	122	0.48		
UI-Bethany-03	Case 590 Supn Loader BH	Rubber Tired Loaders	492	40	12.3	Diesel	110	0.36		
UI-Bethany-03	DMM Deep Soil Mixer	Bore Drill Rigs	200	40	5	Diesel	522	0.5		
UI-Bethany-03	DMM Grout Mix Plant	Other Construction Equipn	200	40	5	Diesel	500	0.34		
UI-Bethany-03	Grove RT Crane 30 Ton	Crane	492	40	12	Diesel	160	0.29		
UI-Bethany-03	Portable 90 Kw Diesel Gen	Generator	492	40	12	Diesel - Tier 4	158	0.74		
UI-Bethany-04	CAT CB-634D Vibratory 84"	Rollers	2259	260	9	Diesel	145	0.38		
UI-Bethany-04	CAT D8 Dozer	Crawler Tractor	2259	260	9	Diesel	328	0.43		
UI-Bethany-04	CAT Grader 16H	Grader	2259	260	9	Diesel	285	0.41		
UI-Bethany-05	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	6	12	1	Diesel or Hybrid	130	0.36		
UI-Bethany-05	CAT Hyd Excavator 1CY	Excavator	6	12	1	Diesel	138	0.38		
UI-Bethany-07	1600 CFM Compressor Diesel	Air Compressor	211	28	8	Diesel - Tier 4	540	0.48		
UI-Bethany-07	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	211	28	8	Diesel or Hybrid	130	0.36		
UI-Bethany-07	Concrete Pump Truck	Off-Highway Truck	422	28	15	Diesel	300	0.38		
UI-Bethany-07	Hydraulic 55 Ton Crane	Crane	211	28	8	Diesel	350	0.29		
UI-Bethany-07	Hydromill	Bore Drill Rig	211	28	8	Diesel	522	0.5		
UI-Bethany-07	Manitowoc 200 Ton Crane	Crane	211	28	8	Diesel	760	0.29		
UI-Bethany-07	Manitowoc 777 200 Ton Crane	Crane	211	28	8	Diesel	760	0.29		
UI-Bethany-07	Slurry Wall Mixer	Cement & Mortar Mix	211	28	8	Diesel	8	0.56		
UI-Bethany-07	Slurry Wall Techniwell	Pumps	211	28	8	Diesel	500	0.74		
UI-Bethany-08	250 CFM Compressor Diesel	Air Compressor	4	31	0	Diesel - Tier 3	75	0.48		
UI-Bethany-08	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	236	31	8	Diesel or Hybrid	130	0.36		
UI-Bethany-08	CAT Hyd Excavator 1CY	Excavator	236	31	8	Diesel	138	0.38		
UI-Bethany-09	Manitowoc 777 200 Ton Crane	Crane	231	28	8	Diesel	760	0.29		
UI-Bethany-10	Concrete Pump Truck	Off-Highway Truck	76	38	2	Diesel	300	0.38		
UI-Bethany-10	Hydraulic 25 Ton Crane	Crane	76	38	2	Diesel	100	0.29		
UI-Bethany-10	Hydraulic 40 Ton Crane	Crane	36	38	1	Diesel	300	0.29		
UI-Bethany-10	Manitowoc 777 200 Ton Crane	Crane	111	38	3	Diesel	760	0.29		
UI-Bethany-11	150 KW Diesel Generator	Generator	100	5	20.0	Diesel - Tier 4	183	0.74		
UI-Bethany-11	Dewater Pump 6"	Pumps	400	5	80.0	Diesel	50	0.74		
UI-Bethany-11	Hydraulic 15 Ton Crane	Crane	100	5	20.0	Diesel	85	0.29		
UI-Bethany-12	250 CFM Compressor Diesel	Air Compressor	8	6	1	Diesel - Tier 3	75	0.48		
UI-Bethany-12	Manitowoc 777 200 Ton Crane	Crane	8	6	1	Diesel	760	0.29		
UI-Bethany-12	Manitowoc 777 200 Ton Crane	Crane	27	6	5	Diesel	760	0.29		
UI-Bethany-12	Trailer Conc Pump 100 CY HR	Pumps	8	6	1	Diesel	200	0.74		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	50	73	1	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	60	73	1	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	52	73	1	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	64	73	1	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	64	73	1	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	205	73	3	Diesel - Tier 3	75	0.48		
UI-Bethany-13	250 CFM Compressor Diesel	Air Compressor	205	73	3	Diesel - Tier 3	75	0.48		
UI-Bethany-13	Hydraulic 9 Ton Crane	Crane	60	73	1	Diesel	85	0.29		
UI-Bethany-13	Hydraulic 9 Ton Crane	Crane	205	73	3	Diesel	85	0.29		
UI-Bethany-13	Manitowoc 777 200 Ton Crane	Crane	50	73	1	Diesel	760	0.29		
UI-Bethany-13	Manitowoc 777 200 Ton Crane	Crane	52	73	1	Diesel	760	0.29		
UI-Bethany-13	Manitowoc 999-275 Ton Crane	Crane	64	73	1	Diesel	900	0.29		
UI-Bethany-13	Manitowoc 999-275 Ton Crane	Crane	64	73	1	Diesel	900	0.29		
UI-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	52	73	1	Diesel	200	0.74		
UI-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	64	73	1	Diesel	200	0.74		
UI-Bethany-13	Trailer Conc Pump 100 CY HR	Pumps	205	73	3	Diesel	200	0.74		
UI-Bethany-14	250 CFM Compressor Diesel	Air Compressor	119	19	6	Diesel - Tier 3	75	0.48		
UI-Bethany-14	Manitowoc 777 200 Ton Crane	Crane	119	19	6	Diesel	760	0.29		
UI-Bethany-15	CAT Forklift 5,500 LB	Aerial Lifts	50	7	7	Diesel	63	0.31		
UI-Bethany-15	Hydraulic 40 Ton Crane	Crane	50	7	7	Diesel	300	0.29		
UI-Bethany-15	Hydraulic 9 Ton Crane	Crane	50	7	7	Diesel	85	0.29		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Union Shaft  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
UI-Bethany-03	Water Pump 4"	492	40	1	12
UI-Bethany-13	Electric Axial Fan 114,000 CFM	60	73	50	41
UI-Bethany-04	Electric Welder, 400 Amp	205	73		

Vehicle Inventory for Union Shaft  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# dte	Vehicle Hours	Hours/Trip	# of Vehicles Trips	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
U1-Bethany-03	Pickup, 1/2T	General Materials from Stockton	40	1	0.6	2	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	40	27	0.6	45	1	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-04	20 Ton Flatbed Truck/End Dump	Fill From JobSite from Lower Roberts	260	1657	0.5	3314	13	Union Island Shaft from Livermore	15	30	Diesel	
U1-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	12	1	0.6	2	0.2	Lower Roberts Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-05	40 Ton Tractor & Trailer	General Materials from Stockton	12	2	0.6	3	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	2	1	0.6	1	0.5	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-06	40 Ton Tractor & Trailer	Rebar from Livermore	2	1	1.3	1	0.5	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-06	Concrete Transit Mix Truck 13cy	Concrete from Stockton	2	14	0.6	23	11.5	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	28	3.6	0.6	6	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-07	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	28	383.5	2.0	195	7	Union Island Shaft from Sacramento	59	118	Diesel	
U1-Bethany-07	40 Ton Tractor & Trailer	Rebar from Livermore	28	30.4	1.3	24	1	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-07	Concrete Transit Mix Truck 13cy	Concrete from Stockton	28	333	0.6	555	19.8	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	31	1	0.6	1	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	31	2	0.6	3	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-08	40 Ton Tractor & Trailer	Rebar from Livermore	31	1	1.3	1	0	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-08	Concrete Transit Mix Truck 13cy	Concrete from Stockton	31	7	0.6	11	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	38	3	0.6	5	0.1	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-10	40 Ton Tractor & Trailer	Rebar from Livermore	38	9	1.3	7	0.2	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-10	Concrete Transit Mix Truck 13cy	Concrete from Stockton	38	290	0.6	484	12.7	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-12	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	6	1	0.6	2	0.3	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-12	40 Ton Tractor & Trailer	Rebar from Livermore	6	1	1.3	1	0	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-12	Concrete Transit Mix Truck 13cy	Concrete from Stockton	6	42.0	0.6	70	12	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-13	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	73	3.0	0.6	5	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-13	Concrete Transit Mix Truck 13cy	Concrete from Stockton	73	219	0.6	365	5	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	19	3	0.6	5	0.3	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-14	40 Ton Tractor & Trailer	Rebar from Livermore	19	3	1.3	2	0.1	Union Island Shaft from Livermore	38	76	Diesel	
U1-Bethany-15	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	7	1	0.6	1	0	Union Island Shaft from Stockton	18	36	Diesel	
U1-Bethany-15	40 Ton Tractor & Trailer	General Materials from Stockton	7	12.0	0.6	20	3	Union Island Shaft from Stockton	18	36	Diesel	

Vehicle Use on Unpaved/Dirt Surface (no access made at park and ride lots) --- on the Construction Site										Miles On Site		
U1-Bethany-03	Truck Flatbed 4 Ton	Off-Highway Truck	40	492	not applicable	not applicable	not applicable	in-site assume 5 miles/hr	not applicable	2460	Diesel	
U1-Bethany-05	CAT 730 Rear Dumps	Dumpers	12	18	not applicable	not applicable	not applicable	in-site assume 5 miles/hr	not applicable	92	Diesel or Hybrid	
U1-Bethany-07	CAT 730 Rear Dumps	Dumpers	28	241	not applicable	not applicable	not applicable	on-site assume 5 miles/hr	not applicable	1303	Diesel or Hybrid	
U1-Bethany-09	Trucking Off Highway CAT 730	Dumpers	28	1155	not applicable	not applicable	not applicable	on-site assume 5 miles/hr	not applicable	5775	Diesel or Hybrid	
U1-Bethany-15	Heavy Flatbed 10 Ton	Off-Highway Truck	7	50	not applicable	not applicable	not applicable	on-site assume 5 miles/hr	not applicable	250	Diesel	

**Employees Required for Union Shaft  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
UI-Bethany-01	Operator G4 Grade Check	15	10	Stockton to UI	18
UI-Bethany-01	Dozer Operator	29	10	Stockton to UI	18
UI-Bethany-01	General Foreman	15	10	Stockton to UI	18
UI-Bethany-01	Grader Operator	29	10	Stockton to UI	18
UI-Bethany-01	Scraper Operator	58	10	Stockton to UI	18
UI-Bethany-01 Total					
UI-Bethany-03	Laborer G2 General	1476	10	Stockton to UI	18
UI-Bethany-03	Operator G4 Grade Check	492	10	Stockton to UI	18
UI-Bethany-03	Operating Engineer	492	10	Stockton to UI	18
UI-Bethany-03	Operator G2 Plant Operator	984	10	Stockton to UI	18
UI-Bethany-03	Operator G3 BH-1 Loader	492	10	Stockton to UI	18
UI-Bethany-03	Operator G3a Cranes 45 Ton	492	10	Stockton to UI	18
UI-Bethany-03	Operator G4 Heavy Duty Mechan	492	10	Stockton to UI	18
UI-Bethany-03	Teamster G1 Hwy	492	10	Stockton to UI	18
UI-Bethany-03	Teamster G2 Hwy	492	10	Stockton to UI	18
UI-Bethany-03 Total					
UI-Bethany-04	Compactor Operator	2259	10	Stockton to UI	18
UI-Bethany-04	Dozer Operator	2259	10	Stockton to UI	18
UI-Bethany-04	Grade Setter / Checker	2259	10	Stockton to UI	18
UI-Bethany-04	Grader Operator	2259	10	Stockton to UI	18
UI-Bethany-04	Truck Driver	2259	10	Stockton to UI	18
UI-Bethany-04	Water Truck Highway	2259	10	Stockton to UI	18
UI-Bethany-04 Total					
UI-Bethany-05	Carpenter Foreman	88	10	Stockton to UI	18
UI-Bethany-05	Carpenter	353	10	Stockton to UI	18
UI-Bethany-05	Excavator Operator	6	10	Stockton to UI	18
UI-Bethany-05	Lead Miner	6	10	Stockton to UI	18
UI-Bethany-05	Loader Operator	6	10	Stockton to UI	18
UI-Bethany-05	Miner	6	10	Stockton to UI	18
UI-Bethany-05	Shifter	6	10	Stockton to UI	18
UI-Bethany-05	Truck Driver	18	10	Stockton to UI	18
UI-Bethany-05 Total					
UI-Bethany-06	Carpenter Foreman	24	10	Stockton to UI	18
UI-Bethany-06	Carpenter	95	10	Stockton to UI	18
UI-Bethany-06	General Laborer	11	10	Stockton to UI	18
UI-Bethany-06 Total					
UI-Bethany-07	Articulated Rear Dump 22 CY	211	10	Stockton to UI	18
UI-Bethany-07	Crane Oiler	422	10	Stockton to UI	18
UI-Bethany-07	General Foreman	422	10	Stockton to UI	18
UI-Bethany-07	General Laborer	2321	10	Stockton to UI	18
UI-Bethany-07	Hyd Crane Operator	422	10	Stockton to UI	18
UI-Bethany-07	Iron Worker	2110	10	Stockton to UI	18
UI-Bethany-07	Iron Worker Foreman	422	10	Stockton to UI	18
UI-Bethany-07	Lead Miner	211	10	Stockton to UI	18
UI-Bethany-07	Loader Operator	211	10	Stockton to UI	18
UI-Bethany-07	Mechanic / Welder	211	10	Stockton to UI	18
UI-Bethany-07	Mechanic Welder	211	10	Stockton to UI	18
UI-Bethany-07	Miner	1688	10	Stockton to UI	18
UI-Bethany-07	Shaft Crane Operator	422	10	Stockton to UI	18
UI-Bethany-07	Shifter	633	10	Stockton to UI	18
UI-Bethany-07	Truck Driver	241	10	Stockton to UI	18
UI-Bethany-07 Total					
UI-Bethany-08	Carpenter Foreman	9	10	Stockton to UI	18
UI-Bethany-08	Carpenter	37	10	Stockton to UI	18
UI-Bethany-08	Excavator Operator	236	10	Stockton to UI	18
UI-Bethany-08	General Foreman	236	10	Stockton to UI	18
UI-Bethany-08	General Laborer	736	10	Stockton to UI	18
UI-Bethany-08	Hyd Track Drill	236	10	Stockton to UI	18
UI-Bethany-08	Hydraulic Excavator to 3.5	236	10	Stockton to UI	18
UI-Bethany-08	Iron Worker	44	10	Stockton to UI	18
UI-Bethany-08	Iron Worker Foreman	11	10	Stockton to UI	18
UI-Bethany-08	Loader Operator	236	10	Stockton to UI	18
UI-Bethany-08 Total					
UI-Bethany-09	Crane Oiler	231	10	Stockton to UI	18
UI-Bethany-09	Shaft Crane Operator	231	10	Stockton to UI	18
UI-Bethany-09	Toplander	231	10	Stockton to UI	18
UI-Bethany-09 Total					

UI-Bethany-10	Bottomlander	111	24	Stockton to UI	18
UI-Bethany-10	Hyd Crane Operator	112	24	Stockton to UI	18
UI-Bethany-10	Iron Worker	1176	24	Stockton to UI	18
UI-Bethany-10	Iron Worker Foreman	147	24	Stockton to UI	18
UI-Bethany-10	Lead Miner	19	24	Stockton to UI	18
UI-Bethany-10	Miner	447	24	Stockton to UI	18
UI-Bethany-10	Shaft Crane Operator	111	24	Stockton to UI	18
UI-Bethany-10	Shifter	166	24	Stockton to UI	18
UI-Bethany-10	Toplander	255	24	Stockton to UI	18
UI-Bethany-10 Total					
UI-Bethany-11	Hyd Crane Operator	100	10	Stockton to UI	18
UI-Bethany-11	Lead Miner	100	10	Stockton to UI	18
UI-Bethany-11	Miner	800	10	Stockton to UI	18
UI-Bethany-11	Shifter	100	10	Stockton to UI	18
UI-Bethany-11 Total					
UI-Bethany-12	Crane Oiler	35	10	Stockton to UI	18
UI-Bethany-12	Electrician	8	10	Stockton to UI	18
UI-Bethany-12	Iron Worker	216	10	Stockton to UI	18
UI-Bethany-12	Iron Worker Foreman	27	10	Stockton to UI	18
UI-Bethany-12	Lead Miner	8	10	Stockton to UI	18
UI-Bethany-12	Mechanic Welder	8	10	Stockton to UI	18
UI-Bethany-12	Miner	120	10	Stockton to UI	18
UI-Bethany-12	Shaft Crane Operator	35	10	Stockton to UI	18
UI-Bethany-12	Shifter	35	10	Stockton to UI	18
UI-Bethany-12	Toplander	35	10	Stockton to UI	18
UI-Bethany-12 Total					
UI-Bethany-13	Bottomlander	102	10	Stockton to UI	18
UI-Bethany-13	Concrete Pump Operator	64	10	Stockton to UI	18
UI-Bethany-13	Crane Oiler	178	10	Stockton to UI	18
UI-Bethany-13	Electrician	265	10	Stockton to UI	18
UI-Bethany-13	Hyd Crane Operator	265	10	Stockton to UI	18
UI-Bethany-13	Lead Miner	700	10	Stockton to UI	18
UI-Bethany-13	Mechanic / Welder	726	10	Stockton to UI	18
UI-Bethany-13	Mechanic Welder	114	10	Stockton to UI	18
UI-Bethany-13	Miner	4681	10	Stockton to UI	18
UI-Bethany-13	Shaft Crane Operator	230	10	Stockton to UI	18
UI-Bethany-13	Shifter	700	10	Stockton to UI	18
UI-Bethany-13	Toplander	230	10	Stockton to UI	18
UI-Bethany-13 Total					
UI-Bethany-14	Bottomlander	119	10	Stockton to UI	18
UI-Bethany-14	Crane Oiler	119	10	Stockton to UI	18
UI-Bethany-14	Iron Worker	949	10	Stockton to UI	18
UI-Bethany-14	Iron Worker Foreman	119	10	Stockton to UI	18
UI-Bethany-14	Shaft Crane Operator	119	10	Stockton to UI	18
UI-Bethany-14	Toplander	119	10	Stockton to UI	18
UI-Bethany-14 Total					
UI-Bethany-15	Bullgang Foreman	50	10	Stockton to UI	18
UI-Bethany-15	Bullgang Laborer	100	10	Stockton to UI	18
UI-Bethany-15	Flat Truck Driver	50	10	Stockton to UI	18
UI-Bethany-15	Hyd Crane Operator	100	10	Stockton to UI	18
UI-Bethany-15	Mechanic / Welder	50	10	Stockton to UI	18

## Marine Inventory for Union Shaft Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



### Locomotive Inventory for Union Shaft Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Union Shaft**  
**Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmov  
Option B2

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cu/day)	Fill (cy)	Fill (cu/day)	Dredge (cy)	Dredge (cu/day)	Paving (sf)	Paving (sf/day)
UI-Bethany-01	5	15	0	0	0	0	0	0	0	0	0
UI-Bethany-04	0	260	0	0	0	49701	191	0	0	0	0
UI-Bethany-09	0	28	0	25420	908	0	0	0	0	0	0
UI-Bethany-05	0	12	0	392	33	0	0	0	0	0	0
UI-Bethany-07	0	28	0	5268	188	0	0	0	0	0	0

**Demolition Assumptions for Union Shaft  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Bethany Complex North Access Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	BCNA-Bethany-01	7/29/2026	9/18/2026	38	5	10
02 - Embankment	BCNA-Bethany-02	8/6/2026	2/5/2027	132	5	10
03 - Culvert Pipe	BCNA-Bethany-03	8/11/2026	2/9/2027	131	5	10
04 - Drainage	BCNA-Bethany-04	8/12/2026	3/1/2027	144	5	10
05 - Road Base	BCNA-Bethany-05	8/20/2026	5/13/2027	191	5	10
06 - Bridge Work	BCNA-Bethany-06	8/31/2026	4/23/2027	170	5	10
07 - Initial Overlay	BCNA-Bethany-07	9/1/2026	5/26/2027	192	5	10
08 - Signs and Signals	BCNA-Bethany-08	9/9/2026	6/9/2027	196	5	10
09 - Intermediate Overlay	BCNA-Bethany-09	3/25/2030	6/18/2030	62	5	10
10 - Final Overlay	BCNA-Bethany-10	5/14/2038	5/18/2038	3	3	10

**Total Site Acres**

**44**

**Offroad Equipment (Fossil Fuel) Inventory for Bethany Complex North Access Road  
Option B2**

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
BCNA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	133	38	3	Diesel or Hybrid	179	0.43		
BCNA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	109	38	3	Diesel or Hybrid	179	0.43		
BCNA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	165	38	4	Diesel or Hybrid	179	0.43		
BCNA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	287	38	8	Diesel or Hybrid	179	0.43		
BCNA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	82	38	2	Diesel	384	0.38		
BCNA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	133	38	3	Diesel	384	0.38		
BCNA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	144	38	4	Diesel	384	0.38		
BCNA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	54	38	1	Diesel	384	0.38		
BCNA-Bethany-02	CAT 14 M	Grader	52	132	0	Diesel	274	0.41		
BCNA-Bethany-02	CAT 14 M	Grader	15	132	0	Diesel	274	0.41		
BCNA-Bethany-02	CAT 14 M	Grader	22	132	0	Diesel	274	0.41		
BCNA-Bethany-02	CAT 14 M	Grader	571	132	4	Diesel	274	0.41		
BCNA-Bethany-02	CAT 825, Roller	Rollers	44	132	0	Diesel	315	0.38		
BCNA-Bethany-02	CAT 825, Roller	Rollers	1143	132	9	Diesel	315	0.38		
BCNA-Bethany-02	CAT 825, Roller	Rollers	103	132	1	Diesel	315	0.38		
BCNA-Bethany-02	CAT 825, Roller	Rollers	29	132	0	Diesel	315	0.38		
BCNA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	44	132	0	Diesel or Hybrid	179	0.43		
BCNA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	1143	132	9	Diesel or Hybrid	179	0.43		
BCNA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	103	132	1	Diesel or Hybrid	179	0.43		
BCNA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	29	132	0	Diesel or Hybrid	179	0.43		
BCNA-Bethany-02	Water Pump, 4" Diesel	Pumps	4	132	0	Diesel	10	0.74		
BCNA-Bethany-02	Water Pump, 4" Diesel	Pumps	5	132	0	Diesel	10	0.74		
BCNA-Bethany-02	Water Pump, 4" Diesel	Pumps	137	132	1	Diesel	10	0.74		
BCNA-Bethany-02	Water Pump, 4" Diesel	Pumps	12	132	0	Diesel	10	0.74		
BCNA-Bethany-03	Air Compressor 375 cfm	Air Compressor	9	131	0	Diesel - Tier 4	122	0.48		
BCNA-Bethany-03	Air Compressor 375 cfm	Air Compressor	6	131	0	Diesel - Tier 4	122	0.48		
BCNA-Bethany-03	Air Compressor 375 cfm	Air Compressor	10	131	0	Diesel - Tier 4	122	0.48		
BCNA-Bethany-03	Air Compressor 375 cfm	Air Compressor	15	131	0	Diesel - Tier 4	122	0.48		
BCNA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	17	131	0	Diesel	78	0.36		
BCNA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	11	131	0	Diesel	78	0.36		
BCNA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	20	131	0	Diesel	78	0.36		
BCNA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	29	131	0	Diesel	78	0.36		
BCNA-Bethany-03	Compactor, Plate, 22" w x 35" BCNA-	Plate Compactors	9	131	0	Diesel	8.5	0.43		
Bethany-03	Compactor, Plate, 22" w x 35" BCNA-	Plate Compactors	6	131	0	Diesel	8.5	0.43		
Bethany-03	Compactor, Plate, 22" w x 35" BCNA-	Plate Compactors	10	131	0	Diesel	8.5	0.43		
Bethany-03	Compactor, Plate, 22" w x 35" BCNA-	Plate Compactors	15	131	0	Diesel	8.5	0.43		
BCNA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	13	144	0	Diesel	78	0.36		
BCNA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	20	144	0	Diesel	78	0.36		
BCNA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	29	144	0	Diesel	78	0.36		
BCNA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	34	144	0	Diesel	78	0.36		
BCNA-Bethany-04	Compactor, Trench Roller, Vib 32" w	Rollers	26	144	0	Diesel	20	0.38		
BCNA-Bethany-04	Compactor, Trench Roller, Vib 32" w	Rollers	39	144	0	Diesel	20	0.38		
BCNA-Bethany-04	Compactor, Trench Roller, Vib 32" w	Rollers	58	144	0	Diesel	20	0.38		
BCNA-Bethany-04	Compactor, Trench Roller, Vib 32" w	Rollers	68	144	0	Diesel	20	0.38		
BCNA-Bethany-05	CAT 14 M	Grader	79	191	0	Diesel	274	0.41		
BCNA-Bethany-05	CAT 14 M	Grader	119	191	1	Diesel	274	0.41		
BCNA-Bethany-05	CAT 14 M	Grader	139	191	1	Diesel	274	0.41		
BCNA-Bethany-05	CAT 14 M	Grader	140	191	1	Diesel	274	0.41		
BCNA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	79	191	0	Diesel	156	0.38		
BCNA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	119	191	1	Diesel	156	0.38		
BCNA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	139	191	1	Diesel	156	0.38		
BCNA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	140	191	1	Diesel	156	0.38		
BCNA-Bethany-05	Water Pump, 4" Diesel	Pumps	79	191	0	Diesel	10	0.74		
BCNA-Bethany-05	Water Pump, 4" Diesel	Pumps	119	191	1	Diesel	10	0.74		
BCNA-Bethany-05	Water Pump, 4" Diesel	Pumps	139	191	1	Diesel	10	0.74		
BCNA-Bethany-05	Water Pump, 4" Diesel	Pumps	140	191	1	Diesel	10	0.74		
BCNA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	52	192	0	Diesel or Hybrid	224	0.42		
BCNA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	79	192	0	Diesel or Hybrid	224	0.42		
BCNA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	115	192	1	Diesel or Hybrid	224	0.42		
BCNA-Bethany-07	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	82	192	0	Diesel or Hybrid	224	0.42		
BCNA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	52	192	0	Diesel or Hybrid	133	0.38		
BCNA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	79	192	0	Diesel or Hybrid	133	0.38		
BCNA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	115	192	1	Diesel or Hybrid	133	0.38		
BCNA-Bethany-07	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	82	192	0	Diesel or Hybrid	133	0.38		
BCNA-Bethany-07	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	52	192	0	Diesel or Hybrid	137	0.38		
BCNA-Bethany-07	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	79	192	0	Diesel or Hybrid	137	0.38		
BCNA-Bethany-07	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	115	192	1	Diesel or Hybrid	137	0.38		
BCNA-Bethany-07	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	82	192	0	Diesel or Hybrid	137	0.38		
BCNA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	52	192	0	Diesel	78	0.36		
BCNA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	79	192	0	Diesel	78	0.36		
BCNA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	115	192	1	Diesel	78	0.36		
BCNA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	82	192	0	Diesel	78	0.36		
BCNA-Bethany-08	Boom Truck, 12.5 Tn Boom	Crane	4	196	0	Diesel or Hybrid	100	0.29		
BCNA-Bethany-08	Boom Truck, 12.5 Tn Boom	Crane	8	196	0	Diesel or Hybrid	100	0.29		
BCNA-Bethany-08	Boom Truck, 12.5 Tn Boom	Crane	93	196	0	Diesel or Hybrid	100	0.29		
BCNA-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	4	196	0	Diesel	78	0.36		
BCNA-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	8	196	0	Diesel	78	0.36		
BCNA-Bethany-08	CAT LOADER/HOE 416 E	Rubber Tired Loaders	93	196	0	Diesel	78	0.36		
BCNA-Bethany-09	Air Compressor 185 cfm	Air Compressor	11	62	0	Diesel - Tier 4	49	0.48		
BCNA-Bethany-09	Boom Truck, 12.5 Tn Boom	Crane	6	62	0	Diesel or Hybrid	100	0.29		
BCNA-Bethany-10	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	25	3	8	Diesel or Hybrid	224	0.42		
BCNA-Bethany-10	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	25	3	8	Diesel or Hybrid	133	0.38		
BCNA-Bethany-10	Asphalt Roller, 2 Drum 12tn, 137hp	Rollers	25	3	8	Diesel or Hybrid	137	0.38		
BCNA-Bethany-10	CAT LOADER/HOE 416 E	Rubber Tired Loaders	25	3	8	Diesel	78	0.36		
BCNA-Bethany-6	Grove RT Crane 55t, 247 hp	Crane	3230	170	19	Diesel	247	0.29		
BCNA-Bethany-6	Manitowoc 182 ton Crane	Crane	3230	170	19	Diesel	310	0.29		

Offroad Equipment (Electric) Inventory for Bethany Complex North Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BCNA-Bethany-09	400A, Electric Welder	11.3	62	14.4	3
BCNA-Bethany-02	Light Plant, 4 lite, 1000w	5281	132		

Vehicle Inventory for Bethany Complex North Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
BCNA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	38	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-02	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	132	12032	0.7	17189	130	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-02	Pickup, 1/2T	General Materials from Stockton	132	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-03	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	131	6	0.7	8	0.1	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-03	Pickup, 1/2T	General Materials from Stockton	131	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-03	40 Ton Tractor & Trailer	General Materials from Stockton	131	4	1.1	4	0.0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	144	6	1.1	6	0.0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	144	20	0.7	28	0.2	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-04	Pickup, 1/2T	General Materials from Stockton	144	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-05	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	191	4150	0.7	5929	31	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-05	Pickup, 1/2T	General Materials from Stockton	191	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	170	48	1.1	45	0.3	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-07	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	192	1436	0.7	2052	11	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-07	Pickup, 1/2T	General Materials from Stockton	192	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	196	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-08	Pickup, 1/2T	General Materials from Stockton	196	4	1.1	4	0	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	196	74	1.1	69	0.4	Bethany Complex North Access from Stockton	32	64	Diesel	
BCNA-Bethany-09	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	62	3	0.8	4	0.1	Bethany Complex North Access from Sacramento	24	48	Diesel	
BCNA-Bethany-09	Pickup, 1/2T	General Materials from Sacramento	62	1	0.8	1	0.0	Bethany Complex North Access from Sacramento	24	48	Diesel	
BCNA-Bethany-09	40 Ton Tractor & Trailer	General Materials from Sacramento	62	2	0.8	2	0.0	Bethany Complex North Access from Sacramento	24	48	Diesel	
BCNA-Bethany-10	20 Ton Flatbed Truck/End Dump	sphalt, Hot Mix Delivered from Verna	3	94	0.7	134	45	Bethany Complex North Access from Vernalis	21	42	Diesel	
BCNA-Bethany-10	Pickup, 1/2T	General Materials from Stockton	3	1	1.1	1	0	Bethany Complex North Access from Stockton	32	64	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
BCNA-Bethany-01	CAT 730 30T, Articulated End Dumbo	Dummers	38	1800	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	9001	Diesel or Hybrid	
BCNA-Bethany-01	Truck, End Dump, 16-20cy, Hwy	Dummers	38	398	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	1989	Diesel	
BCNA-Bethany-02	Cat 10mpal w/Cat 775, 5.11HP	Dummers	132	660	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	3300	Diesel	
BCNA-Bethany-04	Truck, End Dump, 10-13cy, Hwy	Dummers	144	191	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	957	Diesel	



**Employees Required for Bethany Complex North Access Road  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
BCNA-Bethany-01	OPERATING ENGINEER FOREMAN	207	10	Stockton to BCNA	128
BCNA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	413	10	Stockton to BCNA	128
BCNA-Bethany-01	Operator G4 Dozer & Push Cat	694	10	Stockton to BCNA	128
BCNA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	2198	10	Stockton to BCNA	128
BCNA-Bethany-01 Total					
BCNA-Bethany-02	Laborer G2 General	158	10	Stockton to BCNA	128
BCNA-Bethany-02	OPERATING ENGINEER FOREMAN	1320	10	Stockton to BCNA	128
BCNA-Bethany-02	Operator G2 Finish Blade	660	10	Stockton to BCNA	128
BCNA-Bethany-02	Operator G4 Dozer & Push Cat	1320	10	Stockton to BCNA	128
BCNA-Bethany-02	Operator G5 Compactor w-blade	1320	10	Stockton to BCNA	128
BCNA-Bethany-02	Teamster G3 ED 8-24cy, Water>7mgal	660	10	Stockton to BCNA	128
BCNA-Bethany-02 Total					
BCNA-Bethany-03	Laborer Foreman	39	10	Stockton to BCNA	128
BCNA-Bethany-03	Laborer G1 Pipe layers	156	10	Stockton to BCNA	128
BCNA-Bethany-03	Operator G3 BH-Loader>3/4cy	78	10	Stockton to BCNA	128
BCNA-Bethany-03	Teamster G1 Hwy ED<6cy, Flatber	59	10	Stockton to BCNA	128
BCNA-Bethany-03	Teamster G2 Hwy ED 6-8cy, Wate	20	10	Stockton to BCNA	128
BCNA-Bethany-03 Total					
BCNA-Bethany-04	Operator G4 Loader <4.1cy	96	10	Stockton to BCNA	128
BCNA-Bethany-04	Laborer G1 Pipe layers	383	10	Stockton to BCNA	128
BCNA-Bethany-04	Laborer G1 Power Tamper	191	10	Stockton to BCNA	128
BCNA-Bethany-04	Teamster G2 Hwy ED 6-8cy, Water<7	191	10	Stockton to BCNA	128
BCNA-Bethany-04 Total					
BCNA-Bethany-05	OPERATING ENGINEER FOREMAN	476	10	Stockton to BCNA	128
BCNA-Bethany-05	Laborer G3 Flagman	952	10	Stockton to BCNA	128
BCNA-Bethany-05	Operator G2 Finish Blade	476	10	Stockton to BCNA	128
BCNA-Bethany-05	Operator G4 Grade Check	476	10	Stockton to BCNA	128
BCNA-Bethany-05	Operator G7 Roller, Compactor	476	10	Stockton to BCNA	128
BCNA-Bethany-05	Operator G8 Generator	95	10	Stockton to BCNA	128
BCNA-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	476	10	Stockton to BCNA	128
BCNA-Bethany-05 Total					
BCNA-Bethany-07	Laborer G2 General	1312	10	Stockton to BCNA	128
BCNA-Bethany-07	OPERATING ENGINEER FOREMAN	328	10	Stockton to BCNA	128
BCNA-Bethany-07	Operator G3 BH-Loader>3/4cy	328	10	Stockton to BCNA	128
BCNA-Bethany-07	Operator G4 Grade Check	328	10	Stockton to BCNA	128
BCNA-Bethany-07	Operator G5 Asphalt Roller	656	10	Stockton to BCNA	128
BCNA-Bethany-07	Operator G5 Paver	328	10	Stockton to BCNA	128
BCNA-Bethany-07	Teamster G2 Hwy ED 6-8cy, Water<7	164	10	Stockton to BCNA	128
BCNA-Bethany-07 Total					
BCNA-Bethany-08	Laborer G2 General	452	10	Stockton to BCNA	128
BCNA-Bethany-08	OPERATING ENGINEER FOREMAN	113	10	Stockton to BCNA	128
BCNA-Bethany-08	Teamster G3 Boom Truck	113	10	Stockton to BCNA	128
BCNA-Bethany-08	Iron Worker-Rigger	113	10	Stockton to BCNA	128
BCNA-Bethany-08	Operator G3 BH-Loader>3/4cy	113	10	Stockton to BCNA	128
BCNA-Bethany-08	Operator G4a Boom truck<15 ton	113	10	Stockton to BCNA	128
BCNA-Bethany-08 Total					
BCNA-Bethany-09	Laborer G2 General	623	10	Sacramento to BCNA	48
BCNA-Bethany-09	Carpenter Foreman	11	10	Sacramento to BCNA	24
BCNA-Bethany-09	Carpenter Apprentice	11	10	Sacramento to BCNA	24
BCNA-Bethany-09	Electrical Foreman	6	10	Sacramento to BCNA	24
BCNA-Bethany-09	Electrician Journeyman	23	10	Sacramento to BCNA	24
BCNA-Bethany-09	Iron Worker Journeyman Rebar/Stru	23	10	Sacramento to BCNA	24
BCNA-Bethany-09	Teamster G3 Boom Truck	6	10	Sacramento to BCNA	24
BCNA-Bethany-09	Carpenter Journeyman	23	10	Sacramento to BCNA	24
BCNA-Bethany-09	Operator G3a Cranes 45 t and under	11	10	Sacramento to BCNA	24
BCNA-Bethany-09	Early Works - Roads - Admin Salaries	600	10	Sacramento to BCNA	24
BCNA-Bethany-09	Early Works - Roads - Engineering Sal	600	10	Sacramento to BCNA	24
BCNA-Bethany-09	Early Works - Roads - Management S	600	10	Sacramento to BCNA	24
BCNA-Bethany-09	Early Works - Roads - Tech & Clerk Sa	600	10	Sacramento to BCNA	24
BCNA-Bethany-09 Total					
BCNA-Bethany-10	Laborer G2 General	101	10	Stockton to BCNA	32
BCNA-Bethany-10	OPERATING ENGINEER FOREMAN	25	10	Stockton to BCNA	32
BCNA-Bethany-10	Operator G3 BH-Loader>3/4cy	25	10	Stockton to BCNA	32
BCNA-Bethany-10	Operator G4 Grade Check	25	10	Stockton to BCNA	32

BCNA-Bethany-10	Operator G5 Asphalt Roller	51	10	Stockton to BCNA	32
BCNA-Bethany-10	Operator G5 Paver	25	10	Stockton to BCNA	32
BCNA-Bethany-10	Teamster G2 Hwy ED 6-8cy, Water<7	13	10	Stockton to BCNA	32

## Marine Inventory for Bethany Complex North Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



**Helicopter Inventory for Bethany Complex North Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Bethany Complex North Access Road  
Option B2

Code	Stripping or Grading		# day	Stripping or Grading		Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
BCNA-Bethany-01	0	38	0	0	63748	1678	0	0	0	0	0	0	0	0	0	0	0
BCNA-Bethany-02	0	132	0	0	0	0	330002	2500	0	0	0	0	0	0	0	0	0
BCNA-Bethany-05	0	191	0	0	0	0	65249	342	0	0	0	0	0	0	0	0	0
BCNA-Bethany-07	0	192	0	0	0	0	0	0	0	0	0	0	0	0	1660680	8649	8649
BCNA-Bethany-10	0	3	0	0	0	0	0	0	0	0	0	0	0	0	108405	36135	36135

**Demolition Assumptions for Bethany Complex North Access Road**  
**Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Bethany Complex South Access Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	BCSA-Bethany-01	1/5/2026	3/31/2026	62	5	10
02 - Contractor Site Management & Facilities	BCSA-Bethany-02	1/5/2026	6/9/2027	373	5	10
03 - Mobilization	BCSA-Bethany-03	1/5/2026	2/13/2026	30	5	10
04 - Embankment	BCSA-Bethany-04	1/26/2026	2/17/2026	17	5	10
05 - Culvert Pipe	BCSA-Bethany-05	2/18/2026	4/1/2026	31	5	10
06 - Drainage	BCSA-Bethany-06	3/3/2026	4/10/2026	29	5	10
07 - Bridge Work	BCSA-Bethany-07	4/1/2026	8/3/2026	89	5	10
08 - Road Base	BCSA-Bethany-08	4/13/2026	8/13/2026	89	5	10
09 - Initial Overlay	BCSA-Bethany-09	5/22/2026	8/17/2026	62	5	10
10 - Signs and Signals	BCSA-Bethany-10	6/25/2026	8/18/2026	39	5	10
11 - Road Maintenance	BCSA-Bethany-11	3/17/2027	4/4/2030	797	5	10
12 - Intermediate Overlay	BCSA-Bethany-12	4/5/2030	7/15/2030	72	5	10
13 - Final Overlay	BCSA-Bethany-13	12/24/2037	6/16/2038	125	5	10

**Total Site Acres**

**35**



**Offroad Equipment (Fossil Fuel) Inventory for Bethany Complex South Access Road  
Option B2**

Code	Equipment Name	General Equipment	Hours	# day	Hours/day	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
BCSA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	296	62	5	Diesel or Hybrid	179	0.43		
BCSA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	589	62	10	Diesel or Hybrid	179	0.43		
BCSA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	148	62	2	Diesel	384	0.38		
BCSA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	295	62	5	Diesel	384	0.38		
BCSA-Bethany-02	Air Compressor 185 cfm	Air Compressor	43	373	0	Diesel - Tier 4	49	0.48		
BCSA-Bethany-02	Boom Truck, 12.5 Tn Boom	Crane	21	373	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-02	Fork Lift, 8000LB, RT, 4x4	Forklifts	1400	373	4	Diesel	142	0.2		
BCSA-Bethany-02	Fork Lift, 8000LB, RT, 4x4	Forklifts	10001	373	27	Diesel	142	0.2		
BCSA-Bethany-02	Grove RT Crane 30T, 160HP	Crane	560	373	2	Diesel	160	0.29		
BCSA-Bethany-02	Grove RT Crane 30T, 160HP	Crane	4000	373	11	Diesel	160	0.29		
BCSA-Bethany-04	CAT 14 M	Grader	80	17	5	Diesel	274	0.41		
BCSA-Bethany-04	CAT 825, Roller	Rollers	160	17	9	Diesel	315	0.38		
BCSA-Bethany-04	CAT D6 LGPDozer w winch	Crawler Tractor	160	17	9	Diesel or Hybrid	179	0.43		
BCSA-Bethany-04	Light Plant, 4 lite, 1000w, Tower/Mast	Generator	640	17	38	Diesel	12	0.74		
BCSA-Bethany-04	Water Pump, 4" Diesel	Pumps	19	17	1	Diesel	10	0.74		
BCSA-Bethany-05	Air Compressor 375 cfm	Air Compressor	30	31	1	Diesel - Tier 4	122	0.48		
BCSA-Bethany-05	Air Compressor 375 cfm	Air Compressor	6	31	0	Diesel - Tier 4	122	0.48		
BCSA-Bethany-05	CAT LOADER/HOE 416 E	Rubber Tired Loaders	11	31	0	Diesel	78	0.36		
BCSA-Bethany-05	CAT LOADER/HOE 416 E	Rubber Tired Loaders	61	31	2	Diesel	78	0.36		
BCSA-Bethany-05	Compactor, Plate, 22"w x 35"	Plate Compactors	30	31	1	Diesel	8.5	0.43		
BCSA-Bethany-05	Compactor, Plate, 22"w x 35"	Plate Compactors	6	31	0	Diesel	8.5	0.43		
BCSA-Bethany-06	CAT LOADER/HOE 416 E	Rubber Tired Loaders	70	29	2	Diesel	78	0.36		
BCSA-Bethany-06	CAT LOADER/HOE 416 E	Rubber Tired Loaders	13	29	0	Diesel	78	0.36		
BCSA-Bethany-06	Compactor, Trench Roller, Vib 32"w	Rollers	26	29	1	Diesel	20	0.38		
BCSA-Bethany-06	Compactor, Trench Roller, Vib 32"w	Rollers	141	29	5	Diesel	20	0.38		
BCSA-Bethany-08	CAT 14 M	Grader	74	89	1	Diesel	274	0.41		
BCSA-Bethany-08	CAT 14 M	Grader	286	89	3	Diesel	274	0.41		
BCSA-Bethany-08	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	74	89	1	Diesel	156	0.38		
BCSA-Bethany-08	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	286	89	3	Diesel	156	0.38		
BCSA-Bethany-08	Water Pump, 4" Diesel	Pumps	74	89	1	Diesel	10	0.74		
BCSA-Bethany-08	Water Pump, 4" Diesel	Pumps	286	89	3	Diesel	10	0.74		
BCSA-Bethany-09	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	237	62	4	Diesel or Hybrid	224	0.42		
BCSA-Bethany-09	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	18	62	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-09	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	237	62	4	Diesel or Hybrid	133	0.38		
BCSA-Bethany-09	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	18	62	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-09	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	237	62	4	Diesel or Hybrid	137	0.38		
BCSA-Bethany-09	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	18	62	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-09	CAT LOADER/HOE 416 E	Rubber Tired Loaders	237	62	4	Diesel	78	0.36		
BCSA-Bethany-09	CAT LOADER/HOE 416 E	Rubber Tired Loaders	18	62	0	Diesel	78	0.36		
BCSA-Bethany-10	Boom Truck, 12.5 Tn Boom	Crane	8	39	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-10	Boom Truck, 12.5 Tn Boom	Crane	10	39	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-10	CAT LOADER/HOE 416 E	Rubber Tired Loaders	8	39	0	Diesel	78	0.36		
BCSA-Bethany-10	CAT LOADER/HOE 416 E	Rubber Tired Loaders	10	39	0	Diesel	78	0.36		
BCSA-Bethany-11	Air Compressor 185 cfm	Air Compressor	2	797	0	Diesel - Tier 4	49	0.48		
BCSA-Bethany-11	Boom Truck, 12.5 Tn Boom	Crane	1	797	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-12	Air Compressor 185 cfm	Air Compressor	11	72	0	Diesel - Tier 4	49	0.48		
BCSA-Bethany-12	Boom Truck, 12.5 Tn Boom	Crane	6	72	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	25	72	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	24	72	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	17	72	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	149	72	2	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	44	72	1	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	30	72	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	25	72	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	24	72	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	17	72	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	149	72	2	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	44	72	1	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	30	72	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	25	72	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	24	72	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	17	72	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	149	72	2	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	44	72	1	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	30	72	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	25	72	0	Diesel	78	0.36		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	24	72	0	Diesel	78	0.36		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	17	72	0	Diesel	78	0.36		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	149	72	2	Diesel	78	0.36		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	44	72	1	Diesel	78	0.36		
BCSA-Bethany-12	CAT LOADER/HOE 416 E	Rubber Tired Loaders	78	30	0	Diesel	78	0.36		
BCSA-Bethany-13	Air Compressor 185 cfm	Air Compressor	21	125	0	Diesel - Tier 4	49	0.48		
BCSA-Bethany-13	Boom Truck, 12.5 Tn Boom	Crane	11	125	0	Diesel or Hybrid	100	0.29		
BCSA-Bethany-13	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	24	125	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-13	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	17	125	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-13	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	149	125	1	Diesel or Hybrid	224	0.42		
BCSA-Bethany-13	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	30	125	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-13	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	44	125	0	Diesel or Hybrid	224	0.42		
BCSA-Bethany-13	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	24	125	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-13	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	17	125	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-13	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	149	125	1	Diesel or Hybrid	133	0.38		
BCSA-Bethany-13	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	30	125	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-13	Asphalt Rollier, 17.6 Tn Pneumatic,133hp	Rollers	44	125	0	Diesel or Hybrid	133	0.38		
BCSA-Bethany-13	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	24	125	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-13	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	17	125	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-13	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	149	125	1	Diesel or Hybrid	137	0.38		
BCSA-Bethany-13	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	30	125	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-13	Asphalt Rollier, 2 Drum 12tn, 137hp	Rollers	44	125	0	Diesel or Hybrid	137	0.38		
BCSA-Bethany-13	CAT LOADER/HOE 416 E	Rubber Tired Loaders	24	125	0	Diesel	78	0.36		
BCSA-Bethany-13	CAT LOADER/HOE 416 E	Rubber Tired Loaders	17	125	0	Diesel	78	0.36		
BCSA-Bethany-13	CAT LOADER/HOE 416 E	Rubber Tired Loaders	149	125	1	Diesel	78	0.36		
BCSA-Bethany-13	CAT LOADER/HOE 416 E	Rubber Tired Loaders	30	125	0	Diesel	78	0.36		
BCSA-Bethany-13	CAT LOADER/HOE 416 E	Rubber Tired Loaders	44	125	0	Diesel	78	0.36		

Offroad Equipment (Electric) Inventory for Bethany Complex South Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BCSA-Bethany-02	400A, Electric Welder	85.34	373	14.4	3
BCSA-Bethany-11	400A, Electric Welder	1.88	797	14.4	0
BCSA-Bethany-12	400A, Electric Welder	11.29	72	14.4	2
BCSA-Bethany-13	400A, Electric Welder	21	125	14.4	2

Vehicle Inventory for Bethany Complex South Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
BCSA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	62	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-02	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	373	6	1	8	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-02	Pickup, 1/2T	General Materials from Sacramento	373	2	1	2	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-02	40 Ton Tractor & Trailer	General Materials from Sacramento	373	11	1	14	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	17	1460	1	2085	123	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-04	Pickup, 1/2T	General Materials from Stockton	17	1	1	1	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	31	6	1	6	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-05	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	31	5	1	7	0	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-05	Pickup, 1/2T	General Materials from Stockton	31	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-05	40 Ton Tractor & Trailer	General Materials from Stockton	31	3	1	3	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	29	4	1	4	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-06	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	29	16	1	23	1	Bethany Complex South Access from Stockton	21	42	Diesel	
BCSA-Bethany-06	Pickup, 1/2T	General Materials from Stockton	29	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	89	14	1	13	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-08	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	89	3014	1	4305	48	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-08	Pickup, 1/2T	General Materials from Stockton	89	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-09	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	62	1082	1	1546	25	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-09	Pickup, 1/2T	General Materials from Stockton	62	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	39	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-10	Pickup, 1/2T	General Materials from Stockton	39	2	1	2	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-10	40 Ton Tractor & Trailer	General Materials from Stockton	39	0	1	0	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-11	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	797	3	1	4	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-11	Pickup, 1/2T	General Materials from Sacramento	797	1	1	1	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-11	40 Ton Tractor & Trailer	General Materials from Sacramento	797	1	1	1	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-12	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	72	3	1	4	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-12	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	72	1072	1	1531	21	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-12	Pickup, 1/2T	General Materials from Stockton	72	6	1	6	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-12	Pickup, 1/2T	General Materials from Sacramento	72	1	1	1	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-12	40 Ton Tractor & Trailer	General Materials from Sacramento	72	2	1	2	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-13	20 Ton Flatbed Truck/End Dump	General Materials from Sacramento	125	3	1	4	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-13	20 Ton Flatbed Truck/End Dump	sphalt, Hot Mix Delivered from Verna	125	978	1	1397	11	Bethany Complex South Access from Vernalis	21	42	Diesel	
BCSA-Bethany-13	Pickup, 1/2T	General Materials from Stockton	125	5	1	5	0	Bethany Complex South Access from Stockton	32	64	Diesel	
BCSA-Bethany-13	Pickup, 1/2T	General Materials from Sacramento	125	1	1	1	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
BCSA-Bethany-13	40 Ton Tractor & Trailer	General Materials from Sacramento	125	3	1	4	0	Bethany Complex South Access from Sacramento	24	48	Diesel	
Vehicle Use on Ungaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
BCSA-Bethany-01	CAT 730 30T Articulated End Dumbo	Dumpers	62	1330	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	6652	Diesel or Hybrid	
BCSA-Bethany-01	Truck, End Dump, 10-13cy, Hwy	Dumpers	62	884	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	4419	Diesel	
BCSA-Bethany-02	Truck, Flatbed, 4T, Hwy	Off-Highway Truck	373	11401	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	57006	Diesel	
BCSA-Bethany-04	Cat 10wheel w/Cat 770, 511HP	Dumpers	17	80	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	400	Diesel	
BCSA-Bethany-06	Truck, End Dumbo, 10-13cy, Hwy	Dumpers	29	167	not applicable	not applicable	not applicable	on-site: assume 5 miles/h	not applicable	833	Diesel	

**Employees Required for Bethany Complex South Access Road  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
BCSA-Bethany-01	OPERATING ENGINEER FOREMAN	221	10	Stockton to BCSA	64
BCSA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	443	10	Stockton to BCSA	64
BCSA-Bethany-01	Operator G4 Dozer & Push Cat	886	10	Stockton to BCSA	64
BCSA-Bethany-01	Teamster G2 Hwy ED 6-8cy, Water<7mgal	884	10	Stockton to BCSA	32
BCSA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	1330	10	Stockton to BCSA	64
BCSA-Bethany-01 Total					
BCSA-Bethany-02	Laborer G2 General	45771	10	Sacramento to BCSA	96
BCSA-Bethany-02	Carpenter Foreman	85	10	Sacramento to BCSA	48
BCSA-Bethany-02	Carpenter Apprentice	85	10	Sacramento to BCSA	48
BCSA-Bethany-02	Electrical Foreman	43	10	Sacramento to BCSA	48
BCSA-Bethany-02	Electrician Journeyman	171	10	Sacramento to BCSA	48
BCSA-Bethany-02	Iron Worker Journeyman Rebar/S	171	10	Sacramento to BCSA	48
BCSA-Bethany-02	Teamster G3 Boom Truck	43	10	Sacramento to BCSA	48
BCSA-Bethany-02	Carpenter Journeyman	171	10	Sacramento to BCSA	48
BCSA-Bethany-02	Operator G3a Cranes 45 t and un	4646	10	Sacramento to BCSA	96
BCSA-Bethany-02	Teamster G1 Hwy ED<6cy, Flatbed	11401	10	Sacramento to BCSA	48
BCSA-Bethany-02	Early Works - Roads - Admin Salar	11400	10	Sacramento to BCSA	48
BCSA-Bethany-02	Early Works - Roads - Engineering	22800	10	Sacramento to BCSA	48
BCSA-Bethany-02	Early Works - Roads - Management S	34200	10	Sacramento to BCSA	48
BCSA-Bethany-02	Early Works - Roads - Tech & Clerk S	45600	10	Sacramento to BCSA	48
BCSA-Bethany-02 Total					
BCSA-Bethany-04	Laborer G2 General	19	10	Stockton to BCSA	32
BCSA-Bethany-04	OPERATING ENGINEER FOREMAN	160	10	Stockton to BCSA	32
BCSA-Bethany-04	Operator G2 Finish Blade	80	10	Stockton to BCSA	32
BCSA-Bethany-04	Operator G4 Dozer & Push Cat	160	10	Stockton to BCSA	32
BCSA-Bethany-04	Operator G5 Compactor w-blade	160	10	Stockton to BCSA	32
BCSA-Bethany-04	Teamster G3 ED 8-24cy, Water>7mgal	80	10	Stockton to BCSA	32
BCSA-Bethany-04 Total					
BCSA-Bethany-05	Laborer Foreman	36	10	Stockton to BCSA	64
BCSA-Bethany-05	Laborer G1 Pipe layers	144	10	Stockton to BCSA	64
BCSA-Bethany-05	Operator G3 BH-Loader>3/4cy	72	10	Stockton to BCSA	64
BCSA-Bethany-05	Teamster G1 Hwy ED<6cy, Flatbed	54	10	Stockton to BCSA	64
BCSA-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	18	10	Stockton to BCSA	64
BCSA-Bethany-05 Total					
BCSA-Bethany-06	Operator G4 Loader <4.1cy	83	10	Stockton to BCSA	64
BCSA-Bethany-06	Laborer G1 Pipe layers	333	10	Stockton to BCSA	64
BCSA-Bethany-06	Laborer G1 Power Tamper	167	10	Stockton to BCSA	64
BCSA-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	167	10	Stockton to BCSA	64
BCSA-Bethany-06 Total					
BCSA-Bethany-08	OPERATING ENGINEER FOREMAN	360	10	Stockton to BCSA	64
BCSA-Bethany-08	Laborer G3 Flagman	719	10	Stockton to BCSA	64
BCSA-Bethany-08	Operator G2 Finish Blade	360	10	Stockton to BCSA	64
BCSA-Bethany-08	Operator G4 Grade Check	360	10	Stockton to BCSA	64
BCSA-Bethany-08	Operator G7 Roller, Compactor	360	10	Stockton to BCSA	64
BCSA-Bethany-08	Operator G8 Generator	72	10	Stockton to BCSA	64
BCSA-Bethany-08	Teamster G2 Hwy ED 6-8cy, Water<7	360	10	Stockton to BCSA	64
BCSA-Bethany-08 Total					
BCSA-Bethany-09	Laborer G2 General	1018	10	Stockton to BCSA	64
BCSA-Bethany-09	OPERATING ENGINEER FOREMAN	254	10	Stockton to BCSA	64
BCSA-Bethany-09	Operator G3 BH-Loader>3/4cy	254	10	Stockton to BCSA	64
BCSA-Bethany-09	Operator G4 Grade Check	254	10	Stockton to BCSA	64
BCSA-Bethany-09	Operator G5 Asphalt Roller	509	10	Stockton to BCSA	64
BCSA-Bethany-09	Operator G5 Paver	254	10	Stockton to BCSA	64
BCSA-Bethany-09	Teamster G2 Hwy ED 6-8cy, Water<7	127	10	Stockton to BCSA	64
BCSA-Bethany-09 Total					
BCSA-Bethany-10	Laborer G2 General	72	10	Stockton to BCSA	64
BCSA-Bethany-10	OPERATING ENGINEER FOREMAN	18	10	Stockton to BCSA	64
BCSA-Bethany-10	Teamster G3 Boom Truck	18	10	Stockton to BCSA	64
BCSA-Bethany-10	Iron Worker-Rigger	18	10	Stockton to BCSA	64
BCSA-Bethany-10	Operator G3 BH-Loader>3/4cy	18	10	Stockton to BCSA	64
BCSA-Bethany-10	Operator G4a Boom truck<15 ton	18	10	Stockton to BCSA	64
BCSA-Bethany-10 Total					
BCSA-Bethany-11	Laborer G2 General	104	10	Sacramento to BCSA	48
BCSA-Bethany-11	Carpenter Foreman	2	10	Sacramento to BCSA	24

BCSA-Bethany-11	Carpenter Apprentice	2	10	Sacramento to BCSA	24
BCSA-Bethany-11	Electrical Foreman	1	10	Sacramento to BCSA	24
BCSA-Bethany-11	Electrician Journeyman	4	10	Sacramento to BCSA	24
BCSA-Bethany-11	Iron Worker Journeyman Rebar/Stru	4	10	Sacramento to BCSA	24
BCSA-Bethany-11	Teamster G3 Boom Truck	1	10	Sacramento to BCSA	24
BCSA-Bethany-11	Carpenter Journeyman	4	10	Sacramento to BCSA	24
BCSA-Bethany-11	Operator G3a Cranes 45 t and under	2	10	Sacramento to BCSA	24
BCSA-Bethany-11	Early Works - Roads - Admin Salaries	100	10	Sacramento to BCSA	24
BCSA-Bethany-11	Early Works - Roads - Engineering Sal	100	10	Sacramento to BCSA	24
BCSA-Bethany-11	Early Works - Roads - Management S	100	10	Sacramento to BCSA	24
BCSA-Bethany-11	Early Works - Roads - Tech & Clerk S	100	10	Sacramento to BCSA	24
BCSA-Bethany-11 Total					
BCSA-Bethany-12	Laborer G2 General	1159	10	Stockton to BCSA	192
BCSA-Bethany-12	Laborer G2 General	623	10	Sacramento to BCSA	48
BCSA-Bethany-12	Carpenter Foreman	11	10	Sacramento to BCSA	24
BCSA-Bethany-12	Carpenter Apprentice	11	10	Sacramento to BCSA	24
BCSA-Bethany-12	Electrical Foreman	6	10	Sacramento to BCSA	24
BCSA-Bethany-12	Electrician Journeyman	23	10	Sacramento to BCSA	24
BCSA-Bethany-12	Iron Worker Journeyman Rebar/Stru	23	10	Sacramento to BCSA	24
BCSA-Bethany-12	OPERATING ENGINEER FOREMAN	290	10	Stockton to BCSA	192
BCSA-Bethany-12	Teamster G3 Boom Truck	6	10	Sacramento to BCSA	24
BCSA-Bethany-12	Carpenter Journeyman	23	10	Sacramento to BCSA	24
BCSA-Bethany-12	Operator G3 BH-Loader>3/4cy	290	10	Stockton to BCSA	192
BCSA-Bethany-12	Operator G3a Cranes 45 t and under	11	10	Sacramento to BCSA	24
BCSA-Bethany-12	Operator G4 Grade Check	290	10	Stockton to BCSA	192
BCSA-Bethany-12	Operator G5 Asphalt Roller	580	10	Stockton to BCSA	192
BCSA-Bethany-12	Operator G5 Paver	290	10	Stockton to BCSA	192
BCSA-Bethany-12	Teamster G2 Hwy ED 6-8cy, Water<7	145	10	Stockton to BCSA	192
BCSA-Bethany-12	Early Works - Roads - Admin Salaries	600	10	Sacramento to BCSA	24
BCSA-Bethany-12	Early Works - Roads - Engineering Sal	600	10	Sacramento to BCSA	24
BCSA-Bethany-12	Early Works - Roads - Management S	600	10	Sacramento to BCSA	24
BCSA-Bethany-12	Early Works - Roads - Tech & Clerk S	600	10	Sacramento to BCSA	24
BCSA-Bethany-12 Total					
BCSA-Bethany-13	Laborer G2 General	1058	10	Stockton to BCSA	160
BCSA-Bethany-13	Laborer G2 General	4043	10	Sacramento to BCSA	48
BCSA-Bethany-13	Carpenter Foreman	21	10	Sacramento to BCSA	24
BCSA-Bethany-13	Carpenter Apprentice	21	10	Sacramento to BCSA	24
BCSA-Bethany-13	Electrical Foreman	11	10	Sacramento to BCSA	24
BCSA-Bethany-13	Electrician Journeyman	43	10	Sacramento to BCSA	24.0
BCSA-Bethany-13	Iron Worker Journeyman Rebar/Stru	43	10	Sacramento to BCSA	24
BCSA-Bethany-13	OPERATING ENGINEER FOREMAN	264	10	Stockton to BCSA	160
BCSA-Bethany-13	Teamster G3 Boom Truck	11	10	Sacramento to BCSA	24
BCSA-Bethany-13	Carpenter Journeyman	43	10	Sacramento to BCSA	24
BCSA-Bethany-13	Operator G3 BH-Loader>3/4cy	264	10	Stockton to BCSA	160
BCSA-Bethany-13	Operator G3a Cranes 45 t and under	21	10	Sacramento to BCSA	24
BCSA-Bethany-13	Operator G4 Grade Check	264	10	Stockton to BCSA	160
BCSA-Bethany-13	Operator G5 Asphalt Roller	529	10	Stockton to BCSA	160
BCSA-Bethany-13	Operator G5 Paver	264	10	Stockton to BCSA	160
BCSA-Bethany-13	Teamster G2 Hwy ED 6-8cy, Water<7	132	10	Stockton to BCSA	160
BCSA-Bethany-13	Early Works - Roads - Admin Salaries	4000	10	Sacramento to BCSA	24
BCSA-Bethany-13	Early Works - Roads - Engineering Sal	4000	10	Sacramento to BCSA	24
BCSA-Bethany-13	Early Works - Roads - Management S	4000	10	Sacramento to BCSA	24
BCSA-Bethany-13	Early Works - Roads - Tech & Clerk S	4000	10	Sacramento to BCSA	24

## Marine Inventory for Bethany Complex South Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



**Helicopter Inventory for Bethany Complex South Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED



Earthmoving/Paving Assumptions for Bethany Complex South Access Road  
Option B2

Code	Stripping or Grading		# day	Stripping or Grading		Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
BCSA-Bethany-01	0	62	0	0	56145	906	0	0	0	0	0	0	0	0	0	0	0
BCSA-Bethany-04	0	17	0	0	0	0	40027	2355	0	0	0	0	0	0	0	0	0
BCSA-Bethany-08	0	89	0	0	0	0	47392	532	0	0	0	0	0	0	0	0	0
BCSA-Bethany-09	0	62	0	0	0	0	0	0	0	0	0	0	0	0	1251180	20180	0
BCSA-Bethany-12	0	72	0	0	0	0	0	0	0	0	0	0	0	0	1238805	17206	0
BCSA-Bethany-13	0	125	0	0	0	0	0	0	0	0	0	0	0	0	1130310	9042	0

## Demolition Assumptions for Bethany Complex South Access Road Option B2

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Bethany Complex Kelso Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	KRA-Bethany-01	8/19/2026	8/24/2026	4	4	10
02 - Embankment	KRA-Bethany-02	8/25/2026	8/31/2026	5	5	10
03 - Culvert Pipe	KRA-Bethany-03	9/1/2026	9/1/2026	1	1	10
04 - Drainage	KRA-Bethany-04	9/2/2026	9/11/2026	8	5	10
05 - Road Base	KRA-Bethany-05	9/14/2026	9/23/2026	8	5	10
06 - Initial Overlay	KRA-Bethany-06	9/24/2026	10/2/2026	7	5	10
07 - Signs and Signals	KRA-Bethany-07	10/5/2026	10/5/2026	1	1	10

**Total Site Acres**

**9**

Offroad Equipment (Fossil Fuel) Inventory for Bethany Complex Kelso Road  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
KRA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	77.32	4	19	Diesel or Hybrid	179	0.43		
KRA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	38.66	4	10	Diesel	384	0.38		
KRA-Bethany-02	CAT 14 M	Grader	20.88	5	4	Diesel	274	0.41		
KRA-Bethany-02	CAT D6 LGPDozer w winch	Crawler Tractor	41.76	5	8	Diesel or Hybrid	179	0.43		
KRA-Bethany-02	Water Pump, 4" Diesel	Pumps	5.01	5	1	Diesel	10	0.74		
KRA-Bethany-02	CAT 825, Roller	Rollers	41.76	5	8	Diesel	315	0.38		
KRA-Bethany-03	CAT LOADER/HOE 416 E	Rubber Tired Loaders	15.89	1	16	Diesel	78	0.36		
KRA-Bethany-03	Air Compressor 375 cfm	Air Compressor	7.94	1	8	Diesel - Tier 4	122	0.48		
KRA-Bethany-03	Compactor, Plate, 22" w x 35"	Plate Compactors	7.94	1	8	Diesel	8.5	0.43		
KRA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	18.35	8	2	Diesel	78	0.36		
KRA-Bethany-04	Compactor, Trench Roller, Vib 32" w CAT	Rollers	36.7	8	5	Diesel	20	0.38		
KRA-Bethany-05	14 M	Grader	74.56	8	9	Diesel	274	0.41		
KRA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP Water	Rollers	74.56	8	9	Diesel	156	0.38		
KRA-Bethany-05	Pump, 4" Diesel	Pumps	74.56	8	9	Diesel	10	0.74		
KRA-Bethany-06	CAT LOADER/HOE 416 E	Rubber Tired Loaders	61.68	7	9	Diesel	78	0.36		
KRA-Bethany-06	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	61.68	7	9	Diesel or Hybrid	224	0.42		
KRA-Bethany-06	Asphalt Roller, 17.6 Tn Pneumatic, 133hp	Rollers	61.68	7	9	Diesel or Hybrid	133	0.38		
KRA-Bethany-06	Asphalt Roller, 2 Drum 12tn, 137hp	Rollers	61.68	7	9	Diesel or Hybrid	137	0.38		
KRA-Bethany-07	Boom Truck, 12.5 Tn Boom	Crane	4	1	4	Diesel or Hybrid	100	0.29		
KRA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	4	1	4	Diesel	78	0.36		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Bethany Complex Kelso Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
KRA-Bethany-02	Light Plant, 4 lite, 1000w	167	5		

Vehicle Inventory for Bethany Complex Kelso Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
KRA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	4	1	1.1	1	0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-02	Pickup, 1/2T	General Materials from Stockton	5	1	1.1	1	0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-02	20 Ton Flatbed Truck/End Dump	Run Gravel 3 Inch Minus from Verna	5	381	0.7	544	109	Kelso Road Access from Vernalis	21	42	Diesel	
KRA-Bethany-03	40 Ton Tractor & Trailer	General Materials from Stockton	1	1	1.1	1	1.0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-03	Pickup, 1/2T	General Materials from Stockton	1	1	1.1	1	1	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-03	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	1	1	0.7	2	2.0	Kelso Road Access from Vernalis	21	42	Diesel	
KRA-Bethany-04	Pickup, 1/2T	General Materials from Stockton	8	1	1.1	1	0.1	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-04	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	8	4	0.7	5	0.6	Kelso Road Access from Vernalis	21	42	Diesel	
KRA-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	8	1	1.1	1	0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-05	Pickup, 1/2T	General Materials from Stockton	8	1	1.1	1	0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-05	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	8	664	0.7	949	119	Kelso Road Access from Vernalis	21	42	Diesel	
KRA-Bethany-06	Pickup, 1/2T	General Materials from Stockton	7	1	1.1	1	0.1	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-06	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	7	264	0.7	377	54	Kelso Road Access from Vernalis	21	42	Diesel	
KRA-Bethany-07	40 Ton Tractor & Trailer	General Materials from Stockton	1	0	1.1	0	0	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-07	Pickup, 1/2T	General Materials from Stockton	1	1	1.1	1	1	Kelso Road Access from Stockton	32	64	Diesel	
KRA-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1	1	1.1	1	1	Kelso Road Access from Stockton	32	64	Diesel	

Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site										Miles On-Site		
KRA-Bethany-01	CAT 730 30T, Articulated End Dump	Dumpers	4	193	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	967	Diesel or Hybrid	
KRA-Bethany-02	Cat 10m3 w/Cat 770 1114P	Dumpers	5	21	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	104	Diesel	
KRA-Bethany-04	Truck, End Dumps, 10-13cv, Hwy	Dumpers	8	37	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	184	Diesel	

**Employees Required for Bethany Complex Kelso Road  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
KRA-Bethany-01	OPERATING ENGINEER FOREMAN	19.33	10	Stockton to KRA	32
KRA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	38.66	10	Stockton to KRA	32
KRA-Bethany-01	Operator G4 Dozer & Push Cat	77.32	10	Stockton to KRA	32
KRA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	193.31	10	Stockton to KRA	32
KRA-Bethany-01 Total					
KRA-Bethany-02	Laborer G2 General	5.01	10	Stockton to KRA	32
KRA-Bethany-02	OPERATING ENGINEER FOREMAN	41.76	10	Stockton to KRA	32
KRA-Bethany-02	Operator G2 Finish Blade	20.88	10	Stockton to KRA	32
KRA-Bethany-02	Operator G4 Dozer & Push Cat	41.76	10	Stockton to KRA	32
KRA-Bethany-02	Operator G5 Compactor w-blade	41.76	10	Stockton to KRA	32
KRA-Bethany-02	Teamster G3 ED 8-24cy, Water>7mgal	20.88	10	Stockton to KRA	32
KRA-Bethany-02 Total					
KRA-Bethany-03	Laborer G1 Pipe layers	31.78	10	Stockton to KRA	32
KRA-Bethany-03	Operator G3 BH-Loader>3/4cy	15.89	10	Stockton to KRA	32
KRA-Bethany-03	Teamster G1 Hwy ED<6cy, Flatber	11.92	10	Stockton to KRA	32
KRA-Bethany-03	Teamster G2 Hwy ED 6-8cy, Wate	3.97	10	Stockton to KRA	32
KRA-Bethany-03	Laborer Foreman	7.94	10	Stockton to KRA	32
KRA-Bethany-03 Total					
KRA-Bethany-04	Laborer G1 Pipe layers	73.4	10	Stockton to KRA	32
KRA-Bethany-04	Laborer G1 Power Tamper	36.7	10	Stockton to KRA	32
KRA-Bethany-04	Teamster G2 Hwy ED 6-8cy, Water<7	36.7	10	Stockton to KRA	32
KRA-Bethany-04	Operator G4 Loader <4.1cy	18.35	10	Stockton to KRA	32
KRA-Bethany-04 Total					
KRA-Bethany-05	Laborer G3 Flagman	149.13	10	Stockton to KRA	32
KRA-Bethany-05	OPERATING ENGINEER FOREMAN	74.56	10	Stockton to KRA	32
KRA-Bethany-05	Operator G2 Finish Blade	74.56	10	Stockton to KRA	32
KRA-Bethany-05	Operator G4 Grade Check	74.56	10	Stockton to KRA	32
KRA-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	74.56	10	Stockton to KRA	32
KRA-Bethany-05	Operator G7 Roller, Compactor	74.56	10	Stockton to KRA	32
KRA-Bethany-05	Operator G8 Generator	14.91	10	Stockton to KRA	32
KRA-Bethany-05 Total					
KRA-Bethany-06	Laborer G2 General	246.73	10	Stockton to KRA	32
KRA-Bethany-06	OPERATING ENGINEER FOREMAN	61.68	10	Stockton to KRA	32
KRA-Bethany-06	Operator G3 BH-Loader>3/4cy	61.68	10	Stockton to KRA	32
KRA-Bethany-06	Operator G4 Grade Check	61.68	10	Stockton to KRA	32
KRA-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	30.84	10	Stockton to KRA	32
KRA-Bethany-06	Operator G5 Asphalt Roller	123.36	10	Stockton to KRA	32
KRA-Bethany-06	Operator G5 Paver	61.68	10	Stockton to KRA	32
KRA-Bethany-06 Total					
KRA-Bethany-07	Laborer G2 General	16	10	Stockton to KRA	32
KRA-Bethany-07	OPERATING ENGINEER FOREMAN	4	10	Stockton to KRA	32
KRA-Bethany-07	Operator G3 BH-Loader>3/4cy	4	10	Stockton to KRA	32
KRA-Bethany-07	Teamster G3 Boom Truck	4	10	Stockton to KRA	32
KRA-Bethany-07	Iron Worker-Rigger	4	10	Stockton to KRA	32
KRA-Bethany-07	Operator G4a Boom truck<15 ton	4	10	Stockton to KRA	32

## Marine Inventory for Bethany Complex Kelso Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									





**Helicopter Inventory for Bethany Complex Kelso Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

**Option B2**

Code	Stripping or Grading	# day	Stripping or Grading	Cut (cy)	Cut (cu/dav)	Fill (cy)	Fill (cu/dav)	Dredge (cy)	Dredge (cu/dav)	Paving (sf)	Paving (sf/dav)
KRA-Bethany-01	0	4	0		6959	1740	0	0	0	0	0
KRA-Bethany-02	0	5	0				10439	2088	0	0	0
KRA-Bethany-05	0	8	0	0	0	0	10439	1305	0	0	0
KRA-Bethany-06	0	7	0	0	0	0		0	0	305325	43618

**Demolition Assumptions for Bethany Complex Kelso Road  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Bethany Reservoir Discharge Structure Access Road  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Roadway Excavation	BRA-Bethany-01	4/1/2026	5/20/2026	36	5	10
02 - Culvert Pipe	BRA-Bethany-02	5/21/2026	7/3/2026	32	5	10
03 - Embankment	BRA-Bethany-03	5/21/2026	7/15/2026	40	5	10
04 - Drainage	BRA-Bethany-04	7/6/2026	7/21/2026	12	5	10
05 - Road Base	BRA-Bethany-05	7/22/2026	8/6/2026	12	5	10
06 - Initial Overlay	BRA-Bethany-06	8/7/2026	8/20/2026	10	5	10
07 - Signs and Signals	BRA-Bethany-07	8/21/2026	8/21/2026	1	1	10
08 - Intermediate Overlay	BRA-Bethany-08	6/19/2030	6/24/2030	4	4	10
09 - Final Overlay	BRA-Bethany-09	5/19/2038	5/24/2038	4	4	10

**Total Site Acres**

**21**

Offroad Equipment (Fossil Fuel) Inventory for Bethany Reservoir Discharge Structure Access Road  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
BRA-Bethany-01	CAT D6 LGPDozer w winch	Crawler Tractor	707.95	36	20	Diesel or Hybrid	179	0.43		
BRA-Bethany-01	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	353.98	36	10	Diesel	384	0.38		
BRA-Bethany-02	Air Compressor 375 cfm	Air Compressor	12.13	32	0	Diesel - Tier 4	122	0.48		
BRA-Bethany-02	CAT LOADER/HOE 416 E	Rubber Tired Loaders	24.25	32	1	Diesel	78	0.36		
BRA-Bethany-02	Compactor, Plate, 22" w x 35"	Plate Compactors	12.13	32	0.3790625	Diesel	8.5	0.43		
BRA-Bethany-03	CAT 14 M	Grader	199.11	40	5	Diesel	274	0.41		
BRA-Bethany-03	CAT 825, Roller	Rollers	398.22	40	10	Diesel	315	0.38		
BRA-Bethany-03	CAT D6 LGPDozer w winch	Crawler Tractor	398.22	40	10	Diesel or Hybrid	179	0.43		
BRA-Bethany-03	Water Pump, 4" Diesel	Pumps	47.79	40	1	Diesel	10	0.74		
BRA-Bethany-04	CAT LOADER/HOE 416 E	Rubber Tired Loaders	28	12	2	Diesel	78	0.36		
BRA-Bethany-04	Compactor, Trench Roller, Vib 32" w CAT	Rollers	56	12	5	Diesel	20	0.38		
BRA-Bethany-05	14 M	Grader	113.78	12	9	Diesel	274	0.41		
BRA-Bethany-05	CAT CS-64, Roller, 15.7 tn, 156HP Water	Rollers	113.78	12	9	Diesel	156	0.38		
BRA-Bethany-05	Pump, 4" Diesel	Pumps	113.78	12	9	Diesel	10	0.74		
BRA-Bethany-06	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	94.13	10	9	Diesel or Hybrid	224	0.42		
BRA-Bethany-06	Asphalt Roller, 17.6 Tn Pneumatic, 133hp	Rollers	94.13	10	9	Diesel or Hybrid	133	0.38		
BRA-Bethany-06	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	94.13	10	9	Diesel or Hybrid	137	0.38		
BRA-Bethany-06	LOADER/HOE 416 E	Rubber Tired Loaders	94.13	10	9	Diesel	78	0.36		
BRA-Bethany-07	Boom Truck, 12.5 Tn Boom	Crane	4	1	4	Diesel or Hybrid	100	0.29		
BRA-Bethany-07	CAT LOADER/HOE 416 E	Rubber Tired Loaders	4	1	4	Diesel	78	0.36		
BRA-Bethany-08	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	36.33	4	9	Diesel or Hybrid	224	0.42		
BRA-Bethany-08	Asphalt Roller, 17.6 Tn Pneumatic, 133hp	Rollers	36.33	4	9	Diesel or Hybrid	133	0.38		
BRA-Bethany-08	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	36.33	4	9	Diesel or Hybrid	137	0.38		
BRA-Bethany-08	LOADER/HOE 416 E	Rubber Tired Loaders	36.33	4	9	Diesel	78	0.36		
BRA-Bethany-09	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	36.33	4	9	Diesel or Hybrid	224	0.42		
BRA-Bethany-09	Asphalt Roller, 17.6 Tn Pneumatic, 133hp	Rollers	36.33	4	9	Diesel or Hybrid	133	0.38		
BRA-Bethany-09	Asphalt Roller, 2 Drum 12tn, 137hp CAT	Rollers	36.33	4	9	Diesel or Hybrid	137	0.38		
BRA-Bethany-09	LOADER/HOE 416 E	Rubber Tired Loaders	36.33	4	9	Diesel	78	0.36		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT

Offroad Equipment (Electric) Inventory for Bethany Reservoir Discharge Structure Access Road  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BRA-Bethany - 03	Light Plant, 4 lite, 1000w	1592.9	40		

Vehicle Inventory for Bethany Reservoir Discharge Structure Access Road  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
BRA-Bethany-01	Pickup, 1/2T	General Materials from Stockton	36	1	1.1	1	0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-02	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	32	34	1.1	32	1	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-02	20 Ton Flatbed Truck/End Dump	It-run Gravel 3 Inch Minus from Vernalis	32	2	0.7	3	0	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-02	Pickup, 1/2T	General Materials from Stockton	32	1	1.1	1	0.0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-02	40 Ton Tractor & Trailer	General Materials from Stockton	32	1	1.1	1	0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-03	20 Ton Flatbed Truck/End Dump	Pit-run Gravel 3 Inch Minus from Vernalis	40	2091	0.7	2587	74.7	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-03	Pickup, 1/2T	General Materials from Stockton	40	1	1.1	1	0.0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	12	2	1.1	2	0.2	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-04	20 Ton Flatbed Truck/End Dump	It-run Gravel 3 Inch Minus from Vernalis	12	6	0.7	8	1	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-04	Pickup, 1/2T	General Materials from Stockton	12	1	1.1	1	0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-05	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	12	1013	0.7	1447	121	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-05	Pickup, 1/2T	General Materials from Stockton	12	1	1.1	1	0.1	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-06	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	10	403	0.7	576	58	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-06	Pickup, 1/2T	General Materials from Stockton	10	1	1.1	1	0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1	1	1.1	1	1	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-07	Pickup, 1/2T	General Materials from Stockton	1	1	1.1	1	1	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-07	40 Ton Tractor & Trailer	General Materials from Stockton	1	0	1.1	0	0.0	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-08	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	4	134	0.7	192	48.0	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-08	Pickup, 1/2T	General Materials from Stockton	4	1	1.1	1	0.3	Bethany Reservoir Access from Stockton	32	64	Diesel	
BRA-Bethany-09	20 Ton Flatbed Truck/End Dump	Asphalt, Hot Mix Delivered from Vernalis	4	134	0.7	192	48.0	Bethany Reservoir Access from Vernalis	21	42	Diesel	
BRA-Bethany-09	Pickup, 1/2T	General Materials from Stockton	4	1	1.1	1	0	Bethany Reservoir Access from Stockton	32	64	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site												
BRA-Bethany-01	CAT 730 30T, Articulated End Dumbo	Dumpers	36	1770	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	8849	Diesel or Hybrid	
BRA-Bethany-03	Cat 10mpg w/Cat 770, 511HP	Dumpers	40	199	not applicable	not applicable	not applicable	n-site: assume 5 miles/hour	not applicable	996	Diesel	
BRA-Bethany-04	Truck, End Dump, 10-15cu, Hwy	Dumpers	12	56	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	280	Diesel	



**Employees Required for Bethany Reservoir Discharge Structure Access Road  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
BRA-Bethany-01	OPERATING ENGINEER FOREMAN	176.99	10	Stockton to BRA	32
BRA-Bethany-01	Operator G2 Excavator 3.5 to 7.0 cy	353.98	10	Stockton to BRA	32
BRA-Bethany-01	Operator G4 Dozer & Push Cat	707.95	10	Stockton to BRA	32
BRA-Bethany-01	Teamster G3 ED 8-24cy, Water>7mgal	1769.89	10	Stockton to BRA	32
BRA-Bethany-01 Total					
BRA-Bethany-02	Laborer Foreman	12.13	10	Stockton to BRA	32
BRA-Bethany-02	Laborer G1 Pipe layers	48.51	10	Stockton to BRA	32
BRA-Bethany-02	Operator G3 BH-Loader>3/4cy	24.25	10	Stockton to BRA	32
BRA-Bethany-02	Teamster G1 Hwy ED<6cy, Flatbed	18.19	10	Stockton to BRA	32
BRA-Bethany-02	Teamster G2 Hwy ED 6-8cy, Wate	6.06	10	Stockton to BRA	32
BRA-Bethany-02 Total					
BRA-Bethany-03	Laborer G2 General	47.79	10	Stockton to BRA	32
BRA-Bethany-03	OPERATING ENGINEER FOREMAN	398.22	10	Stockton to BRA	32
BRA-Bethany-03	Operator G2 Finish Blade	199.11	10	Stockton to BRA	32
BRA-Bethany-03	Operator G4 Dozer & Push Cat	398.22	10	Stockton to BRA	32
BRA-Bethany-03	Operator G5 Compactor w-blade	398.22	10	Stockton to BRA	32
BRA-Bethany-03	Teamster G3 ED 8-24cy, Water<7	199.11	10	Stockton to BRA	32
BRA-Bethany-03 Total					
BRA-Bethany-04	Operator G4 Loader <4.1cy	28	10	Stockton to BRA	32
BRA-Bethany-04	Laborer G1 Pipe layers	112	10	Stockton to BRA	32
BRA-Bethany-04	Laborer G1 Power Tamper	56	10	Stockton to BRA	32
BRA-Bethany-04	Teamster G2 Hwy ED 6-8cy, Water<7	56	10	Stockton to BRA	32
BRA-Bethany-04 Total					
BRA-Bethany-05	OPERATING ENGINEER FOREMAN	113.78	10	Stockton to BRA	32
BRA-Bethany-05	Laborer G3 Flagman	227.56	10	Stockton to BRA	32
BRA-Bethany-05	Operator G2 Finish Blade	113.78	10	Stockton to BRA	32
BRA-Bethany-05	Operator G4 Grade Check	113.78	10	Stockton to BRA	32
BRA-Bethany-05	Operator G7 Roller, Compactor	113.78	10	Stockton to BRA	32
BRA-Bethany-05	Operator G8 Generator	22.76	10	Stockton to BRA	32
BRA-Bethany-05	Teamster G2 Hwy ED 6-8cy, Water<7	113.78	10	Stockton to BRA	32
BRA-Bethany-05 Total					
BRA-Bethany-06	Laborer G2 General	376.51	10	Stockton to BRA	32
BRA-Bethany-06	OPERATING ENGINEER FOREMAN	94.13	10	Stockton to BRA	32
BRA-Bethany-06	Operator G3 BH-Loader>3/4cy	94.13	10	Stockton to BRA	32
BRA-Bethany-06	Operator G4 Grade Check	94.13	10	Stockton to BRA	32
BRA-Bethany-06	Operator G5 Asphalt Roller	188.25	10	Stockton to BRA	32
BRA-Bethany-06	Operator G5 Paver	94.13	10	Stockton to BRA	32
BRA-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	47.06	10	Stockton to BRA	32
BRA-Bethany-06 Total					
BRA-Bethany-07	Laborer G2 General	16	10	Stockton to BRA	32
BRA-Bethany-07	OPERATING ENGINEER FOREMAN	4	10	Stockton to BRA	32
BRA-Bethany-07	Teamster G3 Boom Truck	4	10	Stockton to BRA	32
BRA-Bethany-07	Iron Worker-Rigger	4	10	Stockton to BRA	32
BRA-Bethany-07	Operator G3 BH-Loader>3/4cy	4	10	Stockton to BRA	32
BRA-Bethany-07	Operator G4a Boom truck<15 ton	4	10	Stockton to BRA	32
BRA-Bethany-07 Total					
BRA-Bethany-08	Laborer G2 General	145.31	10	Stockton to BRA	32
BRA-Bethany-08	OPERATING ENGINEER FOREMAN	36.33	10	Stockton to BRA	32
BRA-Bethany-08	Operator G3 BH-Loader>3/4cy	36.33	10	Stockton to BRA	32
BRA-Bethany-08	Operator G4 Grade Check	36.33	10	Stockton to BRA	32
BRA-Bethany-08	Operator G5 Asphalt Roller	72.65	10	Stockton to BRA	32
BRA-Bethany-08	Operator G5 Paver	36.33	10	Stockton to BRA	32
BRA-Bethany-08	Teamster G2 Hwy ED 6-8cy, Water<7	18.16	10	Stockton to BRA	32
BRA-Bethany-08 Total					
BRA-Bethany-09	Laborer G2 General	145.31	10	Stockton to BRA	32
BRA-Bethany-09	OPERATING ENGINEER FOREMAN	36.33	10	Stockton to BRA	32
BRA-Bethany-09	Operator G3 BH-Loader>3/4cy	36.33	10	Stockton to BRA	32
BRA-Bethany-09	Operator G4 Grade Check	36.33	10	Stockton to BRA	32
BRA-Bethany-09	Operator G5 Asphalt Roller	72.65	10	Stockton to BRA	32
BRA-Bethany-09	Operator G5 Paver	36.33	10	Stockton to BRA	32
BRA-Bethany-09	Teamster G2 Hwy ED 6-8cy, Water<7	18.16	10	Stockton to BRA	32

## Marine Inventory for Bethany Reservoir Discharge Structure Access Road Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									

## Locomotive Inventory for Bethany Reservoir Discharge Structure Access Road Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine	Operating	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if
NOT NEEDED								

**Helicopter Inventory for Bethany Reservoir Discharge Structure Access Road  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Bethany Reservoir Discharge Structure Access Road  
Option B2

Code	Stripping or Grading		# day	Stripping or Grading		Cut (cy)	Cut (cy/day)		Fill (cy)	Fill (cy/day)		Dredge (cy)	Dredge (cy/day)		Paving (sf)	Paving (sf/day)	
BRA-Bethany-01	0	36	0	0	63716	1770	0	0	0	0	0	0	0	0	0	0	0
BRA-Bethany-03	0	40	0	0	0	0	99556	2489	0	0	0	0	0	0	0	0	0
BRA-Bethany-05	0	12	0	0	0	0	15929	1327	0	0	0	0	0	0	0	0	0
BRA-Bethany-06	0	10	0	0	0	0	0	0	0	0	0	0	0	0	465930	46593	46593
BRA-Bethany-08	0	4	0	0	0	0	0	0	0	0	0	0	0	0	155295	38824	38824
BRA-Bethany-09	0	4	0	0	0	0	0	0	0	0	0	0	0	0	155295	38824	38824

**Demolition Assumptions for Bethany Reservoir Discharge Structure Access Road  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			

**Construction Schedule for Bethany Complex Batch Plant  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Erect Batch Plants	BCBP-Bethany-01	1/19/2028	7/4/2028	120	5	10
02 - Shafts Batch Plant Operations	BCBP-Bethany-02	4/13/2028	2/20/2029	224	5	10
03 - Batch Plant Operations Pumping Plant	BCBP-Bethany-03	7/5/2028	7/26/2034	1581	5	10
04 - Batch Plant Operations Surge Basin	BCBP-Bethany-04	12/31/2030	3/16/2038	1881	5	10
05 - Batch Plant Operations Aqueduct Tunnels	BCBP-Bethany-05	4/22/2031	9/19/2033	630	5	10
06 - Batch Plant Operations Bethany Outlet	BCBP-Bethany-06	4/29/2031	10/12/2035	1164	5	10
07 - Aqueduct Tunnel & shaft Batch Plant Operations	BCBP-Bethany-07	5/1/2031	10/12/2035	1162	5	10
08 - Batch Plant Operations Aqueduct pipeline	BCBP-Bethany-08	7/29/2033	5/11/2035	466	5	10

**Total Site Acres**

**2**

Offroad Equipment (Fossil Fuel) Inventory for Bethany Complex Batch Plant  
Option B2

Code	Equipment Name	General Equipment	Hours	# day	Hours/day/	Fuel Type	Engine Horsepower	Load Factor	Fuel Efficiency	Fuel (gal/day)
BCBP-Bethany-01	Air Compressor 185 cfm	Air Compressor	360	120	3	Diesel - Tier 4	49	0.48		
BCBP-Bethany-01	Air Compressor 185 cfm	Air Compressor	600	120	5	Diesel - Tier 4	49	0.48		
BCBP-Bethany-01	Boom Truck, 12.5 Tn Boom	Crane	180	120	2	Diesel or Hybrid	100	0.29		
BCBP-Bethany-01	Boom Truck, 12.5 Tn Boom	Crane	300	120	3	Diesel or Hybrid	100	0.29		
BCBP-Bethany-01	Grove RT Crane 80T, 275hp	Crane	360	120	3	Diesel	275	0.29		
BCBP-Bethany-01	Grove RT Crane 80T, 275hp	Crane	600	120	5	Diesel	275	0.29		
BCBP-Bethany-02	400A Diesel Welder, Trailer Mounted	Welder	709.44	224	3	Diesel	33	0.45		
BCBP-Bethany-02	Bobcat 5630 Skid Steer Loader	Skid Loaders	3547.2	224	16	Diesel	74	0.37		
BCBP-Bethany-02	CAT 962 H Wheel Loader	Rubber Tired Loaders	9045.36	224	40	Diesel	230	0.36		
BCBP-Bethany-03	400A Diesel Welder, Trailer Mounted	Welder	1749.72	1581	1	Diesel	33	0.45		
BCBP-Bethany-03	Bobcat 5630 Skid Steer Loader	Skid Loaders	8748.61	1581	6	Diesel	74	0.37		
BCBP-Bethany-03	CAT 962 H Wheel Loader	Rubber Tired Loaders	17497.22	1581	11	Diesel	230	0.36		
BCBP-Bethany-04	400A Diesel Welder, Trailer Mounted	Welder	709.44	1881	0	Diesel	33	0.45		
BCBP-Bethany-04	Bobcat 5630 Skid Steer Loader	Skid Loaders	3547.2	1881	2	Diesel	74	0.37		
BCBP-Bethany-04	CAT 962 H Wheel Loader	Rubber Tired Loaders	9045.36	1881	5	Diesel	230	0.36		
BCBP-Bethany-05	400A Diesel Welder, Trailer Mounted	Welder	709.44	630	1	Diesel	33	0.45		
BCBP-Bethany-05	Bobcat 5630 Skid Steer Loader	Skid Loaders	3547.2	630	6	Diesel	74	0.37		
BCBP-Bethany-05	CAT 962 H Wheel Loader	Rubber Tired Loaders	9045.36	630	14	Diesel	230	0.36		
BCBP-Bethany-06	400A Diesel Welder, Trailer Mounted	Welder	709.44	1164	1	Diesel	33	0.45		
BCBP-Bethany-06	Bobcat 5630 Skid Steer Loader	Skid Loaders	3547.2	1164	3	Diesel	74	0.37		
BCBP-Bethany-06	CAT 962 H Wheel Loader	Rubber Tired Loaders	9045.36	1164	8	Diesel	230	0.36		
BCBP-Bethany-07	400A Diesel Welder, Trailer Mounted	Welder	1050.28	1162	1	Diesel	33	0.45		
BCBP-Bethany-07	Bobcat 5630 Skid Steer Loader	Skid Loaders	5251.39	1162	5	Diesel	74	0.37		
BCBP-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	10502.78	1162	9	Diesel	230	0.36		
BCBP-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	709.44	466	2	Diesel	33	0.45		
BCBP-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	3547.2	466	8	Diesel	74	0.37		
BCBP-Bethany-08	CAT 962 H Wheel Loader	Rubber Tired Loaders	9045.36	466	19	Diesel	230	0.36		
BCBP-Bethany-02	Portable 300kw Welder	Welders	42800	224	27	Diesel	480	0.45		
BCBP-Bethany-04	Portable 300kw Welder	Welders	1880	1881	3	Diesel	480	0.45		
BCBP-Bethany-05	Portable 300kw Welder	Welders	6300	630	10	Diesel	480	0.45		
BCBP-Bethany-08	Portable 300kw Welder	Welders	4200	466	9	Diesel	480	0.45		
BCBP-Bethany-08	Portable 300kw Welder	Welder	3700	466	13	Diesel	480	0.45		

NOTE: HOURS/DAY/EQUIPMENT (COLUMN F) WITH MORE 10 HOURS THAN WORK DAY HOURS WOULD REQUIRE MULTIPLE NUMBERS OF EQUIPMENT



Offroad Equipment (Electric) Inventory for Bethany Complex Batch Plant  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BCBP-Bethany-01	400A, Electric Welder	960	120	14.4	115

Note; Batch plant equipment included in Energy Information workbook.

Vehicle Inventory for Bethany Complex Batch Plant  
Option B2

Code	Vehicle	Primary Trip Purpose/Location	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency
Vehicle Use on Paved Roads --- and Not on Construction Site												
BCBP-Bethany-01	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	120	9	1.1	8	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-01	Pickup, 1/2T	General Materials from Stockton	120	5	1.1	5	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-02	Highway Dump Truck 18 CY	Cement from Vernalis	224	597	1.1	560	2	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-02	Highway Dump Truck 18 CY	Flyash from Vernalis	224	87	1.1	81	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-02	Highway Dump Truck 18 CY	Sand from Stockton	224	892	1.1	836	4	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-02	Highway Dump Truck 18 CY	Aggregate from Stockton	224	1118	1.1	1048	5	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1581	315	1.1	295	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-03	Pickup, 1/2T	General Materials from Stockton	1581	31	1.1	29	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-03	Highway Dump Truck 18 CY	Cement from Vernalis	1581	13631	1.1	12779	8	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-03	Highway Dump Truck 18 CY	Flyash from Vernalis	1581	1981	1.1	1857	1	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-03	Highway Dump Truck 18 CY	Sand from Stockton	1581	20368	1.1	19095	12	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-03	Highway Dump Truck 18 CY	Aggregate from Stockton	1581	25519	1.1	23924	15	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-04	Highway Dump Truck 18 CY	Cement from Vernalis	1881	2597	1.1	2435	1	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-04	Highway Dump Truck 18 CY	Flyash from Vernalis	1881	377	1.1	354	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-04	Highway Dump Truck 18 CY	Sand from Stockton	1881	3880	1.1	3638	2	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-04	Highway Dump Truck 18 CY	Aggregate from Stockton	1881	4862	1.1	4558	2	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Cement from Vernalis	630	277	1.1	260	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Cement from Vernalis	630	26	1.1	25	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Flyash from Vernalis	630	40	1.1	38	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Flyash from Vernalis	630	4	1.1	4	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Sand from Stockton	630	414	1.1	388	1	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Sand from Stockton	630	39	1.1	37	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Aggregate from Stockton	630	519	1.1	486	1	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-05	Highway Dump Truck 18 CY	Aggregate from Stockton	630	49	1.1	46	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-06	Highway Dump Truck 18 CY	Cement from Vernalis	1164	501	1.1	469	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-06	Highway Dump Truck 18 CY	Flyash from Vernalis	1164	73	1.1	68	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-06	Highway Dump Truck 18 CY	Sand from Stockton	1164	748	1.1	701	1	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-06	Highway Dump Truck 18 CY	Aggregate from Stockton	1164	937	1.1	879	1	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1162	189	1.1	177	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-07	Pickup, 1/2T	General Materials from Stockton	1162	18	1.1	17	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-07	Highway Dump Truck 18 CY	Cement from Vernalis	1162	26	1.1	25	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-07	Highway Dump Truck 18 CY	Flyash from Vernalis	1162	4	1.1	4	0	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-07	Highway Dump Truck 18 CY	Sand from Stockton	1162	39	1.1	37	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-07	Highway Dump Truck 18 CY	Aggregate from Stockton	1162	49	1.1	46	0	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-08	Highway Dump Truck 18 CY	Cement from Vernalis	466	2650	1.1	2485	5	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-08	Highway Dump Truck 18 CY	Flyash from Vernalis	466	385	1.1	361	1	Bethany Complex Batch Plant from Vernalis	32	64	Diesel	
BCBP-Bethany-08	Highway Dump Truck 18 CY	Sand from Stockton	466	3960	1.1	3712	8	Bethany Complex Batch Plant from Stockton	32	64	Diesel	
BCBP-Bethany-08	Highway Dump Truck 18 CY	Aggregate from Stockton	466	4961	1.1	4651	10	Bethany Complex Batch Plant from Stockton	32	64	Diesel	

Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site

Miles On-Site

**Employees Required for Bethany Complex Batch Plant  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/
BCBP-Bethany-01	Laborer G2 General	1920	10	Stockton to BCBP	32
BCBP-Bethany-01	Carpenter Foreman	960	10	Stockton to BCBP	32
BCBP-Bethany-01	Carpenter Apprentice	960	10	Stockton to BCBP	32
BCBP-Bethany-01	Electrical Foreman	480	10	Stockton to BCBP	32
BCBP-Bethany-01	Electrician Journeyman	960	10	Stockton to BCBP	32
	Iron Worker Journeyman				
BCBP-Bethany-01	Rebar/Struct	1920	10	Stockton to BCBP	32
BCBP-Bethany-01	Millwright	960	10	Stockton to BCBP	32
BCBP-Bethany-01	Operator G2a Cranes 45 to 100 t	960	10	Stockton to BCBP	32
BCBP-Bethany-01	Teamster G3 Boom Truck	480	10	Stockton to BCBP	32
BCBP-Bethany-01 Total					
BCBP-Bethany-02	Laborer G4 Clean-up	7094	10	Stockton to BCBP	32
BCBP-Bethany-02	OPERATING ENGINEER FOREMAN	3547	10	Stockton to BCBP	32
BCBP-Bethany-02	Operator G2 Plant Operator	3547	10	Stockton to BCBP	32
BCBP-Bethany-02	Operator G3 Loader >4cy	10642	10	Stockton to BCBP	32
BCBP-Bethany-02	Operator G5 Concrete Conveyor	3547	10	Stockton to BCBP	32
BCBP-Bethany-02 Total					
BCBP-Bethany-03	Laborer G4 Clean-up	17497	10	Stockton to BCBP	32
BCBP-Bethany-03	OPERATING ENGINEER FOREMAN	8749	10	Stockton to BCBP	32
BCBP-Bethany-03	Operator G2 Micro Tunnel	8749	10	Stockton to BCBP	32
BCBP-Bethany-03	Operator G2 Plant Operator	17497	10	Stockton to BCBP	32
BCBP-Bethany-03	Operator G3 Loader >4cy	17497	10	Stockton to BCBP	32
BCBP-Bethany-03	Operator G4 Loader <4.1cy	17497	10	Stockton to BCBP	32
BCBP-Bethany-03	Operator G7 Oiler	8749	10	Stockton to BCBP	32
BCBP-Bethany-03 Total					
BCBP-Bethany-04	Laborer G4 Clean-up	7094	10	Stockton to BCBP	32
BCBP-Bethany-04	OPERATING ENGINEER FOREMAN	3547	10	Stockton to BCBP	32
BCBP-Bethany-04	Operator G2 Plant Operator	3547	10	Stockton to BCBP	32
BCBP-Bethany-04	Operator G3 Loader >4cy	10642	10	Stockton to BCBP	32
BCBP-Bethany-04	Operator G5 Concrete Conveyor	3547	10	Stockton to BCBP	32
BCBP-Bethany-04 Total					
BCBP-Bethany-05	Laborer G4 Clean-up	7094	10	Stockton to BCBP	32
BCBP-Bethany-05	OPERATING ENGINEER FOREMAN	3547	10	Stockton to BCBP	32
BCBP-Bethany-05	Operator G2 Plant Operator	3547	10	Stockton to BCBP	32
BCBP-Bethany-05	Operator G3 Loader >4cy	10642	10	Stockton to BCBP	32
BCBP-Bethany-05	Operator G5 Concrete Conveyor	3547	10	Stockton to BCBP	32
BCBP-Bethany-05 Total					
BCBP-Bethany-06	Laborer G4 Clean-up	7094	10	Stockton to BCBP	32
BCBP-Bethany-06	OPERATING ENGINEER FOREMAN	3547	10	Stockton to BCBP	32
BCBP-Bethany-06	Operator G2 Plant Operator	3547	10	Stockton to BCBP	32
BCBP-Bethany-06	Operator G3 Loader >4cy	10642	10	Stockton to BCBP	32
BCBP-Bethany-06	Operator G5 Concrete Conveyor	3547	10	Stockton to BCBP	32
BCBP-Bethany-06 Total					
BCBP-Bethany-07	Laborer G4 Clean-up	10503	10	Stockton to BCBP	32
BCBP-Bethany-07	OPERATING ENGINEER FOREMAN	5251	10	Stockton to BCBP	32
BCBP-Bethany-07	Operator G2 Micro Tunnel	5251	10	Stockton to BCBP	32
BCBP-Bethany-07	Operator G2 Plant Operator	10503	10	Stockton to BCBP	32
BCBP-Bethany-07	Operator G3 Loader >4cy	10503	10	Stockton to BCBP	32
BCBP-Bethany-07	Operator G4 Loader <4.1cy	10503	10	Stockton to BCBP	32
BCBP-Bethany-07	Operator G7 Oiler	5251	10	Stockton to BCBP	32
BCBP-Bethany-07 Total					
BCBP-Bethany-08	Laborer G4 Clean-up	7094	10	Stockton to BCBP	32
BCBP-Bethany-08	OPERATING ENGINEER FOREMAN	3547	10	Stockton to BCBP	32
BCBP-Bethany-08	Operator G2 Plant Operator	3547	10	Stockton to BCBP	32
BCBP-Bethany-08	Operator G3 Loader >4cy	10642	10	Stockton to BCBP	32
BCBP-Bethany-08	Operator G5 Concrete Conveyor	3547	10	Stockton to BCBP	32

## Marine Inventory for Bethany Complex Batch Plant Option B2

Code	Dock Site	# of	Engine Tier	Propulsion Engine	Auxiliary Engine	Propulsion Engine	Auxiliary Engine	Fuel Type	Fuel (gal/day) (if
NOT NEEDED									



**Helicopter Inventory for Bethany Complex Batch Plant  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover	Fuel (gal/day) (if
------	-----------------	-----------	-------------	--------------	--------------------

NOT NEEDED

Earthmov  
Option B2

NOT NEEDED

**Demolition Assumptions for Bethany Complex Batch Plant  
Option B2**

Code	# of Structures	# day	Demolition per day (sf)
NOT NEEDED			



**Construction Schedule for Bethany Complex  
Options B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Surge Shaft - Clear and Grub	BC-Bethany-01	1/12/2028	1/18/2028	5	5	10
02 - Surge Shaft Site Facilities and support	BC-Bethany-02	1/12/2028	2/12/2029	284	5	10
03 - Surge Shaft - Construction	BC-Bethany-03	1/19/2028	3/8/2029	297	5	10
04 - Pumping Plant - Mobilization	BC-Bethany-04	3/9/2029	5/31/2029	60	5	10
05 - Pumping Plant - Site Operations & Overhead	BC-Bethany-05	3/9/2029	7/8/2036	1913	5	10
06 - Pumping Plant - Temporary Facilities	BC-Bethany-06	4/20/2029	2/18/2030	217	5	10
07 - Pumping Plant - Diaphragm Walls	BC-Bethany-07	7/18/2029	10/8/2030	320	5	10
08 - Pumping Plant - Internal Concrete - PP and Conduit	BC-Bethany-08	8/27/2030	8/23/2034	1042	5	10
09 - Surge Basin - Site Facilities & Ops -	BC-Bethany-09	10/8/2030	3/16/2038	1941	5	10
10 - Surge Basin - Excavate -	BC-Bethany-10	10/8/2030	1/22/2036	1381	5	10
11 - Surge Basin - Mobilize	BC-Bethany-11	10/8/2030	12/9/2030	45	5	10
12 - Surge Basin - Temporary Facilities	BC-Bethany-12	12/10/2030	6/25/2036	1447	5	10
13 - Pumping Plant - Excavate PP & Wet Well Conduit	BC-Bethany-13	12/13/2030	8/9/2033	693	5	10
14 - Surge Basin - Diaphragm Walls -	BC-Bethany-14	4/25/2031	10/4/2032	377	5	10
15 - Surge Basin - Clear and Grub -	BC-Bethany-15	7/22/2031	8/10/2032	276	5	10
16 - Pumping Plant - 15' Dia Bethany Reservoir Pipe to Y	BC-Bethany-16	2/14/2035	10/24/2035	181	5	10
17 - Pumping Plant - Install pumps and motors	BC-Bethany-17	7/20/2032	8/27/2035	810	5	10
18 - Surge Basin - Base structure	BC-Bethany-18	4/20/2033	5/16/2036	803	5	10
19 - Pumping Plant - Excavate Mechanical Room	BC-Bethany-19	5/5/2033	8/9/2033	69	5	10
20 - Pumping Plant - Fit out PP metal work	BC-Bethany-20	6/1/2033	11/13/2035	640	5	10
21 - Pumping Plant - Drilled Piers for Mechanical Room	BC-Bethany-21	7/28/2033	3/17/2034	167	5	10
22 - Pumping Plant - Excavate Electrical Room	BC-Bethany-22	8/10/2033	10/13/2033	47	5	10
23 - Pumping Plant - Install bulkhead gate guides - PP	BC-Bethany-23	8/10/2033	9/8/2034	283	5	10
24 - Pumping Plant - Concrete - Mechanical room	BC-Bethany-24	10/20/2033	6/28/2034	180	5	10
25 - Pumping Plant - Excavate Surge Tank Vault	BC-Bethany-25	9/23/2033	2/3/2034	96	5	10
26 - Pumping Plant - Gantry Cranes & Canopies	BC-Bethany-26	11/24/2033	3/9/2034	76	5	10
27 - Pumping Plant - Concrete - Surge Tank & valve Vault	BC-Bethany-27	3/8/2034	12/28/2034	212	5	10
28 - Pumping Plant - Pump Plant MCC/ Electrical Bldg.	BC-Bethany-28	5/19/2034	5/23/2035	264	5	10
29 - Pumping Plant - HVAC Systems	BC-Bethany-29	6/28/2034	10/30/2035	350	5	10
30 - Pumping Plant - Wet Well Pumps	BC-Bethany-30	7/19/2034	8/11/2034	18	5	10
31 - Pumping Plant - Elevators	BC-Bethany-31	7/27/2034	12/13/2034	100	5	10
32 - Pumping Plant - Equipment Storage Bldg	BC-Bethany-32	8/25/2034	8/24/2035	261	5	10
33 - Pumping Plant - Storage Area & Yards	BC-Bethany-33	9/15/2034	5/14/2035	172	5	10
34 - Pumping Plant - Generator Bldg.	BC-Bethany-34	9/20/2034	12/4/2034	54	5	10
35 - Pumping Plant - Substation & Elec. Distribution	BC-Bethany-35	9/21/2034	3/23/2035	132	5	10
36 - Pumping Plant - Remove Section of Diaphragm Walls - WW Pipe, E	BC-Bethany-36	9/26/2034	12/1/2034	49	5	10
37 - Pumping Plant - Electrical	BC-Bethany-37	11/20/2034	7/8/2036	427	5	10
38 - Pumping Plant - Install steel pipes & Valves	BC-Bethany-38	11/6/2034	5/8/2036	394	5	10
39 - Pumping Plant - Electrical & SCADA	BC-Bethany-39	2/7/2035	6/12/2035	90	5	10
40 - Surge Basin - Install wet well Conduit stop log guides	BC-Bethany-40	12/11/2035	2/6/2036	42	5	10
41 - Pumping Plant - Site Finishing	BC-Bethany-41	10/25/2035	6/25/2036	175	5	10
42 - Surge Basin - Site Finishing -	BC-Bethany-42	5/19/2036	6/25/2036	28	5	10
43 - Surge Shaft - Remove TBM and Tunnel Equipment - Reach 4	BC-Bethany-43	8/18/2037	10/6/2037	36	5	10
44 - Surge Basin - Construct bridge and Gantry Crane	BC-Bethany-44	10/7/2037	3/16/2038	115	5	10

**Total Acres**

**228**

Offroad Equipment (Fossil Fuel) Inventory for Bethany Complex  
Option B2

Code	Equipment Name	General Equipment Category	Hours	# day	Hours/day/ equipment	Fuel Type	Engine Horsepower (if known)	Load Factor	Fuel Efficiency (gal/day)	Fuel (gal/day) (if known)
BC-Bethany-01	623G Scraper Elevate 21 CY	Scaper	62.16	5	12	Diesel	359	0.48		
BC-Bethany-01	CAT DB Dozer	Crawler Tractor	31.08	5	6	Diesel	328	0.43		
BC-Bethany-01	Grader 16H - 16' Blade	Grader	31.08	5	6	Diesel	285	0.41		
BC-Bethany-03	150 KW Diesel Generator	Generator	100	297	0	Diesel - Tier 4	183	0.74		
BC-Bethany-03	1600 CFM Compressor Diesel	Air Compressor	573	297	2	Diesel - Tier 4	540	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	100	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	64	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	16	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	52	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	344	297	1	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	620.69	297	2	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	3.3	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	250 CFM Compressor Diesel	Air Compressor	14.55	297	0	Diesel - Tier 3	75	0.48		
BC-Bethany-03	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	573	297	2	Diesel or Hybrid	130	0.36		
BC-Bethany-03	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	8.01	297	0	Diesel or Hybrid	130	0.36		
BC-Bethany-03	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	314	297	1	Diesel or Hybrid	130	0.36		
BC-Bethany-03	CAT Forklift 5,500 LB	Aerial Lifts	16	297	0	Diesel	63	0.31		
BC-Bethany-03	CAT Hyd Excavator 1CY	Excavator	16	297	0	Diesel	138	0.38		
BC-Bethany-03	CAT Hyd Excavator 1CY	Excavator	8.01	297	0	Diesel	138	0.38		
BC-Bethany-03	CAT Hyd Excavator 1CY	Excavator	314	297	1	Diesel	138	0.38		
BC-Bethany-03	Concrete Pump Truck	Off-Highway Truck	1146	297	4	Diesel	300	0.38		
BC-Bethany-03	Concrete Pump Truck	Off-Highway Truck	86.69	297	0	Diesel	300	0.38		
BC-Bethany-03	Dewater Pump 6"	Pumps	400	297	1	Diesel	50	0.74		
BC-Bethany-03	Hydraulic 15 Ton Crane	Crane	100	297	0	Diesel	85	0.29		
BC-Bethany-03	Hydraulic 25 Ton Crane	Crane	87.23	297	0	Diesel	100	0.29		
BC-Bethany-03	Hydraulic 40 Ton Crane	Crane	72	297	0	Diesel	300	0.29		
BC-Bethany-03	Hydraulic 40 Ton Crane	Crane	16	297	0	Diesel	300	0.29		
BC-Bethany-03	Hydraulic 55 Ton Crane	Crane	573	297	2	Diesel	350	0.29		
BC-Bethany-03	Hydraulic 9 Ton Crane	Crane	16	297	0	Diesel	85	0.29		
BC-Bethany-03	Hydromill	Bore Drill Rig	573	297	2	Diesel	522	0.5		
BC-Bethany-03	Manitowoc 200 Ton Crane	Crane	573	297	2	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	100	297	0	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	64	297	0.2	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	558	297	1.9	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	52	297	0.2	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	573	297	2	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	329	297	1	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	620.69	297	2	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	48.5	297	0	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	14.55	297	0	Diesel	760	0.29		
BC-Bethany-03	Manitowoc 999-275 Ton Crane	Crane	344	297	1	Diesel	900	0.29		
BC-Bethany-03	Slurry Wall Mixer	Cement & Mortar Mix	573	297	2	Diesel	8	0.56		
BC-Bethany-03	Slurry Wall Techniwell	Pumps	573	297	2	Diesel	500	0.74		
BC-Bethany-03	Trailer Conc Pump 100 CY HR	Pumps	64	297	0	Diesel	200	0.74		
BC-Bethany-03	Trailer Conc Pump 100 CY HR	Pumps	52	297	0	Diesel	200	0.74		
BC-Bethany-03	Trailer Conc Pump 100 CY HR	Pumps	344	297	1	Diesel	200	0.74		
BC-Bethany-03	Trailer Conc Pump 100 CY HR	Pumps	14.55	297	0	Diesel	200	0.74		
BC-Bethany-05	CAT LOADER/HOE 416 E	Rubber Tired Loaders	16000	1913	8	Diesel	78	0.36		
BC-Bethany-05	Air Compressor 1600 cfm	Air Compressor	10068.04	1913	5	Diesel - Tier 4	540	0.48		
BC-Bethany-05	Air Compressor 900 cfm	Air Compressor	10400	1913	5	Diesel - Tier 3	300	0.48		
BC-Bethany-05	Conc Pump, Trik Mtd, 117 cy/hr, 210hp	Off-Highway Truck	20800	1913	11	Diesel - Tier 4	210	0.38		
BC-Bethany-05	Farm Tractor, All Wheel Drive, 80 HP	Off-Highway Tractor	16000	1913	8	Diesel	80	0.44		
BC-Bethany-05	Fork Lift, 8000LB, RT, 4x4	Forklifts	20136.07	1913	11	Diesel	142	0.2		
BC-Bethany-05	Fork Lift, 8000LB, RT, 4x4	Forklifts	5896	1913	3	Diesel	142	0.2		
BC-Bethany-05	Grove RT Crane 30T, 160HP	Crane	10068.04	1913	5	Diesel	160	0.29		
BC-Bethany-05	Grove RT Crane 30T, 160HP	Crane	10586	1913	6	Diesel	160	0.29		
BC-Bethany-05	Manitowoc 999, 250T, 260' Boom	Crane	20800	1913	11	Diesel	900	0.29		
BC-Bethany-05	Portable, 90 Kw, Diesel 158hp	Generator	20800	1913	11	Diesel - Tier 4	158	0.45		
BC-Bethany-05	Tri Crane, 200tn Hyd, 197'bm, 563hp	Crane	20800	1913	11	Diesel	563	0.29		
BC-Bethany-05	Well Drill	Bore/Drill Rigs	1000	1913	1	Diesel	136	0.5		
BC-Bethany-06	CAT LOADER/HOE 416 E	Rubber Tired Loaders	7200	217	33.1797235	Diesel	78	0.36		
BC-Bethany-06	Air Compressor 375 cfm	Air Compressor	150	217	1	Diesel - Tier 4	122	0.48		
BC-Bethany-06	Boom Truck, 12.5 Tn Boom	Crane	875.98	217	4	Diesel or Hybrid	100	0.29		
BC-Bethany-06	Boom Truck, 12.5 Tn Boom	Crane	450.77	217	2	Diesel or Hybrid	100	0.29		
BC-Bethany-06	Boom Truck, 12.5 Tn Boom	Crane	141.5	217	0.652073733	Diesel or Hybrid	100	0.29		
BC-Bethany-06	Boom Truck, 12.5 Tn Boom	Crane	681.33	217	3.139769585	Diesel or Hybrid	100	0.29		
BC-Bethany-06	Boom Truck, 12.5 Tn Boom	Crane	70.42	217	0.324516129	Diesel or Hybrid	100	0.29		
BC-Bethany-06	CAT 14 M	Grader	20	217	0.092165899	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	150	217	0.69124424	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	162.5	217	0.748847926	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	12.72	217	0.058617512	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	190.06	217	0.875852535	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	114.21	217	0.526313364	Diesel	274	0.41		
BC-Bethany-06	CAT 14 M	Grader	74.17	217	0.341797235	Diesel	274	0.41		
BC-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	20	217	0.092165899	Diesel	156	0.38		
BC-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	150	217	0.69124424	Diesel	156	0.38		
BC-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	114.21	217	0.526313364	Diesel	156	0.38		
BC-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	74.17	217	0.341797235	Diesel	156	0.38		
BC-Bethany-06	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	1440	217	6.6359447	Diesel	156	0.38		
BC-Bethany-06	CAT D6 LGPDozer w winch	Crawler Tractor	20	217	0.092165899	Diesel or Hybrid	179	0.43		
BC-Bethany-06	CAT D6 LGPDozer w winch	Crawler Tractor	325	217	1.497695853	Diesel or Hybrid	179	0.43		
BC-Bethany-06	CAT D6 LGPDozer w winch	Crawler Tractor	50.86	217	0.23437788	Diesel or Hybrid	179	0.43		
BC-Bethany-06	CAT D6 LGPDozer w winch	Crawler Tractor	760.26	217	4	Diesel or Hybrid	179	0.43		
BC-Bethany-06	Compactor, Plate, 22" w x 35"	Plate Compactors	300	217	1	Diesel	8.5	0.43		
BC-Bethany-06	Compactor, Plate, 22" w x 35"	Plate Compactors	400	217	2	Diesel	8.5	0.43		
BC-Bethany-06	Compactor, Plate, 22" w x 35"	Plate Compactors	285	217	1	Diesel	8.5	0.43		
BC-Bethany-06	Compactor, Trench Roller, Vib 32" w	Rollers	150	217	1	Diesel	20	0.38		
BC-Bethany-06	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	380.13	217	2	Diesel	384	0.38		
BC-Bethany-06	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	25.43	217	0	Diesel	384	0.38		
BC-Bethany-06	Water Pump, 4" Diesel	Pumps	20	217	0	Diesel	10	0.74		
BC-Bethany-06	Water Pump, 4" Diesel	Pumps	30	217	0	Diesel	10	0.74		
BC-Bethany-06	Water Pump, 4" Diesel	Pumps	22.84	217	0	Diesel	10	0.74		
BC-Bethany-06	CAT 825, Roller	Rollers	25.43	217	0	Diesel	315	0.38		
BC-Bethany-06	400A Diesel Welder, Trailer Mounted	Welder	300	217	1	Diesel	33	0.45		
BC-Bethany-06	400A Diesel Welder, Trailer Mounted	Welder	81.25	217	0	Diesel	33	0.45		
BC-Bethany-06	Air Compressor 1600 cfm	Air Compressor	150	217	1	Diesel - Tier 4	540	0.48		
BC-Bethany-06	Air Compressor 185 cfm	Air Compressor	875.98	217	4	Diesel - Tier 4	49	0.48		
BC-Bethany-06	Air Compressor 185 cfm	Air Compressor	901.54	217	4	Diesel - Tier 4	49	0.48		
BC-Bethany-06	Air Compressor 185 cfm	Air Compressor	1362.67	217	6	Diesel - Tier 4	49	0.48		
BC-Bethany-06	Air Compressor 185 cfm	Air Compressor	283	217	1	Diesel - Tier 4	49	0.48		
BC-Bethany-06	Air Compressor 185 cfm	Air Compressor	140.85	217	1	Diesel - Tier 4	49	0.48		
BC-Bethany-06	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	800	217	3.686635945	Diesel	110	0.36		
BC-Bethany-06	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	570	217	3	Diesel	110	0.36		
BC-Bethany-06	CAT 12 M	Grader	1440	217	7	Diesel	173	0.41		
BC-Bethany-06	Cat 613 C Self Loading Scraper	Scaper	40	217	0	Diesel	187	0.48		

BC-Bethany-06	CAT 950 H Wheel Loader	Rubber Tired Loaders	800	217	4	Diesel or Hybrid	130	0.36
BC-Bethany-06	CAT 950 H Wheel Loader	Rubber Tired Loaders	570	217	3	Diesel or Hybrid	130	0.36
BC-Bethany-06	CAT 962 H Wheel Loader	Rubber Tired Loaders	150	217	1	Diesel	230	0.36
BC-Bethany-06	CAT 962 H Wheel Loader	Rubber Tired Loaders	114.21	217	1	Diesel	230	0.36
BC-Bethany-06	CAT 988 H Wheel Loader	Rubber Tired Loaders	74.17	217	0	Diesel	400	0.36
BC-Bethany-06	CAT D3 LGP, Dozer	Crawler Tractor	325	217	1	Diesel or Hybrid	76	0.43
BC-Bethany-06	CAT IT28H, 10640 LB Tool Carrier	Rubber Tired Loaders	325	217	1	Diesel	145	0.36
BC-Bethany-06	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	300	217	1	Diesel - Tier 4	181	0.38
BC-Bethany-06	Grove RT Crane 30T, 160HP	Crane	875.98	217	4	Diesel	160	0.29
BC-Bethany-06	Grove RT Crane 30T, 160HP	Crane	140.85	217	1	Diesel	160	0.29
BC-Bethany-06	Grove RT Crane 55T, 247 hp	Crane	162.5	217	1	Diesel	247	0.29
BC-Bethany-06	Grove RT Crane 80T, 275hp	Crane	140.85	217	1	Diesel	275	0.29
BC-Bethany-06	Manitowoc 555 150T, 250' Boom	Crane	150	217	1	Diesel	340	0.29
BC-Bethany-06	Manitowoc 555 150T, 250' Boom	Crane	67.6	217	0	Diesel	340	0.29
BC-Bethany-06	Portable, 90 Kw, Diesel 158hp	Generator	150	217	1	Diesel - Tier 4	158	0.74
BC-Bethany-06	Portable, 90 Kw, Diesel 158hp	Generator	81.25	217	0	Diesel - Tier 4	158	0.74
BC-Bethany-06	Water Pump, 6" Diesel	Pumps	74.17	217	0	Diesel	13	0.74
BC-Bethany-06	Water Pump, 3" Gas, Diaphragm	Pumps	1300	217	6	Gasoline	10	0.74
BC-Bethany-07	Boom Truck, 12.5 Tn Boom	Crane	330	320	1	Diesel or Hybrid	100	0.29
BC-Bethany-07	CAT 14 M	Grader	135.14	320	0	Diesel	274	0.41
BC-Bethany-07	CAT CS-64, Roller, 15.7 Tn, 156HP	Rollers	67.57	320	0	Diesel	156	0.38
BC-Bethany-07	CAT D6 LGPDozer w winch	Crawler Tractor	8320	320	26	Diesel or Hybrid	179	0.43
BC-Bethany-07	CAT D6 LGPDozer w winch	Crawler Tractor	7808	320	8	Diesel or Hybrid	179	0.43
BC-Bethany-07	CAT D6 LGPDozer w winch	Crawler Tractor	2568	320	24	Diesel or Hybrid	179	0.43
BC-Bethany-07	CAT D6 LGPDozer w winch	Crawler Tractor	5720	320	18	Diesel or Hybrid	179	0.43
BC-Bethany-07	Air Compressor 185 cfm	Air Compressor	660	320	2	Diesel - Tier 4	49	0.48
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	50	320	0	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	4160	320	13	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	256	320	1	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	2860	320	9	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	140.13	320	0	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	68	320	0	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	3904	320	12	Diesel	110	0.36
BC-Bethany-07	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	1284	320	4	Diesel	110	0.36
BC-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	8320	320	26	Diesel	230	0.36
BC-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	7808	320	24	Diesel	230	0.36
BC-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	2568	320	8	Diesel	230	0.36
BC-Bethany-07	CAT 962 H Wheel Loader	Rubber Tired Loaders	5720	320	18	Diesel	230	0.36
BC-Bethany-07	CAT 966 GII Wheel Loader	Rubber Tired Loaders	135.14	320	0	Diesel	170	0.36
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	50	320	0	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	504	320	2	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	1280	320	4	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	256	320	1	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	1528	320	5	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	140.13	320	0	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	68	320	0	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 55T, 247 hp	Crane	776	320	2	Diesel	247	0.29
BC-Bethany-07	Grove RT Crane 80T, 275hp	Crane	8320	320	26	Diesel	275	0.29
BC-Bethany-07	Grove RT Crane 80T, 275hp	Crane	7808	320	24	Diesel	275	0.29
BC-Bethany-07	Grove RT Crane 80T, 275hp	Crane	2568	320	8	Diesel	275	0.29
BC-Bethany-07	Grove RT Crane 80T, 275hp	Crane	5720	320	18	Diesel	275	0.29
BC-Bethany-07	Manitowoc 14000, 200T, 5CY Clam, 223' Boom, Crane	Crane	4160	320	13	Diesel	340	0.29
BC-Bethany-07	Manitowoc 14000, 200T, 5CY Clam, 223' Boom, Crane	Crane	2860	320	9	Diesel	340	0.29
BC-Bethany-07	Manitowoc 14000, 200T, 5CY Clam, 223' Boom, Crane	Crane	3904	320	12	Diesel	340	0.29
BC-Bethany-07	Manitowoc 14000, 200T, 5CY Clam, 223' Boom, Crane	Crane	1284	320	4	Diesel	340	0.29
BC-Bethany-07	Manitowoc 555 150T, 250' Boom	Crane	1522	320	5	Diesel	340	0.29
BC-Bethany-07	Manitowoc 555 150T, 250' Boom	Crane	2560	320	8	Diesel	340	0.29
BC-Bethany-07	Manitowoc 555 150T, 250' Boom	Crane	1549.99	320	5	Diesel	340	0.29
BC-Bethany-07	Manitowoc 555 150T, 250' Boom	Crane	1008	320	3	Diesel	340	0.29
BC-Bethany-07	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	8320	320	26	Diesel	100	0.56
BC-Bethany-07	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	7808	320	24	Diesel	100	0.56
BC-Bethany-07	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	2568	320	8	Diesel	100	0.56
BC-Bethany-07	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	5720	320	18	Diesel	100	0.56
BC-Bethany-07	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	8320	320	26	Diesel	100	0.56
BC-Bethany-07	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	7808	320	24	Diesel	100	0.56
BC-Bethany-07	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	2568	320	8	Diesel	100	0.56
BC-Bethany-07	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	5720	320	18	Diesel	100	0.56
BC-Bethany-07	Slurry Trench Excavator, Hydromill/1000 HP	Bore Drill Rig	4160	320	13	Diesel	1000	0.5
BC-Bethany-07	Slurry Trench Excavator, Hydromill/1000 HP	Bore Drill Rig	4160	320	13	Diesel	1000	0.5
BC-Bethany-07	Slurry Trench Excavator, Hydromill/1000 HP	Bore Drill Rig	960	320	3	Diesel	1000	0.5
BC-Bethany-07	Slurry Trench Excavator, Hydromill/1000 HP	Bore Drill Rig	2560	320	8	Diesel	1000	0.5
BC-Bethany-07	Tremie Plant	Cement & Mortar Mix	504	320	2	Diesel	500	0.56
BC-Bethany-07	Tremie Plant	Cement & Mortar Mix	1280	320	4	Diesel	500	0.56
BC-Bethany-07	Tremie Plant	Cement & Mortar Mix	1528	320	5	Diesel	500	0.56
BC-Bethany-07	Tremie Plant	Cement & Mortar Mix	776	320	2	Diesel	500	0.56
BC-Bethany-07	Water Pump, 6" Diesel	Pumps	8320	320	26	Diesel	13	0.74
BC-Bethany-07	Water Pump, 6" Diesel	Pumps	7808	320	24	Diesel	13	0.74
BC-Bethany-07	Water Pump, 6" Diesel	Pumps	2568	320	8	Diesel	13	0.74
BC-Bethany-07	Water Pump, 6" Diesel	Pumps	5720	320	18	Diesel	13	0.74
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	170.5	1042	0	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	455.01	1042	0	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	113.75	1042	0	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	469.36	1042	0	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	565.8	1042	1	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	395.25	1042	0	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Plate, 22"x x 35"	Plate Compactors	913.87	1042	1	Diesel	8.5	0.43
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	170.5	1042	0	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	455.01	1042	0	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	113.75	1042	0	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	469.36	1042	0	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	565.8	1042	1	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	395.25	1042	0	Diesel	20	0.38
BC-Bethany-08	Compactor, Trench Roller, Vib 32"xw	Rollers	913.87	1042	1	Diesel	20	0.38
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1031.55	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1376.56	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	996.04	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	587.61	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1419.78	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1649.79	1042	2	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	2704.86	1042	3	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	3474.04	1042	3	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1442.25	1042	1	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	5613.24	1042	5	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	1604.38	1042	2	Diesel	33	0.45
BC-Bethany-08	400A Diesel Welder, Trailer Mounted	Welder	82.95	1042	0	Diesel	33	0.45
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1031.55	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1376.56	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	996.04	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	587.61	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1419.78	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1649.79	1042	2	Diesel - Tier 3	300	0.48

BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	2704.86	1042	3	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	3474.04	1042	3	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1442.25	1042	1	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	5613.24	1042	5	Diesel - Tier 3	300	0.48
BC-Bethany-08	Air Compressor 900 cfm	Air Compressor	1604.38	1042	2	Diesel - Tier 3	300	0.48
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	142.1	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	379.22	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	130.28	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	422.43	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	363.54	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	329.39	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	555.34	1042	1	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	19.44	1042	0	Diesel	50	0.42
BC-Bethany-08	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	721.36	1042	1	Diesel	50	0.42
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	170.5	1042	0	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	455.01	1042	0	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	113.75	1042	0	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	469.36	1042	0	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	565.8	1042	1	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	395.25	1042	0	Diesel	74	0.37
BC-Bethany-08	Bobcat 5630 Skid Steer Loader	Skid Loaders	913.87	1042	1	Diesel	74	0.37
BC-Bethany-08	Grove RT Crane 15T, 100hp	Crane	41.48	1042	0	Diesel	100	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1031.55	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1376.56	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	996.04	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	587.61	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1419.78	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1649.79	1042	2	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	2704.86	1042	3	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	3474.04	1042	3	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1442.25	1042	1	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	5613.24	1042	5	Diesel	247	0.29
BC-Bethany-08	Grove RT Crane 55T, 247 hp	Crane	1604.38	1042	2	Diesel	247	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	3094.65	1042	3	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	4129.68	1042	4	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	2988.11	1042	3	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	1762.82	1042	2	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	4259.34	1042	4	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	4949.36	1042	5	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	8114.58	1042	8	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	10422.13	1042	10	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	4326.76	1042	4	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	16839.72	1042	16	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	4813.15	1042	5	Diesel	340	0.29
BC-Bethany-08	Manitowoc 555 150T, 250' Boom	Crane	248.86	1042	0	Diesel	340	0.29
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1031.55	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1376.56	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	996.04	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	587.61	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1419.78	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1649.79	1042	2	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	2704.86	1042	3	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	3474.04	1042	3	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1442.25	1042	1	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	5613.24	1042	5	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	1604.38	1042	2	Diesel - Tier 4	158	0.74
BC-Bethany-08	Portable, 90 Kw, Diesel 158hp	Generator	82.95	1042	0	Diesel - Tier 4	158	0.74
BC-Bethany-09	CAT 14 M	Grader	4305.5	1941	2	Diesel	274	0.41
BC-Bethany-09	Air Compressor 1600 cfm	Air Compressor	4931.93	1941	3	Diesel - Tier 4	540	0.48
BC-Bethany-09	Fork Lift, 8000LB, RT, 4x4	Forklifts	8131	1941	4	Diesel	142	0.2
BC-Bethany-09	Fork Lift, 8000LB, RT, 4x4	Forklifts	9863.85	1941	5	Diesel	142	0.2
BC-Bethany-09	Grove RT Crane 30T, 160HP	Crane	7906	1941	4	Diesel	160	0.29
BC-Bethany-09	Grove RT Crane 30T, 160HP	Crane	4931.93	1941	3	Diesel	160	0.29
BC-Bethany-10	Boom Truck, 12.5 Tn Boom	Crane	5	1381	0	Diesel or Hybrid	100	0.29
BC-Bethany-10	Boom Truck, 12.5 Tn Boom	Crane	3650	1381	3	Diesel or Hybrid	100	0.29
BC-Bethany-10	CAT 14 M	Grader	164	1381	0	Diesel	274	0.41
BC-Bethany-10	CAT 14 M	Grader	205.01	1381	0	Diesel	274	0.41
BC-Bethany-10	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	102.5	1381	0	Diesel	156	0.38
BC-Bethany-10	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	82	1381	0	Diesel	156	0.38
BC-Bethany-10	CAT D6 LGP/Dozer w winch	Crawler Tractor	500	1381	0	Diesel or Hybrid	179	0.43
BC-Bethany-10	CAT D6 LGP/Dozer w winch	Crawler Tractor	559.44	1381	0	Diesel or Hybrid	179	0.43
BC-Bethany-10	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	500	1381	0	Diesel	384	0.38
BC-Bethany-10	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	3533.33	1381	3	Diesel	384	0.38
BC-Bethany-10	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	646.27	1381	0	Diesel	384	0.38
BC-Bethany-10	Water Pump, 4" Diesel	Pumps	17520	1381	13	Diesel	10	0.74
BC-Bethany-10	CAT 825, Roller	Rollers	50	1381	0.036205648	Diesel	315	0.38
BC-Bethany-10	Air Compressor 185 cfm	Air Compressor	10	1381	0.00724113	Diesel - Tier 4	49	0.48
BC-Bethany-10	CAT 12 M	Grader	25	1381	0.018102824	Diesel	173	0.41
BC-Bethany-10	CAT 12 M	Grader	883.33	1381	0.639630702	Diesel	173	0.41
BC-Bethany-10	CAT 390 MASS EXC	Excavator	50	1381	0.036205648	Diesel	534	0.38
BC-Bethany-10	CAT 962 H Wheel Loader	Rubber Tired Loaders	102.5	1381	0.074221579	Diesel	230	0.36
BC-Bethany-10	CAT 962 H Wheel Loader	Rubber Tired Loaders	82	1381	0.059377263	Diesel	230	0.36
BC-Bethany-10	CAT D3 LGP, Dozer	Crawler Tractor	100	1381	0.072411296	Diesel or Hybrid	76	0.43
BC-Bethany-10	CAT D3 LGP, Dozer	Crawler Tractor	3533.33	1381	2.558530051	Diesel or Hybrid	76	0.43
BC-Bethany-10	CAT D8RiI, Dozer w winch	Crawler Tractor	50	1381	0.036205648	Diesel	310	0.43
BC-Bethany-10	CAT D8RiI, Dozer w winch	Crawler Tractor	400	1381	0.289645185	Diesel	310	0.43
BC-Bethany-10	CAT D9R, Dozer w ripper	Crawler Tractor	706.67	1381	0.511708907	Diesel	410	0.43
BC-Bethany-10	Gradall, 1.50 Cy, 282 Hp	Excavator	50	1381	0.036205648	Diesel	282	0.38
BC-Bethany-10	Gradall, 1.50 Cy, 282 Hp	Excavator	400	1381	0.289645185	Diesel	282	0.38
BC-Bethany-10	Grout Mixer, 18 Hp	Cement & Mortar Mix	1813.3	1381	1.313034033	Diesel	18	0.56
BC-Bethany-10	Grout Pump/0-1100psi, 85cy/Hr,Trlr Mtd,120H	Pumps	1813.3	1381	1.313034033	Diesel	120	0.74
BC-Bethany-10	Grove RT Crane 30T, 160HP	Crane	1813.3	1381	1.313034033	Diesel	160	0.29
BC-Bethany-10	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	100	1381	0.072411296	Diesel	345	0.38
BC-Bethany-10	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	646.27	1381	0.467972484	Diesel	345	0.38
BC-Bethany-10	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	279.72	1381	0.202548878	Diesel	345	0.38
BC-Bethany-10	Manitowoc 555 150T, 250' Boom	Crane	10	1381	0.00724113	Diesel	340	0.29
BC-Bethany-10	Wall Tie Back Drill, Klemm KR806, 240 HP	Bore/Drill Rigs	1813.3	1381	1.313034033	Diesel	250	0.5
BC-Bethany-12	Boom Truck, 12.5 Tn Boom	Crane	400	1447	0.276434001	Diesel or Hybrid	100	0.29
BC-Bethany-12	Air Compressor 185 cfm	Air Compressor	400	1447	0.276434001	Diesel - Tier 4	49	0.48
BC-Bethany-12	Grove RT Crane 30T, 160HP	Crane	400	1447	0.276434001	Diesel	160	0.29
BC-Bethany-12	Manitowoc 555 150T, 250' Boom	Crane	20	1447	0.0138217	Diesel	340	0.29

BC-Bethany-13	Water Pump, 4" Diesel	Pumps	900	693	1.298701299	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	1140.0	693.0	1.6	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	2040.0	693.0	2.9	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	560.0	693.0	0.8	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	720.0	693.0	1.0	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	640.0	693.0	0.9	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	112.0	693.0	0.2	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	1020.0	693.0	1.5	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	1920.0	693.0	2.8	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	1560.0	693.0	2.3	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	960.0	693.0	1.4	Diesel	10	0.74
BC-Bethany-13	Water Pump, 4" Diesel	Pumps	119.7	693.0	0.2	Diesel	10	0.74
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	900.0	693.0	1.3	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	1140.0	693.0	1.6	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	2040.0	693.0	2.9	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	224	693	0.323232323	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	720	693	1.038961039	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	1020	693	1.471861472	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	1560	693	2.251082251	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	960	693	1.385281385	Diesel	74	0.37
BC-Bethany-13	Bobcat 5630 Skid Steer Loader	Skid Loaders	239.4	693	0.345454545	Diesel	74	0.37
BC-Bethany-13	CAT 12 M	Grader	112	693	0.161616162	Diesel	173	0.41
BC-Bethany-13	CAT 12 M	Grader	119.7	693	0.172727273	Diesel	173	0.41
BC-Bethany-13	CAT 349E w Sandvic 720 Cutting Head, 425HP	Excavator	1140	693	1.645021645	Diesel	425	0.38
BC-Bethany-13	CAT 349E w Sandvic 720 Cutting Head, 425HP	Excavator	2040	693	2.943722944	Diesel	425	0.38
BC-Bethany-13	CAT 349E w Sandvic 720 Cutting Head, 425HP	Excavator	720	693	1.038961039	Diesel	425	0.38
BC-Bethany-13	CAT 349E w Sandvic 720 Cutting Head, 425HP	Excavator	960	693	1.385281385	Diesel	425	0.38
BC-Bethany-13	CAT 962 H Wheel Loader	Rubber Tired Loaders	1087.87	693	1.56979798	Diesel	230	0.36
BC-Bethany-13	CAT 962 H Wheel Loader	Rubber Tired Loaders	995.55	693	1.436580087	Diesel	230	0.36
BC-Bethany-13	CAT 962 H Wheel Loader	Rubber Tired Loaders	583.93	693	0.842611833	Diesel	230	0.36
BC-Bethany-13	CAT 962 H Wheel Loader	Rubber Tired Loaders	813.68	693	1.174141414	Diesel	230	0.36
BC-Bethany-13	CAT 962 H Wheel Loader	Rubber Tired Loaders	1723.08	693	2.486406926	Diesel	230	0.36
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	400	693	0.577200577	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	900	693	1.298701299	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	1140	693	1.645021645	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	2040	693	2.943722944	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	1087.87	693	1.56979798	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	560	693	0.808080808	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	720	693	1.038961039	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	640	693	0.923520924	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	1020	693	1.471861472	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	1560	693	2.251082251	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	960	693	1.385281385	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	995.55	693	1.436580087	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	583.93	693	0.842611833	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	813.68	693	1.174141414	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT D5 LGP, Angle Dozer	Crawler Tractor	1723.08	693	2.486406926	Diesel or Hybrid	170	0.43
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	1800	693	2.597402597	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	2280	693	3.29004329	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	2040	693	2.943722944	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	4080	693	5.887445887	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	224	693	0.323232323	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	3120	693	4.502164502	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	1920	693	2.770562771	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	239.4	693	0.345454545	Diesel	165	0.36
BC-Bethany-13	CAT Mucker, Underground, 4.1CY, 165HP	Rubber Tired Loaders	1440	693	2.077922078	Diesel	165	0.36
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	400	693	0.577200577	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	900	693	1.298701299	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	1140	693	1.645021645	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	2040	693	2.943722944	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	560	693	0.808080808	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	720	693	1.038961039	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	640	693	0.923520924	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	112	693	0.161616162	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	1020	693	1.471861472	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	1560	693	2.251082251	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	960	693	1.385281385	Diesel	340	0.29
BC-Bethany-13	Manitowoc 555 150T, 250'Bm w Skip or Clam	Crane	119.7	693	0.172727273	Diesel	340	0.29
BC-Bethany-14	Boom Truck, 12.5 Tn Boom	Crane	309.57	377	0.821140584	Diesel or Hybrid	100	0.29
BC-Bethany-14	Boom Truck, 12.5 Tn Boom	Crane	235.27	377	0.624058355	Diesel or Hybrid	100	0.29
BC-Bethany-14	CAT D6 LGPDozer w winch	Crawler Tractor	5703.98	377	15.12992042	Diesel or Hybrid	179	0.43
BC-Bethany-14	Air Compressor 185 cfm	Air Compressor	619.13	377	1.642254642	Diesel - Tier 4	49	0.48
BC-Bethany-14	Air Compressor 185 cfm	Air Compressor	470.54	377	1.248116711	Diesel - Tier 4	49	0.48
BC-Bethany-14	Case 590 Supn Loader/Hoe, 110 hp	Rubber Tired Loaders	266.55	377	0.707029178	Diesel	110	0.36
BC-Bethany-14	Case 590 Supn Loader/Hoe, 110 hp	Rubber Tired Loaders	2851.99	377	7.564960212	Diesel	110	0.36
BC-Bethany-14	CAT 962 H Wheel Loader	Rubber Tired Loaders	5703.98	377	15.12992042	Diesel	230	0.36
BC-Bethany-14	Grove RT Crane 55T, 247 hp	Crane	266.55	377	0.707029178	Diesel	247	0.29
BC-Bethany-14	Grove RT Crane 55T, 247 hp	Crane	1904	377	5.050397878	Diesel	247	0.29
BC-Bethany-14	Grove RT Crane 80T, 275hp	Crane	5703.98	377	15.12992042	Diesel	275	0.29
BC-Bethany-14	Manitowoc 14000, 200T, 5CY Clam, 223' Boom,	Crane	285.2	377	0.756498674	Diesel	340	0.29
BC-Bethany-14	Manitowoc 555 150T, 250' Boom	Crane	2840	377	7.533156499	Diesel	340	0.29
BC-Bethany-14	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	5703.98	377	15.12992042	Diesel	100	0.56
BC-Bethany-14	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	5703.98	377	15.12992042	Diesel	100	0.56
BC-Bethany-14	Slurry Trench Excavator, Hydromill/876 hp	Bore Drill Rig	5703.98	377	15.12992042	Diesel	876	0.5
BC-Bethany-14	Tremie Plant	Cement & Mortar Mix	1904	377	5.050397878	Diesel	500	0.56
BC-Bethany-14	Water Pump, 6" Diesel	Pumps	5703.98	377	15.12992042	Diesel	13	0.74
BC-Bethany-15	CAT 14 M	Grader	50	276	0.18115942	Diesel	274	0.41
BC-Bethany-15	CAT 14 M	Grader	250	276	0.905797101	Diesel	274	0.41
BC-Bethany-15	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	125	276	0.452898551	Diesel	156	0.38
BC-Bethany-15	CAT D6 LGPDozer w winch	Crawler Tractor	100	276	0.362318841	Diesel or Hybrid	179	0.43
BC-Bethany-15	CAT 950 H Wheel Loader	Rubber Tired Loaders	100	276	0.362318841	Diesel or Hybrid	130	0.36
BC-Bethany-15	CAT 966 GI Wheel Loader	Rubber Tired Loaders	250	276	0.905797101	Diesel	170	0.36
BC-Bethany-15	CAT D3 LGP, Dozer	Crawler Tractor	100	276	0.362318841	Diesel or Hybrid	76	0.43
BC-Bethany-15	Water Pump, 3" Gas, Diaphragm	Pumps	800	276	2.898550725	Gasoline	10	0.74
BC-Bethany-16	CAT LOADER/HOE 416 E	Rubber Tired Loaders	20	181	0.110497238	Diesel	78	0.36
BC-Bethany-16	Air Compressor 375 cfm	Air Compressor	496	181	2.740331492	Diesel - Tier 4	122	0.48
BC-Bethany-16	Boom Truck, 12.5 Tn Boom	Crane	162.86	181	0.899779006	Diesel or Hybrid	100	0.29
BC-Bethany-16	CAT 14 M	Grader	706.15	181	3.901381215	Diesel	274	0.41
BC-Bethany-16	CAT 14 M	Grader	42.01	181	0.232099448	Diesel	274	0.41
BC-Bethany-16	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	706.15	181	3.901381215	Diesel	156	0.38
BC-Bethany-16	CAT D6 LGPDozer w winch	Crawler Tractor	168.02	181	0.928287293	Diesel or Hybrid	179	0.43
BC-Bethany-16	CAT D6 LGPDozer w winch	Crawler Tractor	706.15	181	3.901381215	Diesel or Hybrid	179	0.43
BC-Bethany-16	Compactor, Trench Roller, Vib 32" w	Rollers	706.15	181	3.901381215	Diesel	20	0.38
BC-Bethany-16	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	168.02	181	0.928287293	Diesel	384	0.38
BC-Bethany-16	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	706.15	181	3.901381215	Diesel	384	0.38
BC-Bethany-16	Water Pump, 4" Diesel	Pumps	353.08	181	1.950718232	Diesel	10	0.74

BC-Bethany-16	CAT 825, Roller	Rollers	706.15	181	3.901381215	Diesel	315	0.38
BC-Bethany-16	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	706.15	181	3.901381215	Diesel	110	0.36
BC-Bethany-16	CAT 950 H Wheel Loader	Rubber Tired Loaders	100	181	0.552486188	Diesel or Hybrid	130	0.36
BC-Bethany-16	CAT 950 H Wheel Loader	Rubber Tired Loaders	905	181	5	Diesel or Hybrid	130	0.36
BC-Bethany-16	CAT CS-74, Roller, 17 tn, 156 HP	Rollers	100	181	0.552486188	Diesel	156	0.38
BC-Bethany-16	CAT D3 LGP, Dozer	Crawler Tractor	100	181	0.552486188	Diesel or Hybrid	76	0.43
BC-Bethany-16	CAT D3 LGP, Dozer	Crawler Tractor	706.15	181	3.901381215	Diesel or Hybrid	76	0.43
BC-Bethany-16	Conc Pump, Trk Mtd, 117 cy/hr, 210hp	Off-Highway Truck	905	181	5	Diesel - Tier 4	210	0.38
BC-Bethany-16	Fork Lift, 8000LB, RT, 4x4	Forklifts	248	181	1.370165746	Diesel	142	0.2
BC-Bethany-16	Grout Mixer, 18 Hp	Cement & Mortar Mix	496	181	2.740331492	Diesel	18	0.56
BC-Bethany-16	Grout Pump 100	Pumps	496	181	2.740331492	Diesel	100	0.74
BC-Bethany-16	Grove RT Crane 30T, 160HP	Crane	248	181	1.370165746	Diesel	160	0.29
BC-Bethany-16	Grove RT Crane 80T, 275hp	Crane	253.33	181	1.39961326	Diesel	275	0.29
BC-Bethany-16	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	905	181	5	Diesel	345	0.38
BC-Bethany-16	Manitowoc 555 150T, 250' Boom	Crane	253.33	181	1.39961326	Diesel	340	0.29
BC-Bethany-16	Manitowoc 555 150T, 250' Boom	Crane	700.01	181	3.867458564	Diesel	340	0.29
BC-Bethany-16	Manitowoc 555 150T, 250' Boom	Crane	190	181	1.049723757	Diesel	340	0.29
BC-Bethany-16	Mobile Screen, Locotrac, 142HP	Cement & Mortar Mix	706.15	181	3.901381215	Diesel	142	0.56
BC-Bethany-16	Mobile Screen, Locotrac, 142HP	Cement & Mortar Mix	905	181	5	Diesel	142	0.56
BC-Bethany-16	Pipe Internal Mortor Lining Applicator	Pumps	496	181	2.740331492	Diesel	50	0.74
BC-Bethany-16	Portable, 50 Kw, Diesel 85hp	Generator	12960	181	71.60220994	Diesel - Tier 4	85	0.74
BC-Bethany-16	Portable, 90 Kw, Diesel 158hp	Generator	496	181	2.740331492	Diesel - Tier 4	158	0.74
BC-Bethany-16	Pug Mill, 400 cy/hr, w/200 kw Gen	Generator	905	181	5	Diesel - Tier 4	300	0.74
BC-Bethany-16	Sand Blaster, Trailer Mounted	Pumps	496	181	2.740331492	Diesel	49	0.74
BC-Bethany-16	Water Pump, 3' Trash, Elec, 225GPM	Pumps	97200	181	537.0165746	Electric	1.118549807	0.74
BC-Bethany-17	400A Diesel Welder, Trailer Mounted	Welder	1120	810	1.382716049	Diesel	33	0.45
BC-Bethany-17	Manitowoc 555 150T, 250' Boom	Crane	180	810	0.222222222	Diesel	340	0.29
BC-Bethany-17	Manitowoc 555 150T, 250' Boom	Crane	1120	810	1.382716049	Diesel	340	0.29
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	75	803	0.093399751	Diesel - Tier 4	122	0.48
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	100	803	0.124533001	Diesel - Tier 4	122	0.48
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	125	803	0.155666252	Diesel - Tier 4	122	0.48
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	200	803	0.249066002	Diesel - Tier 4	122	0.48
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	1350	803	1.681195517	Diesel - Tier 4	122	0.48
BC-Bethany-18	Air Compressor 375 cfm	Air Compressor	16500	803	20.54794521	Diesel - Tier 4	122	0.48
BC-Bethany-18	Boom Truck, 12.5 Tn Boom	Crane	601.52	803	0.749090909	Diesel or Hybrid	100	0.29
BC-Bethany-18	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	200	803	0.249066002	Diesel	156	0.38
BC-Bethany-18	CAT D6 LGPDozer w winch	Crawler Tractor	16500	803	20.54794521	Diesel or Hybrid	179	0.43
BC-Bethany-18	Compactor, Plate, 22"x x 35"	Plate Compactors	150	803	0.186799502	Diesel	8.5	0.43
BC-Bethany-18	Compactor, Plate, 22"x x 35"	Plate Compactors	200	803	0.249066002	Diesel	8.5	0.43
BC-Bethany-18	Compactor, Plate, 22"x x 35"	Plate Compactors	250	803	0.311332503	Diesel	8.5	0.43
BC-Bethany-18	Compactor, Plate, 22"x x 35"	Plate Compactors	2700	803	3.362391034	Diesel	8.5	0.43
BC-Bethany-18	Compactor, Trench Roller, Vib 32" w	Rollers	75	803	0.093399751	Diesel	20	0.38
BC-Bethany-18	Compactor, Trench Roller, Vib 32" w	Rollers	125	803	0.155666252	Diesel	20	0.38
BC-Bethany-18	Compactor, Trench Roller, Vib 32" w	Rollers	1350	803	1.681195517	Diesel	20	0.38
BC-Bethany-18	400A Diesel Welder, Trailer Mounted	Welder	150	803	0.186799502	Diesel	33	0.45
BC-Bethany-18	400A Diesel Welder, Trailer Mounted	Welder	200	803	0.249066002	Diesel	33	0.45
BC-Bethany-18	400A Diesel Welder, Trailer Mounted	Welder	250	803	0.311332503	Diesel	33	0.45
BC-Bethany-18	400A Diesel Welder, Trailer Mounted	Welder	400	803	0.498132005	Diesel	33	0.45
BC-Bethany-18	400A Diesel Welder, Trailer Mounted	Welder	2700	803	3.362391034	Diesel	33	0.45
BC-Bethany-18	Air Compressor 1600 cfm	Air Compressor	75	803	0.093399751	Diesel - Tier 4	540	0.48
BC-Bethany-18	Air Compressor 1600 cfm	Air Compressor	100	803	0.124533001	Diesel - Tier 4	540	0.48
BC-Bethany-18	Air Compressor 1600 cfm	Air Compressor	125	803	0.155666252	Diesel - Tier 4	540	0.48
BC-Bethany-18	Air Compressor 1600 cfm	Air Compressor	200	803	0.249066002	Diesel - Tier 4	540	0.48
BC-Bethany-18	Air Compressor 1600 cfm	Air Compressor	1350	803	1.681195517	Diesel - Tier 4	540	0.48
BC-Bethany-18	Air Compressor 185 cfm	Air Compressor	100	803	0.124533001	Diesel - Tier 4	49	0.48
BC-Bethany-18	Air Compressor 185 cfm	Air Compressor	200	803	0.249066002	Diesel - Tier 4	49	0.48
BC-Bethany-18	Air Compressor 185 cfm	Air Compressor	1203.03	803	1.498169365	Diesel - Tier 4	49	0.48
BC-Bethany-18	Auger, Drilled Pier, 48-60", 484 Hp	Bore/Drill Rigs	16500	803	20.54794521	Diesel	484	0.5
BC-Bethany-18	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	200	803	0.249066002	Diesel	110	0.36
BC-Bethany-18	CAT 950 H Wheel Loader	Rubber Tired Loaders	16500	803	20.54794521	Diesel or Hybrid	130	0.36
BC-Bethany-18	CAT 966 Gil Wheel Loader	Rubber Tired Loaders	4125	803	5.136986301	Diesel	170	0.36
BC-Bethany-18	Conc Pump, Trk Mtd, 117 cy/hr, 210hp	Off-Highway Truck	10368.6	803	12.91232877	Diesel - Tier 4	210	0.38
BC-Bethany-18	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	150	803	0.186799502	Diesel - Tier 4	181	0.38
BC-Bethany-18	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	200	803	0.249066002	Diesel - Tier 4	181	0.38
BC-Bethany-18	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	250	803	0.311332503	Diesel - Tier 4	181	0.38
BC-Bethany-18	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	400	803	0.498132005	Diesel - Tier 4	181	0.38
BC-Bethany-18	Conc Pump, Trlr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	2700	803	3.362391034	Diesel - Tier 4	181	0.38
BC-Bethany-18	Grove RT Crane 30T, 160HP	Crane	30	803	0.0373599	Diesel	160	0.29
BC-Bethany-18	Grove RT Crane 55T, 247 hp	Crane	200	803	0.249066002	Diesel	247	0.29
BC-Bethany-18	Grove RT Crane 55T, 247 hp	Crane	16500	803	20.54794521	Diesel	247	0.29
BC-Bethany-18	Grove RT Crane 55T, 247 hp	Crane	10368.6	803	12.91232877	Diesel	247	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	75	803	0.093399751	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	100	803	0.124533001	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	125	803	0.155666252	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	200	803	0.249066002	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	1350	803	1.681195517	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	1203.03	803	1.498169365	Diesel	340	0.29
BC-Bethany-18	Manitowoc 555 150T, 250' Boom	Crane	14386.43	803	17.91585305	Diesel	340	0.29
BC-Bethany-18	Portable, 90 Kw, Diesel 158hp	Generator	75	803	0.093399751	Diesel - Tier 4	158	0.45
BC-Bethany-18	Portable, 90 Kw, Diesel 158hp	Generator	100	803	0.124533001	Diesel - Tier 4	158	0.45
BC-Bethany-18	Portable, 90 Kw, Diesel 158hp	Generator	125	803	0.155666252	Diesel - Tier 4	158	0.45
BC-Bethany-18	Portable, 90 Kw, Diesel 158hp	Generator	200	803	0.249066002	Diesel - Tier 4	158	0.45
BC-Bethany-18	Portable, 90 Kw, Diesel 158hp	Generator	1350	803	1.681195517	Diesel - Tier 4	158	0.45
BC-Bethany-18	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	16500	803	20.54794521	Diesel	100	0.56
BC-Bethany-18	Tremie Plant	Cement & Mortar Mix	10368.6	803	12.91232877	Diesel	500	0.56
BC-Bethany-18	Water Pump, 6" Diesel	Pumps	16500	803	20.54794521	Diesel	13	0.74
BC-Bethany-19	CAT 14 M	Grader	90.04	69	1.304927536	Diesel	274	0.41
BC-Bethany-19	CAT 14 M	Grader	118.95	69	1.723913043	Diesel	274	0.41
BC-Bethany-19	CAT D6 LGPDozer w winch	Crawler Tractor	360.16	69	5.219710145	Diesel or Hybrid	179	0.43
BC-Bethany-19	CAT D6 LGPDozer w winch	Crawler Tractor	475.79	69	6.895507246	Diesel or Hybrid	179	0.43
BC-Bethany-19	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	360.16	69	5.219710145	Diesel	384	0.38
BC-Bethany-19	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	475.79	69	6.895507246	Diesel	384	0.38
BC-Bethany-19	Light Plant, 4 lite, 1000w, Tower/Mast	Generator	720.32	69	10.43942029	Diesel	12	0.74
BC-Bethany-19	Light Plant, 4 lite, 1000w, Tower/Mast	Generator	951.58	69	13.79101449	Diesel	12	0.74
BC-Bethany-19	Water Pump, 4" Diesel	Pumps	360.16	69	5.219710145	Diesel	10	0.74
BC-Bethany-19	Water Pump, 4" Diesel	Pumps	475.79	69	6.895507246	Diesel	10	0.74
BC-Bethany-19	Bobcat S630 Skid Steer Loader	Skid Loaders	360.16	69	5.219710145	Diesel	74	0.37
BC-Bethany-19	CAT 950 H Wheel Loader	Rubber Tired Loaders	74.9	69	1.085507246	Diesel or Hybrid	130	0.36
BC-Bethany-19	CAT CS-74, Roller, 17 tn, 156 HP	Rollers	74.9	69	1.085507246	Diesel	156	0.38
BC-Bethany-19	CAT D3 LGP, Dozer	Crawler Tractor	74.9	69	1.085507246	Diesel or Hybrid	76	0.43
BC-Bethany-20	Air Compressor 185 cfm	Air Compressor	6000	640	9.375	Diesel - Tier 4	49	0.48
BC-Bethany-20	Grove RT Crane 80T, 275hp	Crane	400	640	0.625	Diesel	275	0.29
BC-Bethany-21	Air Compressor 375 cfm	Air Compressor	1435	160	8.96875	Diesel - Tier 4	122	0.48
BC-Bethany-21	Air Compressor 375 cfm	Air Compressor	215	160	1.34375	Diesel - Tier 4	122	0.48
BC-Bethany-21	Boom Truck, 12.5 Tn Boom	Crane	40	160	0.25	Diesel or Hybrid	100	0.29
BC-Bethany-21	Boom Truck, 12.5 Tn Boom	Crane	50	160	0.3125	Diesel or Hybrid	100	0.29
BC-Bethany-21	Air Compressor 185 cfm	Air Compressor	80	160	0.5	Diesel - Tier 4	49	0.48
BC-Bethany-21	Air Compressor 185 cfm	Air Compressor	100	160	0.625	Diesel - Tier 4	49	0.48
BC-Bethany-21	Auger, Drilled Pier, 48-60", 484 Hp	Bore/Drill Rigs	1435	160	8.96875	Diesel	484	0.5
BC-Bethany-21	Auger, Drilled Pier, 48-60", 484 Hp	Bore/Drill Rigs	215	160	1.34375	Diesel	484	0.5
BC-Bethany-21	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	1435	160	8.96875	Diesel	110	0.36

BC-Bethany-21	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	215	160	1.34375	Diesel	110	0.36
BC-Bethany-21	CAT 953 Track Loader, 2.25cy, 148hp	Skid Loaders	1435	160	8.96875	Diesel or Hybrid	110	0.37
BC-Bethany-21	CAT 953 Track Loader, 2.25cy, 148hp	Skid Loaders	215	160	1.34375	Diesel or Hybrid	110	0.37
BC-Bethany-21	Grove RT Crane 15T, 100hp	Crane	717.5	160	4.484375	Diesel	100	0.29
BC-Bethany-21	Grove RT Crane 15T, 100hp	Crane	107.5	160	0.671875	Diesel	100	0.29
BC-Bethany-21	Manitowoc 555 150T, 250' Boom	Crane	1422.7	160	8.891875	Diesel	340	0.29
BC-Bethany-21	Manitowoc 555 150T, 250' Boom	Crane	211.89	160	1.3243125	Diesel	340	0.29
BC-Bethany-21	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	1435	160	8.96875	Diesel	100	0.56
BC-Bethany-21	Slurry Bentonite Mixing Plant, 150HP	Cement & Mortar Mix	215	160	1.34375	Diesel	100	0.56
BC-Bethany-21	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	1435	160	8.96875	Diesel	100	0.56
BC-Bethany-21	Slurry Desanding Plant, 200HP	Cement & Mortar Mix	215	160	1.34375	Diesel	100	0.56
BC-Bethany-21	Tremie Plant	Cement & Mortar Mix	1428.15	160	8.9259375	Diesel	500	0.56
BC-Bethany-21	Tremie Plant	Cement & Mortar Mix	213.04	160	1.3315	Diesel	500	0.56
BC-Bethany-21	Water Pump,3" Gas, Diaphragm	Pumps	1435	160	8.96875	Gasoline	10	0.74
BC-Bethany-21	Water Pump,3" Gas, Diaphragm	Pumps	215	160	1.34375	Gasoline	10	0.74
BC-Bethany-22	Air Compressor 375 cfm	Air Compressor	136.67	47	2.90787234	Diesel - Tier 4	122	0.48
BC-Bethany-22	400A Diesel Welder, Trailer Mounted	Welder	136.67	47	2.90787234	Diesel	33	0.45
BC-Bethany-22	CAT 950 H Wheel Loader	Rubber Tired Loaders	318.45	47	6.775531915	Diesel or Hybrid	130	0.36
BC-Bethany-22	Grout Mixer, 18 Hp	Cement & Mortar Mix	6	47	0.127659574	Diesel	18	0.56
BC-Bethany-22	Grout Pump/0-1100psi, 85cy/Hr,Trlr Mtd,120H	Pumps	6	47	0.127659574	Diesel	120	0.74
BC-Bethany-22	Grove RT Crane 30T, 160HP	Crane	6	47	0.127659574	Diesel	160	0.29
BC-Bethany-22	Grove RT Crane 55T, 247 hp	Crane	136.67	47	2.90787234	Diesel	247	0.29
BC-Bethany-22	Grove RT Crane 55T, 247 hp	Crane	318.45	47	6.775531915	Diesel	247	0.29
BC-Bethany-22	Manitowoc 555 150T, 250' Boom	Crane	136.67	47	2.90787234	Diesel	340	0.29
BC-Bethany-22	Manitowoc 555 150T, 250' Boom	Crane	318.45	47	6.775531915	Diesel	340	0.29
BC-Bethany-22	Pile Vibro Driver/Extractor V20B	Other Construction Equipn	136.67	47	2.90787234	Diesel	325	0.42
BC-Bethany-22	Portable, 20 Kw, Diesel, 36HP	Generator	136.67	47	2.90787234	Diesel - Tier 4	3	0.45
BC-Bethany-22	Wall Tie Back Drill, Klemm KR806, 240 HP	Bore/Drill Rigs	6	47	0.127659574	Diesel	250	0.5
BC-Bethany-23	Grove RT Crane 80T, 275hp	Crane	2222.22	283	7.852367491	Diesel	275	0.29
BC-Bethany-24	Compactor, Plate, 22" w x 35"	Plate Compactors	179.59	180	0.997722222	Diesel	8.5	0.43
BC-Bethany-24	Compactor, Trench Roller, Vib 32" w	Rollers	179.59	180	0.997722222	Diesel	20	0.38
BC-Bethany-24	400A Diesel Welder, Trailer Mounted	Welder	543.21	180	3.017833333	Diesel	33	0.45
BC-Bethany-24	400A Diesel Welder, Trailer Mounted	Welder	489.74	180	2.720777778	Diesel	33	0.45
BC-Bethany-24	400A Diesel Welder, Trailer Mounted	Welder	499.22	180	2.773444444	Diesel	33	0.45
BC-Bethany-24	Air Compressor 900 cfm	Air Compressor	543.21	180	3.017833333	Diesel - Tier 3	300	0.48
BC-Bethany-24	Air Compressor 900 cfm	Air Compressor	489.74	180	2.720777778	Diesel - Tier 3	300	0.48
BC-Bethany-24	Air Compressor 900 cfm	Air Compressor	499.22	180	2.773444444	Diesel - Tier 3	300	0.48
BC-Bethany-24	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	0	180	0	Diesel	50	0.42
BC-Bethany-24	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	124.06	180	0.689222222	Diesel	50	0.42
BC-Bethany-24	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	243.44	180	1.352444444	Diesel	50	0.42
BC-Bethany-24	Bobcat 5630 Skid Steer Loader	Skid Loaders	179.59	180	0.997722222	Diesel	74	0.37
BC-Bethany-24	Grove RT Crane 55T, 247 hp	Crane	543.21	180	3.017833333	Diesel	247	0.29
BC-Bethany-24	Grove RT Crane 55T, 247 hp	Crane	489.74	180	2.720777778	Diesel	247	0.29
BC-Bethany-24	Grove RT Crane 55T, 247 hp	Crane	499.22	180	2.773444444	Diesel	247	0.29
BC-Bethany-24	Manitowoc 555 150T, 250' Boom	Crane	1629.64	180	9.053555556	Diesel	340	0.29
BC-Bethany-24	Manitowoc 555 150T, 250' Boom	Crane	1469.22	180	8.162333333	Diesel	340	0.29
BC-Bethany-24	Manitowoc 555 150T, 250' Boom	Crane	1497.65	180	8.320277778	Diesel	340	0.29
BC-Bethany-24	Portable, 90 Kw, Diesel 158hp	Generator	543.21	180	3.017833333	Diesel - Tier 4	158	0.45
BC-Bethany-24	Portable, 90 Kw, Diesel 158hp	Generator	489.74	180	2.720777778	Diesel - Tier 4	158	0.45
BC-Bethany-24	Portable, 90 Kw, Diesel 158hp	Generator	499.22	180	2.773444444	Diesel - Tier 4	158	0.45
BC-Bethany-25	Air Compressor 375 cfm	Air Compressor	569.33	96	5.930520833	Diesel - Tier 4	122	0.48
BC-Bethany-25	CAT 14 M	Grader	70.66	96	0.736041667	Diesel	274	0.41
BC-Bethany-25	CAT D6 LGPDozer w winch	Crawler Tractor	282.63	96	2.9440625	Diesel or Hybrid	179	0.43
BC-Bethany-25	Komatsu PC 600LC-8, 4.2 cy, 384 hp	Excavator	282.63	96	2.9440625	Diesel	384	0.38
BC-Bethany-25	Water Pump, 4" Diesel	Pumps	282.63	96	2.9440625	Diesel	10	0.74
BC-Bethany-25	400A Diesel Welder, Trailer Mounted	Welder	569.33	96	5.930520833	Diesel	33	0.45
BC-Bethany-25	Bobcat 5630 Skid Steer Loader	Skid Loaders	282.63	96	2.9440625	Diesel	74	0.37
BC-Bethany-25	CAT 950 H Wheel Loader	Rubber Tired Loaders	72	96	0.75	Diesel or Hybrid	130	0.36
BC-Bethany-25	CAT 950 H Wheel Loader	Rubber Tired Loaders	670	96	6.979166667	Diesel or Hybrid	130	0.36
BC-Bethany-25	CAT CS-74, Roller, 17 tn, 156 HP	Rollers	72	96	0.75	Diesel	156	0.38
BC-Bethany-25	CAT D3 LGP, Dozer	Crawler Tractor	72	96	0.75	Diesel or Hybrid	76	0.43
BC-Bethany-25	Grout Mixer, 18 Hp	Cement & Mortar Mix	278.33	96	2.899270833	Diesel	18	0.56
BC-Bethany-25	Grout Pump/0-1100psi, 85cy/Hr,Trlr Mtd,120H	Pumps	278.33	96	2.899270833	Diesel	120	0.74
BC-Bethany-25	Grove RT Crane 30T, 160HP	Crane	278.33	96	2.899270833	Diesel	160	0.29
BC-Bethany-25	Grove RT Crane 55T, 247 hp	Crane	569.33	96	5.930520833	Diesel	247	0.29
BC-Bethany-25	Grove RT Crane 55T, 247 hp	Crane	670	96	6.979166667	Diesel	247	0.29
BC-Bethany-25	Manitowoc 555 150T, 250' Boom	Crane	569.33	96	5.930520833	Diesel	340	0.29
BC-Bethany-25	Manitowoc 555 150T, 250' Boom	Crane	670	96	6.979166667	Diesel	340	0.29
BC-Bethany-25	Pile Vibro Driver/Extractor V20B	Other Construction Equipn	569.33	96	5.930520833	Diesel	325	0.42
BC-Bethany-25	Portable, 20 Kw, Diesel, 36HP	Generator	569.33	96	5.930520833	Diesel - Tier 4	3	0.45
BC-Bethany-25	Wall Tie Back Drill, Klemm KR806, 240 HP	Bore/Drill Rigs	278.33	96	2.899270833	Diesel	250	0.5
BC-Bethany-26	Grove RT Crane 80T, 275hp	Crane	160	76	2.105263158	Diesel	275	0.29
BC-Bethany-26	Grove RT Crane 80T, 275hp	Crane	300	76	3.947368421	Diesel	275	0.29
BC-Bethany-26	Manitowoc 555 150T, 250' Boom	Crane	30	76	0.394736842	Diesel	340	0.29
BC-Bethany-27	Compactor, Plate, 22" w x 35"	Plate Compactors	146.62	212	0.691603774	Diesel	8.5	0.43
BC-Bethany-27	Compactor, Plate, 22" w x 35"	Plate Compactors	129.08	212	0.608867925	Diesel	8.5	0.43
BC-Bethany-27	Compactor, Trench Roller, Vib 32" w	Rollers	146.62	212	0.691603774	Diesel	20	0.38
BC-Bethany-27	Compactor, Trench Roller, Vib 32" w	Rollers	129.08	212	0.608867925	Diesel	20	0.38
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	320.61	212	1.512311321	Diesel	33	0.45
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	84.95	212	0.400707547	Diesel	33	0.45
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	163.46	212	0.771037736	Diesel	33	0.45
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	83.2	212	0.39245283	Diesel	33	0.45
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	234.36	212	1.105471698	Diesel	33	0.45
BC-Bethany-27	400A Diesel Welder, Trailer Mounted	Welder	177.3	212	0.836320755	Diesel	33	0.45
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	320.61	212	1.512311321	Diesel - Tier 3	300	0.48
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	84.95	212	0.400707547	Diesel - Tier 3	300	0.48
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	163.46	212	0.771037736	Diesel - Tier 3	300	0.48
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	83.2	212	0.39245283	Diesel - Tier 3	300	0.48
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	234.36	212	1.105471698	Diesel - Tier 3	300	0.48
BC-Bethany-27	Air Compressor 900 cfm	Air Compressor	177.3	212	0.836320755	Diesel - Tier 3	300	0.48
BC-Bethany-27	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	0	212	0	Diesel	50	0.42
BC-Bethany-27	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	158.08	212	0.745660377	Diesel	50	0.42
BC-Bethany-27	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	206.12	212	0.972264151	Diesel	50	0.42
BC-Bethany-27	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	113.57	212	0.535707547	Diesel	50	0.42
BC-Bethany-27	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	99.97	212	0.471556604	Diesel	50	0.42
BC-Bethany-27	Bobcat 5630 Skid Steer Loader	Skid Loaders	146.62	212	0.691603774	Diesel	74	0.37
BC-Bethany-27	Bobcat 5630 Skid Steer Loader	Skid Loaders	129.08	212	0.608867925	Diesel	74	0.37
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	320.61	212	1.512311321	Diesel	247	0.29
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	84.95	212	0.400707547	Diesel	247	0.29
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	163.46	212	0.771037736	Diesel	247	0.29
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	83.2	212	0.39245283	Diesel	247	0.29
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	234.36	212	1.105471698	Diesel	247	0.29
BC-Bethany-27	Grove RT Crane 55T, 247 hp	Crane	177.3	212	0.836320755	Diesel	247	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	703.08	212	3.316415094	Diesel	340	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	961.84	212	4.536981132	Diesel	340	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	531.89	212	2.508915094	Diesel	340	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	254.84	212	1.202075472	Diesel	340	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	249.61	212	1.17740566	Diesel	340	0.29
BC-Bethany-27	Manitowoc 555 150T, 250' Boom	Crane	490.39	212	2.313160377	Diesel	340	0.29
BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	320.61	212	1.512311321	Diesel - Tier 4	158	0.45
BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	84.95	212	0.400707547	Diesel - Tier 4	158	0.45

BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	163.46	212	0.771037736	Diesel - Tier 4	158	0.45
BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	83.2	212	0.39245283	Diesel - Tier 4	158	0.45
BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	234.36	212	1.105471698	Diesel - Tier 4	158	0.45
BC-Bethany-27	Portable, 90 Kw, Diesel 158hp	Generator	177.3	212	0.836320755	Diesel - Tier 4	158	0.45
BC-Bethany-28	Boom Truck, 12.5 Tn Boom	Crane	3033.33	264	11.48988636	Diesel or Hybrid	100	0.29
BC-Bethany-28	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	20	264	0.075757576	Diesel	156	0.38
BC-Bethany-28	CAT D6 LGPDozer w winch	Crawler Tractor	285.38	264	1.080984848	Diesel or Hybrid	179	0.43
BC-Bethany-28	Compactor, Trench Roller, Vib 32" w	Rollers	150	264	0.568181818	Diesel	20	0.38
BC-Bethany-28	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	285.38	264	1.080984848	Diesel	384	0.38
BC-Bethany-28	400A Diesel Welder, Trailer Mounted	Welder	100	264	0.378787879	Diesel	33	0.45
BC-Bethany-28	Air Compressor 185 cfm	Air Compressor	3033.33	264	11.48988636	Diesel - Tier 4	49	0.48
BC-Bethany-28	Air Compressor 900 cfm	Air Compressor	100	264	0.378787879	Diesel - Tier 3	300	0.48
BC-Bethany-28	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	154.85	264	0.58655303	Diesel	50	0.42
BC-Bethany-28	CAT 12 M	Grader	71.35	264	0.270265152	Diesel	173	0.41
BC-Bethany-28	CAT 950 H Wheel Loader	Rubber Tired Loaders	20	264	0.075757576	Diesel or Hybrid	130	0.36
BC-Bethany-28	CAT 950 H Wheel Loader	Rubber Tired Loaders	150	264	0.568181818	Diesel or Hybrid	130	0.36
BC-Bethany-28	CAT CS-74, Roller, 17 tn, 156 HP	Rollers	150	264	0.568181818	Diesel	156	0.38
BC-Bethany-28	CAT D3 LGP, Dozer	Crawler Tractor	20	264	0.075757576	Diesel or Hybrid	76	0.43
BC-Bethany-28	CAT D3 LGP, Dozer	Crawler Tractor	150	264	0.568181818	Diesel or Hybrid	76	0.43
BC-Bethany-28	Grove RT Crane 30T, 160HP	Crane	3033.33	264	11.48988636	Diesel	160	0.29
BC-Bethany-28	Grove RT Crane 55T, 247 hp	Crane	100	264	0.378787879	Diesel	247	0.29
BC-Bethany-28	Manitowoc 555 150T, 250' Boom	Crane	100	264	0.378787879	Diesel	340	0.29
BC-Bethany-28	Portable, 90 Kw, Diesel 158hp	Generator	100	264	0.378787879	Diesel - Tier 4	158	0.45
BC-Bethany-29	Scissor Lift	Aerial Lifts	160	350	0.457142857	Diesel	63	0.31
BC-Bethany-29	Scissor Lift	Aerial Lifts	200	350	0.571428571	Diesel	63	0.31
BC-Bethany-29	Scissor Lift	Aerial Lifts	400	350	1.142857143	Diesel	63	0.31
BC-Bethany-29	Scissor Lift	Aerial Lifts	4000	350	11.42857143	Diesel	63	0.31
BC-Bethany-30	Manitowoc 555 150T, 250' Boom	Crane	6	18	0.333333333	Diesel	340	0.29
BC-Bethany-31	Grove RT Crane 55T, 247 hp	Crane	1000	100	10	Diesel	247	0.29
BC-Bethany-32	Boom Truck, 12.5 Tn Boom	Crane	2290	261	8.77394636	Diesel or Hybrid	100	0.29
BC-Bethany-32	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	28.27	261	0.108314176	Diesel	156	0.38
BC-Bethany-32	400A Diesel Welder, Trailer Mounted	Welder	538.41	261	2.062873563	Diesel	33	0.45
BC-Bethany-32	Air Compressor 185 cfm	Air Compressor	2290	261	8.77394636	Diesel - Tier 4	49	0.48
BC-Bethany-32	Air Compressor 900 cfm	Air Compressor	538.41	261	2.062873563	Diesel - Tier 3	300	0.48
BC-Bethany-32	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	254.47	261	0.974980843	Diesel	50	0.42
BC-Bethany-32	CAT 950 H Wheel Loader	Rubber Tired Loaders	28.27	261	0.108314176	Diesel or Hybrid	130	0.36
BC-Bethany-32	CAT D3 LGP, Dozer	Crawler Tractor	28.27	261	0.108314176	Diesel or Hybrid	76	0.43
BC-Bethany-32	Grove RT Crane 30T, 160HP	Crane	2290	261	8.77394636	Diesel	160	0.29
BC-Bethany-32	Grove RT Crane 55T, 247 hp	Crane	538.41	261	2.062873563	Diesel	247	0.29
BC-Bethany-32	Manitowoc 555 150T, 250' Boom	Crane	269.21	261	1.031455939	Diesel	340	0.29
BC-Bethany-32	Portable, 90 Kw, Diesel 158hp	Generator	538.41	261	2.062873563	Diesel - Tier 4	158	0.45
BC-Bethany-33	Boom Truck, 12.5 Tn Boom	Crane	1361.11	172	7.913430233	Diesel or Hybrid	100	0.29
BC-Bethany-33	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	20	172	0.11627907	Diesel	156	0.38
BC-Bethany-33	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	6.78	172	0.039418605	Diesel	156	0.38
BC-Bethany-33	400A Diesel Welder, Trailer Mounted	Welder	41.11	172	0.239011628	Diesel	33	0.45
BC-Bethany-33	Air Compressor 185 cfm	Air Compressor	1361.11	172	7.913430233	Diesel - Tier 4	49	0.48
BC-Bethany-33	Air Compressor 900 cfm	Air Compressor	41.11	172	0.239011628	Diesel - Tier 3	300	0.48
BC-Bethany-33	Bidwell Bridge Deck Screed-Finish, 50 HP	Other Construction Equipn	19.45	172	0.113081395	Diesel	50	0.42
BC-Bethany-33	CAT 950 H Wheel Loader	Rubber Tired Loaders	20	172	0.11627907	Diesel or Hybrid	130	0.36
BC-Bethany-33	CAT 950 H Wheel Loader	Rubber Tired Loaders	6.78	172	0.039418605	Diesel or Hybrid	130	0.36
BC-Bethany-33	CAT D3 LGP, Dozer	Crawler Tractor	20	172	0.11627907	Diesel or Hybrid	76	0.43
BC-Bethany-33	CAT D3 LGP, Dozer	Crawler Tractor	6.78	172	0.039418605	Diesel or Hybrid	76	0.43
BC-Bethany-33	Grove RT Crane 30T, 160HP	Crane	1361.11	172	7.913430233	Diesel	160	0.29
BC-Bethany-33	Grove RT Crane 55T, 247 hp	Crane	41.11	172	0.239011628	Diesel	247	0.29
BC-Bethany-33	Manitowoc 555 150T, 250' Boom	Crane	41.11	172	0.239011628	Diesel	340	0.29
BC-Bethany-33	Portable, 90 Kw, Diesel 158hp	Generator	41.11	172	0.239011628	Diesel - Tier 4	158	0.45
BC-Bethany-34	Boom Truck, 12.5 Tn Boom	Crane	25	54	0.462962963	Diesel or Hybrid	100	0.29
BC-Bethany-34	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	6.3	54	0.116666667	Diesel	156	0.38
BC-Bethany-34	400A Diesel Welder, Trailer Mounted	Welder	120	54	2.222222222	Diesel	33	0.45
BC-Bethany-34	Air Compressor 185 cfm	Air Compressor	100	54	1.851851852	Diesel - Tier 4	49	0.48
BC-Bethany-34	Air Compressor 900 cfm	Air Compressor	120	54	2.222222222	Diesel - Tier 3	300	0.48
BC-Bethany-34	CAT 950 H Wheel Loader	Rubber Tired Loaders	6.3	54	0.116666667	Diesel or Hybrid	130	0.36
BC-Bethany-34	CAT D3 LGP, Dozer	Crawler Tractor	6.3	54	0.116666667	Diesel or Hybrid	76	0.43
BC-Bethany-34	Grove RT Crane 30T, 160HP	Crane	25	54	0.462962963	Diesel	160	0.29
BC-Bethany-34	Grove RT Crane 55T, 247 hp	Crane	120	54	2.222222222	Diesel	247	0.29
BC-Bethany-34	Manitowoc 555 150T, 250' Boom	Crane	120	54	2.222222222	Diesel	340	0.29
BC-Bethany-34	Portable, 90 Kw, Diesel 158hp	Generator	120	54	2.222222222	Diesel - Tier 4	158	0.45
BC-Bethany-35	CAT CS-64, Roller, 15.7 tn, 156HP	Rollers	34.82	132	0.263787879	Diesel	156	0.38
BC-Bethany-35	CAT D6 LGPDozer w winch	Crawler Tractor	25	132	0.189393939	Diesel or Hybrid	179	0.43
BC-Bethany-35	Komatsu PC 600LC-8, 4.25 cy, 384 hp	Excavator	25	132	0.189393939	Diesel	384	0.38
BC-Bethany-35	150 Ton Crane	Crane	1342.86	132	10.17318182	Diesel	340	0.29
BC-Bethany-35	400A Diesel Welder, Trailer Mounted	Welder	40	132	0.303030303	Diesel	33	0.45
BC-Bethany-35	400A Diesel Welder, Trailer Mounted	Welder	150	132	1.136363636	Diesel	33	0.45
BC-Bethany-35	Air Compressor 900 cfm	Air Compressor	150	132	1.136363636	Diesel - Tier 3	300	0.48
BC-Bethany-35	Cable Pulling Rig	Bore/Drill Rigs	1342.86	132	10.17318182	Diesel	50	0.5
BC-Bethany-35	CAT 12 M	Grader	6.25	132	0.047348485	Diesel	173	0.41
BC-Bethany-35	CAT 950 H Wheel Loader	Rubber Tired Loaders	34.82	132	0.263787879	Diesel or Hybrid	130	0.36
BC-Bethany-35	CAT 973 Track Loader, 4.2 cy, 263hp	Skid Loaders	40	132	0.303030303	Diesel or Hybrid	210	0.37
BC-Bethany-35	CAT D3 LGP, Dozer	Crawler Tractor	34.82	132	0.263787879	Diesel or Hybrid	76	0.43
BC-Bethany-35	Derrick/Digger	Bore/Drill Rigs	1342.86	132	10.17318182	Diesel	380	0.38
BC-Bethany-35	Fork Lift, 8000LB, RT, 4x4	Forklifts	1342.86	132	10.17318182	Diesel	142	0.2
BC-Bethany-35	Grove RT Crane 55T, 247 hp	Crane	40	132	0.303030303	Diesel	247	0.29
BC-Bethany-35	Grove RT Crane 55T, 247 hp	Crane	75	132	0.568181818	Diesel	247	0.29
BC-Bethany-35	Manitowoc 555 150T, 250' Boom	Crane	40	132	0.303030303	Diesel	340	0.29
BC-Bethany-35	Portable, 20 Kw, Diesel, 36HP	Generator	1342.86	132	10.17318182	Diesel - Tier 4	3	0.45
BC-Bethany-35	Portable, 90 Kw, Diesel 158hp	Generator	150	132	1.136363636	Diesel - Tier 4	158	0.45
BC-Bethany-35	Trailer Mounted Cable Reel	Bore/Drill Rigs	1342.86	132	10.17318182	Diesel	50	0.5
BC-Bethany-36	CAT 390 MASS EXC	Excavator	405.64	49	8.278367347	Diesel	534	0.38
BC-Bethany-36	Grove RT Crane 80T, 275hp	Crane	140	49	2.857142857	Diesel	275	0.29
BC-Bethany-36	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	405.64	49	8.278367347	Diesel	345	0.38
BC-Bethany-37	150 Ton Crane	Crane	6699	427	15.68852459	Diesel	340	0.29
BC-Bethany-37	Areal Boom Lift	Aerial Lifts	9600	427	22.4824356	Diesel	63	0.31
BC-Bethany-37	Areal Boom Lift	Aerial Lifts	26796	427	62.75409836	Diesel	63	0.31
BC-Bethany-37	Cable Pulling Rig	Bore/Drill Rigs	4800	427	11.2412178	Diesel	50	0.5
BC-Bethany-37	Cable Pulling Rig	Bore/Drill Rigs	6699	427	15.68852459	Diesel	50	0.5
BC-Bethany-37	Fork Lift, 8000LB, RT, 4x4	Forklifts	4800	427	11.2412178	Diesel	142	0.2
BC-Bethany-37	Fork Lift, 8000LB, RT, 4x4	Forklifts	6699	427	15.68852459	Diesel	142	0.2
BC-Bethany-37	Portable, 20 Kw, Diesel, 36HP	Generator	4800	427	11.2412178	Diesel - Tier 4	3	0.45
BC-Bethany-37	Portable, 20 Kw, Diesel, 36HP	Generator	6699	427	15.68852459	Diesel - Tier 4	3	0.45
BC-Bethany-37	Scissor Lift	Aerial Lifts	19200	427	44.96487119	Diesel	63	0.31
BC-Bethany-37	Scissor Lift	Aerial Lifts	40194	427	94.13114754	Diesel	63	0.31
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	224	394	0.568527919	Diesel - Tier 4	122	0.48
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	924	394	2.345177665	Diesel - Tier 4	122	0.48
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	312	394	0.791878173	Diesel - Tier 4	122	0.48
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	333	394	0.845177665	Diesel - Tier 4	122	0.48
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	1296	394	3.289340102	Diesel - Tier 4	122	0.48
BC-Bethany-38	Air Compressor 375 cfm	Air Compressor	477	394	1.210659898	Diesel - Tier 4	122	0.48



BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	224	394	0.568527919	Diesel	247	0.29
BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	924	394	2.345177665	Diesel	247	0.29
BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	312	394	0.791878173	Diesel	247	0.29
BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	333	394	0.845177665	Diesel	247	0.29
BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	1296	394	3.289340102	Diesel	247	0.29
BC-Bethany-38	Grove RT Crane 55T, 247 hp	Crane	477	394	1.210659898	Diesel	247	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	520	394	1.319796954	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	224	394	0.568527919	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	924	394	2.345177665	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	720	394	1.827411168	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	312	394	0.791878173	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	333	394	0.845177665	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	1296	394	3.289340102	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	477	394	1.210659898	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	729.36	394	1.851167513	Diesel	340	0.29
BC-Bethany-38	Manitowoc 555 150T, 250' Boom	Crane	520.01	394	1.319822335	Diesel	340	0.29
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	224	394	0.568527919	Diesel - Tier 4	85	0.74
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	924	394	2.345177665	Diesel - Tier 4	85	0.74
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	312	394	0.791878173	Diesel - Tier 4	85	0.74
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	333	394	0.845177665	Diesel - Tier 4	85	0.74
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	1296	394	3.289340102	Diesel - Tier 4	85	0.74
BC-Bethany-38	Portable, 50 Kw, Diesel 85hp	Generator	477	394	1.210659898	Diesel - Tier 4	85	0.74
BC-Bethany-39	150 Ton Crane	Crane	1775	90	19.72222222	Diesel	340	0.29
BC-Bethany-39	Areal Boom Lift	Aerial Lifts	1775	90	19.72222222	Diesel	63	0.31
BC-Bethany-39	Cable Pulling Rig	Bore/Drill Rigs	1775	90	19.72222222	Diesel	50	0.5
BC-Bethany-39	Derrick/Digger	Bore/Drill Rigs	1775	90	19.72222222	Diesel	380	0.38
BC-Bethany-39	Fork Lift, 8000LB, RT, 4x4	Forklifts	1775	90	19.72222222	Diesel	142	0.2
BC-Bethany-39	Fork Lift, 8000LB, RT, 4x4	Forklifts	435	90	4.833333333	Diesel	142	0.2
BC-Bethany-39	Portable, 20 Kw, Diesel, 36HP	Generator	1775	90	19.72222222	Diesel - Tier 4	3	0.45
BC-Bethany-39	Portable, 20 Kw, Diesel, 36HP	Generator	435	90	4.833333333	Diesel - Tier 4	3	0.45
BC-Bethany-40	Grove RT Crane 80T, 275hp	Crane	90	42	2.142857143	Diesel	275	0.29
BC-Bethany-41	CAT LOADER/HOE 416 E	Rubber Tired Loaders	50	175	0.285714286	Diesel	78	0.36
BC-Bethany-41	CAT LOADER/HOE 416 E	Rubber Tired Loaders	200	175	1.142857143	Diesel	78	0.36
BC-Bethany-41	CAT LOADER/HOE 416 E	Rubber Tired Loaders	848.19	175	4.8468	Diesel	78	0.36
BC-Bethany-41	Asphalt Paver, 10-12 Ft Wide, Cat 224 HP	Paver	50	175	0.285714286	Diesel or Hybrid	224	0.42
BC-Bethany-41	Asphalt Roller, 17.6 Tn Pneumatic,133hp	Rollers	50	175	0.285714286	Diesel or Hybrid	133	0.38
BC-Bethany-41	Asphalt Rolller, 2 Drum 12tn, 137hp	Rollers	50	175	0.285714286	Diesel or Hybrid	137	0.38
BC-Bethany-41	Compactor, Plate, 22" w x 35"	Plate Compactors	511.73	175	2.924171429	Diesel	8.5	0.43
BC-Bethany-41	Bobcat 5630 Skid Steer Loader	Skid Loaders	400	175	2.285714286	Diesel	74	0.37
BC-Bethany-41	Bobcat 5630 Skid Steer Loader	Skid Loaders	1696.37	175	9.693542857	Diesel	74	0.37
BC-Bethany-41	Case 590 SupN Loader/Hoe, 110 hp	Rubber Tired Loaders	1023.47	175	5.8484	Diesel	110	0.36
BC-Bethany-41	CAT 950 H Wheel Loader	Rubber Tired Loaders	1023.47	175	5.8484	Diesel or Hybrid	130	0.36
BC-Bethany-42	CAT LOADER/HOE 416 E	Rubber Tired Loaders	102.5	28	3.660714286	Diesel	78	0.36
BC-Bethany-42	CAT 14 M	Grader	100	28	3.571428571	Diesel	274	0.41
BC-Bethany-42	Water Pump, 4" Diesel	Pumps	8.5	28	0.303571429	Diesel	10	0.74
BC-Bethany-42	CAT 12 M	Grader	27.64	28	0.987142857	Diesel	173	0.41
BC-Bethany-42	Cat 613 C Self Loading Scraper	Scaper	200	28	7.142857143	Diesel	187	0.48
BC-Bethany-42	CAT D3 LGP, Dozer	Crawler Tractor	110.57	28	3.948928571	Diesel or Hybrid	76	0.43
BC-Bethany-42	Farm Tractor, All Wheel Drive, 80 HP	Off-Highway Tractor	17	28	0.607142857	Diesel	80	0.44
BC-Bethany-42	Hydro Mulcher, 18 HP	Pumps	8.5	28	0.303571429	Diesel	25	0.74
BC-Bethany-42	Kobelco SK485LC, 2.75cy, 345 hp	Excavator	110.57	28	3.948928571	Diesel	345	0.38
BC-Bethany-43	Hydraulic 55 Ton Crane	Crane	715	36	19.86111111	Diesel	350	0.29
BC-Bethany-43	Manitowoc 777 200 Ton Crane	Crane	715	36	19.86111111	Diesel	760	0.29
BC-Bethany-44	Air Compressor 375 cfm	Air Compressor	300	115	2.608695652	Diesel - Tier 4	122	0.48
BC-Bethany-44	400A Diesel Welder, Trailer Mounted	Welder	150	115	1.304347826	Diesel	33	0.45
BC-Bethany-44	400A Diesel Welder, Trailer Mounted	Welder	600	115	5.217391304	Diesel	33	0.45
BC-Bethany-44	Air Compressor 1600 cfm	Air Compressor	300	115	2.608695652	Diesel - Tier 4	540	0.48
BC-Bethany-44	Conc Pump, Tirr Mtd, 100 cy/hr, 181hp	Off-Highway Truck	600	115	5.217391304	Diesel - Tier 4	181	0.38
BC-Bethany-44	Grove RT Crane 80T, 275hp	Crane	150	115	1.304347826	Diesel	275	0.29
BC-Bethany-44	Manitowoc 555 150T, 250' Boom	Crane	5	115	0.043478261	Diesel	340	0.29
BC-Bethany-44	Manitowoc 555 150T, 250' Boom	Crane	40	115	0.347826087	Diesel	340	0.29
BC-Bethany-44	Manitowoc 555 150T, 250' Boom	Crane	300	115	2.608695652	Diesel	340	0.29
BC-Bethany-44	Portable, 90 Kw, Diesel 158hp	Generator	300	115	2.608695652	Diesel - Tier 4	158	0.45

**Offroad Equipment (Electric) Inventory for Bethany Complex  
Option B2**

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BC-Bethany-05	400A, Electric Welder	40272.15	1913	14.4	303
BC-Bethany-06	Water Pump, 4" Electrical, Submersible	198.75	217	1	1
BC-Bethany-06	400A, Electric Welder	3564.04	217	14.4	237
BC-Bethany-06	Concrete Vibrator, 2"	2,163	217	3	30
BC-Bethany-07	400A, Electric Welder	1,320	320	14.4	59
BC-Bethany-07	Concrete Vibrator, 2"	1,028	320	3	10
BC-Bethany-08	Water Pump, 4" Electrical, Submersible	54627.36	1042	1	52.42548944
BC-Bethany-08	Concrete Vibrator, 2"	74467.84	1042	3	214.3987716
BC-Bethany-09	400A, Electric Welder	19727.71	1941	14.4	146.3570448
BC-Bethany-10	400A, Electric Welder	10	1381	14.4	0.104272266
BC-Bethany-12	400A, Electric Welder	400	1447	14.4	4
BC-Bethany-13	Water Pump, 4" Electrical, Submersible	1,680	693	1	2.424242424
BC-Bethany-14	400A, Electric Welder	1,090	377	14.4	41.62134748
BC-Bethany-14	Concrete Vibrator, 2"	533	377	3	4.242175066
BC-Bethany-16	Axial Fan 114000 cfm/minute	496	181	111.8549807	306.5197262
BC-Bethany-18	Water Pump, 4" Electrical, Submersible	1,850	803	1	2.303860523
BC-Bethany-18	400A, Electric Welder	1,203	803	14.4	21.57363885
BC-Bethany-18	Concrete Vibrator, 2"	16,650	803	3	62.20423412
BC-Bethany-20	400A, Electric Welder	6,000	640	14.4	135
BC-Bethany-21	400A, Electric Welder	180	160	14.4	16.2
BC-Bethany-24	Water Pump, 4" Electrical, Submersible	3,064	180	1	17.02411111
BC-Bethany-24	Concrete Vibrator, 2"	4,597	180	3	76.6085
BC-Bethany-26	400A, Electric Welder	600	76	14.4	113.6842105
BC-Bethany-27	Water Pump, 4" Electrical, Submersible	2,128	212	1	10.03665094
BC-Bethany-27	Concrete Vibrator, 2"	3191.65	212	3	45.16485849
BC-Bethany-28	Water Pump, 4" Electrical, Submersible	200	264	1	0.757575758
BC-Bethany-28	400A, Electric Welder	3033.33	264	14.4	165.4543636
BC-Bethany-28	Concrete Vibrator, 2"	200	264	3	2.272727273
BC-Bethany-32	Water Pump, 4" Electrical, Submersible	1076.83	261	1	4.125785441
BC-Bethany-32	400A, Electric Welder	2290	261	14.4	126.3448276
BC-Bethany-32	Concrete Vibrator, 2"	1076.83	261	3	12.37735632
BC-Bethany-33	Water Pump, 4" Electrical, Submersible	82.22	172	1	0.478023256
BC-Bethany-33	400A, Electric Welder	1361.11	172	14.4	113.9533953
BC-Bethany-33	Concrete Vibrator, 2"	82.22	172	3	1.434069767
BC-Bethany-34	Water Pump, 4" Electrical, Submersible	240	54	1	4.444444444
BC-Bethany-34	400A, Electric Welder	100	54	14.4	26.66666667
BC-Bethany-34	Concrete Vibrator, 2"	240	54	3	13.33333333
BC-Bethany-35	Water Pump, 4" Electrical, Submersible	300	132	1	2.272727273
BC-Bethany-35	Concrete Vibrator, 2"	300	132	3	6.818181818
BC-Bethany-38	400A, Electric Welder	10698	394	14.4	390.9928934
BC-Bethany-44	Water Pump, 4" Electrical, Submersible	300	115	1	2.608695652
BC-Bethany-44	Concrete Vibrator, 2"	2700	115	3	70.43478261
BC-Bethany-13	Light Plant, 4 lite, 1000w	30300	693		
BC-Bethany-16	Light Plant, 4 lite, 1000w	336	181		
BC-Bethany-38	Light Plant, 4 lite, 1000w	7132	394		

Vehicle Inventory for Bethany Complex  
Option B2

Code	Vehicle	Primary Trip Purpose/Location (within construction footprint vs. offsite)	# day	Vehicle Hours	Hours/Trip	# of Vehicles Trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency (gal/day) (if known)
Vehicle Use on Paved Roads --- and Not on Construction Site												
BC-Bethany-02	Water truck 4000 gal	Water from Lodi	284	0	1.1	0	0	Bethany Complex from Lodi	32	64	Diesel	
BC-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	297	738	1.1	692	2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-03	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	297	546	2.8	195	1	Bethany Complex from Sacramento	84	168	Diesel	
BC-Bethany-03	40 Ton Tractor & Trailer	General Materials from Stockton	297	6	1.1	6	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-03	40 Ton Tractor & Trailer	Rebar from Livermore	297	56	0.6	99	0	Bethany Complex from Livermore	17	34	Diesel	
BC-Bethany-03	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	297	104	0.0	3120	10.5	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-05	Pickup, 1/2T	General Materials from Stockton	1913	239	1.1	224	0.1	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1913	511	1.1	479	0.3	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-05	40 Ton Tractor & Trailer	Rebar from Livermore	1913	1837.133333	0.6	3242	2	Bethany Complex from Livermore	17	34	Diesel	
BC-Bethany-05	Bus, 50 Passenger, 646, 265 Hp	ies from Park and Ride Lots (Byron & Bethanv)	1913	1719.666667	0.3	5159	3	Bethany Complex from Park and Ride Lots (Byron & Bethanv)	10	20	Diesel	
BC-Bethany-05	Water truck 4000 gal	Water from Lodi	1913	0	1.1	0	0	Bethany Complex from Lodi	32	64	Diesel	
BC-Bethany-06	Pickup, 1/2T	General Materials from Stockton	217	73	1.1	68	0.3	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	217	118	1.1	111	1	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-06	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	217	3152	0.7	4503	21	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-06	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	217	130.2	0.7	186	1	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-06	40 Ton Tractor & Trailer	General Materials from Stockton	217	490	1.1	459	2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-06	40 Ton Tractor & Trailer	Rebar from Livermore	217	11	0.6	20	0.1	Bethany Complex from Livermore	17	34	Diesel	
BC-Bethany-06	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	217	14	0.0	422	1.9	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-07	Pickup, 1/2T	General Materials from Stockton	320	179	1.1	168	0.5	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	320	58	1.1	54	0.2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-07	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	320	215	0.7	307	1	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-07	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	320	196.0	2.8	70	0	Bethany Complex from Sacramento	84	168	Diesel	
BC-Bethany-07	40 Ton Tractor & Trailer	General Materials from Stockton	320	18.1	1.1	17	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-07	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	320	649	0.0	19465	61	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-08	Pickup, 1/2T	General Materials from Stockton	1042	484	1.1	454	0.4	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1042	1022	1.1	958	0.9	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-08	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	1042	1042	0.7	1488	1	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	1042	65.1	1.1	61	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-08	40 Ton Tractor & Trailer	Steel from Tracy	1042	0.0	0.3	0	0	Bethany Complex from Tracy	10	20	Diesel	
BC-Bethany-08	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	1042	843	0.0	25298	24.3	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-09	Pickup, 1/2T	General Materials from Stockton	1941	105	1.1	98	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-09	40 Ton Tractor & Trailer	Rebar from Livermore	1941	900	0.6	1588	1	Bethany Complex from Livermore	17	34	Diesel	
BC-Bethany-09	Bus, 50 Passenger, 646, 265 Hp	ies from Park and Ride Lots (Byron & Bethanv)	1941	297	0.3	892	0	Bethany Complex from Park and Ride Lots (Byron & Bethanv)	10	20	Diesel	
BC-Bethany-10	Pickup, 1/2T	General Materials from Stockton	1381	9	1.1	8	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1381	257	1.1	241	0.2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-10	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	1381	1435.0	0.7	2050	1	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-10	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	1381	1794.1	0.7	2563	2	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-12	Pickup, 1/2T	General Materials from Stockton	1447	9	1.1	8	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-13	Pickup, 1/2T	General Materials from Stockton	693	39	1.1	37	0.1	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-13	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	693	1138	0.7	1625	2.3	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-14	Pickup, 1/2T	General Materials from Stockton	377	65.1	1.1	61	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	377	20.3	1.1	19	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-14	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	377	39	2.8	14	0.0	Bethany Complex from Sacramento	84	168	Diesel	
BC-Bethany-14	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	377	6	0.0	175	0.5	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-15	Pickup, 1/2T	General Materials from Stockton	276	1	1.1	1	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-15	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	276	1	1.1	1	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-15	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	276	15.4	0.7	22	0	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-15	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 inch Minus from Vernalis	276	396.9	0.7	567	2	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-15	40 Ton Tractor & Trailer	General Materials from Stockton	276	1.066666667	1.1	1	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-16	Pickup, 1/2T	General Materials from Stockton	181	18	1.1	17	0.1	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-16	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	181	45	1.1	42	0.2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-16	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	181	193	0.7	275	1.5	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-16	20 Ton Flatbed Truck/End Dump	sand from Vernalis	181	1	0.7	2	0	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-16	40 Ton Tractor & Trailer	General Materials from Stockton	181	303	1.1	284	2	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-16	40 Ton Tractor & Trailer	steel pipe from Tracy	181	66	0.3	198	1	Bethany Complex from Tracy	10	20	Diesel	
BC-Bethany-16	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	181	254	0.0	7622	42	Bethany Complex from Bethany Complex Batch Plant	1	2	Diesel	
BC-Bethany-17	Pickup, 1/2T	General Materials from Stockton	810	21	1.1	20	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-17	40 Ton Tractor & Trailer	General Materials from Stockton	810	90	1.1	84	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-18	Pickup, 1/2T	General Materials from Stockton	803	237	1.1	222	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-18	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	803	403	1.1	378	0.5	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-18	20 Ton Flatbed Truck/End Dump	Pitrun Gravel 3 Inch Minus from Vernalis	803	613	0.7	875	1.1	Bethany Complex from Vernalis	21	42	Diesel	
BC-Bethany-18	20 Ton Flatbed Truck/End Dump	Slurry Wall Bentonite from Sacramento	803	235	2.8	84	0.1	Bethany Complex from Sacramento	84	168	Diesel	
BC-Bethany-18	40 Ton Tractor & Trailer	General Materials from Stockton	803	4	1.1	4	0.0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-18	40 Ton Tractor & Trailer	steel pipe from Tracy	803	22	0.3	67	0.1	Bethany Complex from Tracy	10	20	Diesel	
BC-Bethany-18	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	803	459	0.0	13775	17	ilex from Bethany Comals	1	2	Diesel	
BC-Bethany-19	Pickup, 1/2T	General Materials from Stockton	69	4	1.1	4	0	Bethany Complex from Stockton	32	64	Diesel	
BC-Bethany-19	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	69	72	0.7	103	1	thany Complex from Vern	21	42	Diesel	
BC-Bethany-20	Pickup, 1/2T	General Materials from Stockton	640	11	1.1	10	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-20	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	640	1796	1.1	1684	2	63125 Bethany Complex from Str	32	64	Diesel	
BC-Bethany-21	Pickup, 1/2T	General Materials from Stockton	160	18.86666667	1.1	19	0	0.08125 Bethany Complex from Str	32	64	Diesel	
BC-Bethany-21	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	160	20.26666667	1.1	19	0	0.11875 Bethany Complex from Str	32	64	Diesel	
BC-Bethany-22	Pickup, 1/2T	General Materials from Stockton	47	4.266666667	1.1	4	0	0.085106383 Bethany Complex from Str	32	64	Diesel	
BC-Bethany-22	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	47	4.266666667	1.1	4	0	0.085106383 Bethany Complex from Str	32	64	Diesel	
BC-Bethany-22	40 Ton Tractor & Trailer	Steel from Tracy	47	34.66666667	0.3	104	2	2.212765957 Bethany Complex from Tri	10	20	Diesel	
BC-Bethany-23	Pickup, 1/2T	General Materials from Stockton	283	4	1.1	4	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-24	Pickup, 1/2T	General Materials from Stockton	180	20	1.1	47	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-24	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	180	428	1.1	401	2	thany Complex from Stock	32	64	Diesel	
BC-Bethany-24	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	180	29	0.7	42	0	thany Complex from Vernu	21	42	Diesel	
BC-Bethany-24	40 Ton Tractor & Trailer	General Materials from Stockton	180	3	1.1	3	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-24	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	180	49	0.0	1483	8	ilex from Bethany Comals	1	2	Diesel	
BC-Bethany-25	Pickup, 1/2T	General Materials from Stockton	96	9	1.1	8	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-25	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	96	19	1.1	18	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-25	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	96	64	0.7	92	1	thany Complex from Vernu	21	42	Diesel	
BC-Bethany-25	40 Ton Tractor & Trailer	Steel from Tracy	96	90	0.3	269	3	ethany Complex from Tra	10	20	Diesel	
BC-Bethany-26	Pickup, 1/2T	General Materials from Stockton	76	6	1.1	6	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-26	40 Ton Tractor & Trailer	General Materials from Stockton	76	28	1.1	26	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-27	Pickup, 1/2T	General Materials from Stockton	212	66	1.1	62	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-27	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	212	384	1.1	360	2	thany Complex from Stock	32	64	Diesel	
BC-Bethany-27	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	212	45	0.7	64	0	thany Complex from Vernu	21	42	Diesel	
BC-Bethany-27	40 Ton Tractor & Trailer	General Materials from Stockton	212	19	1.1	18	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-27	Concrete Transit Mix Truck 12cy	icrete from Bethany Complex Batch P	212	34	0.0	1031	5	ilex from Bethany Comals	1	2	Diesel	
BC-Bethany-28	Pickup, 1/2T	General Materials from Stockton	264	33	1.1	31	0	thany Complex from Stock	32	64	Diesel	
BC-Bethany-28	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	264	250	1.1	234	1	thany Complex from Stock	32	64	Diesel	
BC-Bethany-28	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Verna	264	31	0.7	44	0	thany Complex from Vernu	21	42	Diesel	

BC Bethany-28	40 Ton Tractor & Trailer	General Materials from Stockton	264	109	1.1	102	0	thany Complex from Stock	32	64	Diesel
BC Bethany-28	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	264	16	0.0	477	2	glex from Bethany Complex	1	2	Diesel
BC Bethany-29	Pickup, 1/2T	General Materials from Stockton	350	14	1.1	11	0	thany Complex from Stock	32	64	Diesel
BC Bethany-29	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	350	85	1.1	80	0	thany Complex from Stock	32	64	Diesel
BC Bethany-29	40 Ton Tractor & Trailer	General Materials from Stockton	350	21	1.1	20	0	thany Complex from Stock	32	64	Diesel
BC Bethany-30	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	18	6	1.1	6	0	thany Complex from Stock	32	64	Diesel
BC Bethany-31	Pickup, 1/2T	General Materials from Stockton	100	4	1.1	4	0	thany Complex from Stock	32	64	Diesel
BC Bethany-31	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	100	6	1.1	6	0	thany Complex from Stock	32	64	Diesel
BC Bethany-32	Pickup, 1/2T	General Materials from Stockton	261	22	1.1	21	0	thany Complex from Stock	32	64	Diesel
BC Bethany-32	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	261	50	1.1	47	0	thany Complex from Stock	32	64	Diesel
BC Bethany-32	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Vernia	261	50	0.7	71	0	thany Complex from Vernia	21	42	Diesel
BC Bethany-32	40 Ton Tractor & Trailer	General Materials from Stockton	261	109	1.1	102	0	thany Complex from Stock	32	64	Diesel
BC Bethany-32	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	261	12	0.0	358	1	glex from Bethany Complex	1	2	Diesel
BC Bethany-33	Pickup, 1/2T	General Materials from Stockton	172	11	1.1	17	0	thany Complex from Stock	32	64	Diesel
BC Bethany-33	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	172	16	1.1	15	0	thany Complex from Stock	32	64	Diesel
BC Bethany-33	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Vernia	172	16	0.7	23	0	thany Complex from Vernia	21	42	Diesel
BC Bethany-33	40 Ton Tractor & Trailer	General Materials from Stockton	172	26	1.1	24	0	thany Complex from Stock	32	64	Diesel
BC Bethany-33	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	172	1	0.0	28	0	glex from Bethany Complex	1	2	Diesel
BC Bethany-34	Pickup, 1/2T	General Materials from Stockton	54	11	1.1	10	0	thany Complex from Stock	32	64	Diesel
BC Bethany-34	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	54	11	1.1	11	0	thany Complex from Stock	32	64	Diesel
BC Bethany-34	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Vernia	54	11	0.7	16	0	thany Complex from Vernia	21	42	Diesel
BC Bethany-34	40 Ton Tractor & Trailer	General Materials from Stockton	54	0	1.1	0	0	thany Complex from Stock	32	64	Diesel
BC Bethany-34	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	54	3	0.0	80	1	glex from Bethany Complex	1	2	Diesel
BC Bethany-35	Pickup, 1/2T	General Materials from Stockton	132	20	1.1	19	0	thany Complex from Stock	32	64	Diesel
BC Bethany-35	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	132	46	1.1	43	0	thany Complex from Stock	32	64	Diesel
BC Bethany-35	20 Ton Flatbed Truck/End Dump	Itun Gravel 3 Inch Minus from Vernia	132	62	0.7	88	1	thany Complex from Vernia	21	42	Diesel
BC Bethany-35	40 Ton Tractor & Trailer	General Materials from Stockton	132	3	1.1	3	0	thany Complex from Stock	32	64	Diesel
BC Bethany-35	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	132	23	0.0	681	5	glex from Bethany Complex	1	2	Diesel
BC Bethany-36	Pickup, 1/2T	General Materials from Stockton	49	2	1.1	2	0	thany Complex from Stock	32	64	Diesel
BC Bethany-37	Pickup, 1/2T	General Materials from Stockton	427	74	1.1	68	0	thany Complex from Stock	32	64	Diesel
BC Bethany-37	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	427	64	1.1	60	0	thany Complex from Stock	32	64	Diesel
BC Bethany-38	Pickup, 1/2T	General Materials from Stockton	394	27	1.1	25	0	thany Complex from Stock	32	64	Diesel
BC Bethany-38	20 Flatbed Truck/End Dump	General Materials from Stockton	394	57	1.1	53	0	thany Complex from Stock	32	64	Diesel
BC Bethany-38	40 Ton Tractor & Trailer	General Materials from Stockton	394	11	1.1	13	0	thany Complex from Stock	32	64	Diesel
BC Bethany-38	40 Ton Tractor & Trailer	steel pipe from Tracy	394	65	0.3	195	0	lethany Complex from Trax	10	20	Diesel
BC Bethany-39	Pickup, 1/2T	General Materials from Stockton	90	11	1.1	7	0	thany Complex from Stock	32	64	Diesel
BC Bethany-39	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	90	11	1.1	10	0	thany Complex from Stock	32	64	Diesel
BC Bethany-40	Pickup, 1/2T	General Materials from Stockton	42	2	1.1	2	0	thany Complex from Stock	32	64	Diesel
BC Bethany-40	40 Ton Tractor & Trailer	General Materials from Stockton	42	4	1.1	4	0	thany Complex from Stock	32	64	Diesel
BC Bethany-41	Pickup, 1/2T	General Materials from Stockton	175	14	1.1	13	0	thany Complex from Stock	32	64	Diesel
BC Bethany-41	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	175	244	1.1	229	1	thany Complex from Stock	32	64	Diesel
BC Bethany-41	20 Ton Flatbed Truck/End Dump	stball, Hot Mix Delivered from Vernia	175	175	0.7	445	1	thany Complex from Vernia	21	42	Diesel
BC Bethany-41	40 Ton Tractor & Trailer	General Materials from Stockton	175	4	1.1	4	0	thany Complex from Stock	32	64	Diesel
BC Bethany-42	Pickup, 1/2T	General Materials from Stockton	28	1	1.1	1	0	thany Complex from Stock	32	64	Diesel
BC Bethany-42	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	28	1	1.1	46	0	thany Complex from Stock	32	64	Diesel
BC Bethany-43	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	36	1	0.6	2	0	thany Complex from Stock	19	38	Diesel
BC Bethany-44	Pickup, 1/2T	General Materials from Stockton	115	11	1.1	11	0	thany Complex from Stock	32	64	Diesel
BC Bethany-44	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	115	12	1.1	11	0	thany Complex from Stock	32	64	Diesel
BC Bethany-44	40 Ton Tractor & Trailer	General Materials from Stockton	115	11	1.1	10	0	thany Complex from Stock	32	64	Diesel
BC Bethany-44	40 Ton Tractor & Trailer	steel pipe from Tracy	115	3	0.3	9	0	thany Complex from Stock	10	20	Diesel
BC Bethany-44	Concrete Transit Mix Truck 12cy	scrite from Bethany Complex Batch P	115	2	0.0	53	0	glex from Bethany Complex	1	2	Diesel
no access roads or park and ride lots --- on the Construction Site											
BC Bethany-03	CAT 730 30r Dump	Dummers	297.0	677	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	3196	Diesel or Hybrid
BC Bethany-03	Hiway-30r Dump	Off-Highway Truck	297.0	16	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	80	Diesel
BC Bethany-03	Trucking Off Highway CAT 730	Dummers	297.0	2791	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	13955	Diesel or Hybrid
BC Bethany-05	Antelope 344, 350 hp	Vehicle	359.0	12950	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	64000	Diesel or Hybrid
BC Bethany-05	Truck, Flatbed, 40 Hwy	Off-Highway Truck	1913.0	63250	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	316250	Diesel
BC Bethany-06	Cat 130ral w/Cat 770 51.9hp	Dummers	217.0	74	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	371	Diesel
BC Bethany-06	Truck, End Dump, 10-13cy, Hwy	Dummers	217.0	993	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	4963	Diesel
BC Bethany-06	CAT 740 40T, Articulated End Dump	Dummers	217.0	1597	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	7984	Diesel or Hybrid
BC Bethany-06	CAT 735, 35T, Articulated End Dump	Dummers	217.0	212	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	719	Diesel
BC Bethany-06	Truck & Bottom Dump, 21cy, 30T	Dummers	217.0	793	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	3963	Diesel
BC Bethany-06	Truck, Flatbed, 40 Hwy	Off-Highway Truck	217.0	150	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	730	Diesel
BC Bethany-07	CAT 730 30T, Articulated End Dump	Dummers	320.0	9764	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	12619	Diesel or Hybrid
BC Bethany-07	Truck, End Dump, 16-20cy, Hwy	Dummers	320.0	1542	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	7712	Diesel
BC Bethany-07	Truck, Flatbed, 40 Hwy	Off-Highway Truck	320	24930	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	124651	Diesel
BC Bethany-09	Vehicle	Vehicle	1941	12650	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	63449	Gasoline
BC Bethany-09	Ambulance, 44, 350 hp	Vehicle	1941	11865	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	59325	Diesel or Hybrid
BC Bethany-09	Fuel/Lube Truck	Off-Highway Truck	1941	7358	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	36790	Diesel
BC Bethany-09	Van, Passenger/Cargo, 2x4, 350hp	Vehicle	1941	7515	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	37375	Gasoline or Hybrid
BC Bethany-10	CAT 730 30T, Articulated End Dump	Dummers	1381	1852	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	9260	Diesel or Hybrid
BC Bethany-10	CAT735, 35T, Articulated End Dump	Dummers	1381	14333	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	71667	Diesel
BC Bethany-10	Truck, Flatbed, 40 Hwy	Off-Highway Truck	1381	1813	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	9067	Diesel
BC Bethany-13	CAT 730 30T, Articulated End Dump	Dummers	693	28781	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	143904	Diesel or Hybrid
BC Bethany-14	CAT 730 30T, Articulated End Dump	Dummers	377	22816	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	3193	Diesel or Hybrid
BC Bethany-14	Truck, End Dump, 16-20cy, Hwy	Dummers	377	800	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	3998	Diesel
BC Bethany-14	Truck, Flatbed, 40 Hwy	Off-Highway Truck	377	5971	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	29853	Diesel
BC Bethany-15	Truck, End Dump, 10-13cy, Hwy	Dummers	276	800	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	4000	Diesel
BC Bethany-16	CAT 730 30T, Articulated End Dump	Dummers	181	6380	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	31899	Diesel or Hybrid
BC Bethany-16	Truck, End Dump, 10-13cy, Hwy	Dummers	181	4925	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	24625	Diesel
BC Bethany-16	Truck, Flatbed, 40 Hwy	Off-Highway Truck	181	560	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	2800	Diesel
BC Bethany-16	Wildfire Rize	Off-Highway Truck	181	3080	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	15400	Diesel
BC Bethany-17	Truck, Flatbed, 40 Hwy	Off-Highway Truck	803	2880	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	14000	Diesel
BC Bethany-18	CAT 730 30T, Articulated End Dump	Dummers	803	16500	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	82100	Diesel or Hybrid
BC Bethany-18	Truck, Flatbed, 40 Hwy	Off-Highway Truck	803	18350	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	91750	Diesel
BC Bethany-19	CAT 730 30T, Articulated End Dump	Dummers	69	4180	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	20999	Diesel
BC Bethany-19	Truck, End Dump, 10-13cy, Hwy	Dummers	69	150	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	749	Diesel
BC Bethany-21	CAT 730 30T, Articulated End Dump	Dummers	160	825	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	4125	Diesel or Hybrid
BC Bethany-21	Truck, Flatbed, 40 Hwy	Off-Highway Truck	160	1650	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	8250	Diesel
BC Bethany-22	Truck, Flatbed, 40 Hwy	Off-Highway Truck	47	6	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	30	Diesel
BC Bethany-23	Truck, Flatbed, 40 Hwy	Off-Highway Truck	283	1111	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	5556	Diesel
BC Bethany-25	CAT 730 30T, Articulated End Dump	Dummers	96	1413	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	7066	Diesel or Hybrid
BC Bethany-25	Truck, End Dump, 10-13cy, Hwy	Dummers	96	144	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	720	Diesel
BC Bethany-25	Truck, Flatbed, 40 Hwy	Off-Highway Truck	96	278	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	1392	Diesel
BC Bethany-28	CAT 730 30T, Articulated End Dump	Dummers	264	1467	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	7135	Diesel or Hybrid
BC Bethany-28	Truck, End Dump, 10-13cy, Hwy	Dummers	264	750	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	3750	Diesel
BC Bethany-29	Truck, Flatbed, 40 Hwy	Off-Highway Truck	350	3180	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	15900	Diesel
BC Bethany-30	Truck, Flatbed, 40 Hwy	Off-Highway Truck	18	200	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	1000	Diesel
BC Bethany-32	CAT 730 30T, Articulated End Dump	Dummers	261	57	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	283	Diesel or Hybrid
BC Bethany-33	CAT 730 30T, Articulated End Dump	Dummers	172	54	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	268	Diesel or Hybrid
BC Bethany-34	CAT 730 30T, Articulated End Dump	Dummers	54	13	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	63	Diesel or Hybrid
BC Bethany-35	CAT 730 30T, Articulated End Dump	Dummers	132	70	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	348	Diesel or Hybrid
BC Bethany-35	CAT735, 35T, Articulated End Dump	Dummers	132	75	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	375	Diesel
BC Bethany-35	Line Truck	Off-Highway Truck	132	5371	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	26857	Diesel
BC Bethany-35	Service Truck, 3 / 4 Ton	Off-Highway Truck	132	1343	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	6714	Diesel
BC Bethany-36	CAT 740 40T, Articulated End Dump	Dummers	49	406	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	2028	Diesel or Hybrid
BC Bethany-37	Service Truck, 3 / 4 Ton	Off-Highway Truck	427	11499	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	57495	Diesel
BC Bethany-39	Service Truck, 3 / 4 Ton	Off-Highway Truck	90	1775	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	8875	Diesel
BC Bethany-40	Truck, Flatbed, 40 Hwy	Off-Highway Truck	42	90	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	450	Diesel
BC Bethany-41	Truck, End Dump, 10-13cy, Hwy	Dummers	175	256	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	1279	Diesel
BC Bethany-41	Truck, Flatbed, 40 Hwy	Off-Highway Truck	175	400	not applicable	not applicable	not applicable	n-site: assume 5 miles/hr	not applicable	2000	Diesel

**Employees Required to Bethany Complex  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/ One-way Trip/Day
BC-Bethany-01	Operator G4 Grade Check	15.54	10	Stockton to BC	32
BC-Bethany-01	Dozer Operator	31.08	10	Stockton to BC	32
BC-Bethany-01	General Foreman	15.54	10	Stockton to BC	32
BC-Bethany-01	Grader Operator	31.08	10	Stockton to BC	32
BC-Bethany-01	Scraper Operator	62.16	10	Stockton to BC	32
BC-Bethany-01 Total					
BC-Bethany-03	Bottomlander	1329.69	10	Stockton to BC	32
BC-Bethany-03	Bullgang Foreman	16	10	Stockton to BC	32
BC-Bethany-03	Bullgang Laborer	32	10	Stockton to BC	32
<b>BC-Bethany-03</b>	<b>Carpenter</b>	<b>637.11</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-03	Carpenter Foreman	159.28	10	Stockton to BC	32
BC-Bethany-03	Concrete Pump Operator	408	10	Stockton to BC	32
BC-Bethany-03	Crane Oiler	3403.74	10	Stockton to BC	32
BC-Bethany-03	Electrician	78.55	10	Stockton to BC	32
BC-Bethany-03	Excavator Operator	338.01	10	Stockton to BC	32
BC-Bethany-03	Flat Truck Driver	16	10	Stockton to BC	32
<b>BC-Bethany-03</b>	<b>General Foreman</b>	<b>1460</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-03	General Laborer	7292.02	10	Stockton to BC	32
BC-Bethany-03	Hyd Crane Operator	1437.23	10	Stockton to BC	32
BC-Bethany-03	Hyd Track Drill	314	10	Stockton to BC	32
BC-Bethany-03	Hydraulic Excavator to 3.5	314	10	Stockton to BC	32
BC-Bethany-03	Iron Worker	14342.26	10	Stockton to BC	32
BC-Bethany-03	Iron Worker Foreman	2228.87	10	Stockton to BC	32
BC-Bethany-03	Lead Miner	1785.37	10	Stockton to BC	32
BC-Bethany-03	Loader Operator	895.01	10	Stockton to BC	32
BC-Bethany-03	Mechanic / Welder	641	10	Stockton to BC	32
BC-Bethany-03	Mechanic Welder	1195.55	10	Stockton to BC	32
<b>BC-Bethany-03</b>	<b>Miner</b>	<b>13829.88</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-03	Shaft Crane Operator	3784.74	10	Stockton to BC	32
BC-Bethany-03	Shifter	3380.87	10	Stockton to BC	32
BC-Bethany-03	Toplander	2926.74	10	Stockton to BC	32
BC-Bethany-03	Truck Driver	677.16	10	Stockton to BC	32
BC-Bethany-03 Total					
BC-Bethany-05	Laborer G2 General	380041.11	10	Stockton to BC	32
BC-Bethany-05	Operator G3 BH-Loader>3/4cy	16000	10	Stockton to BC	32
<b>BC-Bethany-05</b>	<b>Laborer Foreman</b>	<b>16000</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-05	Operator G4a Boom truck<15 ton	20136.07	10	Stockton to BC	32
BC-Bethany-05	Teamster G1 Hwy ED<6cy, Flatbed	134976.07	10	Stockton to BC	32
BC-Bethany-05	Carpenter Journeyman	10400	10	Stockton to BC	32
BC-Bethany-05	Electrician Journeyman	10400	10	Stockton to BC	32
BC-Bethany-05	Iron Worker Foreman	10068.04	10	Stockton to BC	32
BC-Bethany-05	Iron Worker Journeyman Rebar/Stru	302041.11	10	Stockton to BC	32
BC-Bethany-05	Laborer G1 Driller-Air track & Hydr	20136.07	10	Stockton to BC	32
BC-Bethany-05	Operator G1a Cranes>100 t	41600	10	Stockton to BC	32
BC-Bethany-05	Operator G3a Cranes 45 t and under	20654.04	10	Stockton to BC	32
<b>BC-Bethany-05</b>	<b>Operator G4 Hvy Duty Mechanic</b>	<b>10400</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-05	Operator G4 Welder	40272.15	10	Stockton to BC	32
BC-Bethany-05	Operator G5 Concrete Pump	5200	10	Stockton to BC	32
BC-Bethany-05	Operator G5 Drilling & Boring Mach	1000	10	Stockton to BC	32
BC-Bethany-05	Operator G6 Forklift	5896	10	Stockton to BC	32
<b>BC-Bethany-05</b>	<b>Operator G6 Tractor</b>	<b>16000</b>	<b>10</b>	<b>Stockton to BC</b>	<b>32</b>
BC-Bethany-05	Operator G7 Oiler	32200	10	Stockton to BC	32
BC-Bethany-05	Pump Plant Admin Salaries	91000	10	Stockton to BC	32
BC-Bethany-05	Pump Plant Engineering Salaries	198600	10	Stockton to BC	32
BC-Bethany-05	Pump Plant Management Salaries	180000	10	Stockton to BC	32
BC-Bethany-05	Pump Plant Tech & Clerk Salaries	325800	10	Stockton to BC	32
BC-Bethany-05 Total					
BC-Bethany-06	Laborer G2 General	16369.7	10	Stockton to BC	32
BC-Bethany-06	OPERATING ENGINEER FOREMAN	1088.94	10	Stockton to BC	32
BC-Bethany-06	Operator G3 BH-Loader>3/4cy	7770	10	Stockton to BC	32
BC-Bethany-06	Operator G4 Grade Check	425.56	10	Stockton to BC	32
BC-Bethany-06	Teamster G2 Hwy ED 6-8cy, Water<7	1925.33	10	Stockton to BC	32
BC-Bethany-06	Laborer Foreman	9135	10	Stockton to BC	32

BC-Bethany-06	Laborer G1 Pipe layers	2740	10	Stockton to BC	32	
BC-Bethany-06	Laborer G3 Flagman	914.21	10	Stockton to BC	32	
BC-Bethany-06	Operator G2 Excavator 3.5 to 7.0 cy	405.56	10	Stockton to BC	32	
BC-Bethany-06	Operator G2 Finish Blade	2001.16	10	Stockton to BC	32	
BC-Bethany-06	Operator G4 Dozer & Push Cat	1481.12	10	Stockton to BC	32	
BC-Bethany-06	Operator G4 Loader <4.1cy	589.21	10	Stockton to BC	32	
BC-Bethany-06	Operator G4a Boom truck<15 ton	1433.09	10	Stockton to BC	32	
BC-Bethany-06	Operator G5 Compactor w-blade	1803.81	10	Stockton to BC	32	
BC-Bethany-06	Operator G7 Roller, Compactor	20	10	Stockton to BC	32	
BC-Bethany-06	Teamster G1 Hwy ED<6cy, Flatbed	7431.25	10	Stockton to BC	32	
BC-Bethany-06	Teamster G3 Boom Truck	2220	10	Stockton to BC	32	
BC-Bethany-06	Teamster G3 ED 8-24cy, Water>7mgz	2678.46	10	Stockton to BC	32	
BC-Bethany-06	Carpenter Apprentice	3564.04	10	Stockton to BC	32	
BC-Bethany-06	Carpenter Foreman	4034.85	10	Stockton to BC	32	
BC-Bethany-06	Carpenter Journeyman	11270.3	10	Stockton to BC	32	
BC-Bethany-06	Carpenter, Bridge and Highway	1751.95	10	Stockton to BC		32
BC-Bethany-06	Cement Mason Foreman	625.84	10	Stockton to BC		32
BC-Bethany-06	Cement Mason Journeyman	3735.88	10	Stockton to BC	32	
BC-Bethany-06	Electrical Foreman	1949.77	10	Stockton to BC	32	
BC-Bethany-06	Electrician Journeyman	8221.55	10	Stockton to BC	32	
BC-Bethany-06	Iron Worker Foreman	1136.48	10	Stockton to BC	32	
BC-Bethany-06	Iron Worker Journeyman Rebar/Stru	13205.44	10	Stockton to BC		32
BC-Bethany-06	Laborer G1 Vibrator, Green Cutter	530	10	Stockton to BC		32
BC-Bethany-06	Laborer G2 Concrete Laborer	1845	10	Stockton to BC	32	
BC-Bethany-06	Laborer G2 High Pressure Nozzleman	150	10	Stockton to BC	32	
BC-Bethany-06	Laborer G4 Clean-up	14400	10	Stockton to BC	32	
BC-Bethany-06	Operator G1a Cranes>100 t	217.6	10	Stockton to BC	32	
BC-Bethany-06	Operator G2a Cranes 45 to 100 t	465.85	10	Stockton to BC	32	
BC-Bethany-06	Operator G3 Loader >4cy	644.17	10	Stockton to BC	32	
BC-Bethany-06	Operator G3a Cranes 45 t and under	2201.37	10	Stockton to BC	32	
BC-Bethany-06	Operator G4 BH-Loader <.76cy	1600	10	Stockton to BC	32	
BC-Bethany-06	Operator G4 Hvy Duty Mechanic	81.25	10	Stockton to BC	32	
BC-Bethany-06	Operator G4 Scraper	40	10	Stockton to BC		32
BC-Bethany-06	Operator G4 Trim Machine	162.5	10	Stockton to BC		32
BC-Bethany-06	Operator G5 Concrete Pump	150	10	Stockton to BC	32	
BC-Bethany-06	Operator G7 Oiler	217.6	10	Stockton to BC	32	
BC-Bethany-06	Operator G8 Pump	52.84	10	Stockton to BC	32	
BC-Bethany-06	Teamster G4 ED 25-65 Cy	1596.81	10	Stockton to BC	32	
BC-Bethany-06	Teamster G4 Tractor, Lowbed/Trailer	228.41	10	Stockton to BC		32
BC-Bethany-06 Total						
BC-Bethany-07	Laborer G2 General	115640.52	10	Stockton to BC	32	
BC-Bethany-07	OPERATING ENGINEER FOREMAN	25065.27	10	Stockton to BC	32	
BC-Bethany-07	Operator G3 BH-Loader>3/4cy	12722.13	10	Stockton to BC	32	
BC-Bethany-07	Operator G4 Grade Check	24930.13	10	Stockton to BC	32	
BC-Bethany-07	Teamster G2 Hwy ED 6-8cy, Water<7	67.57	10	Stockton to BC	32	
BC-Bethany-07	Laborer Foreman	4088	10	Stockton to BC	32	
BC-Bethany-07	Operator G2 Finish Blade	135.14	10	Stockton to BC	32	
BC-Bethany-07	Operator G4 Dozer & Push Cat	24416	10	Stockton to BC	32	
BC-Bethany-07	Operator G4a Boom truck<15 ton	1320	10	Stockton to BC	32	
BC-Bethany-07	Operator G7 Roller, Compactor	67.57	10	Stockton to BC	32	
BC-Bethany-07	Teamster G1 Hwy ED<6cy, Flatbed	24930.13	10	Stockton to BC		32
BC-Bethany-07	Teamster G3 Boom Truck	660	10	Stockton to BC	32	
BC-Bethany-07	Teamster G3 ED 8-24cy, Water>7mgz	126042.66	10	Stockton to BC	32	
BC-Bethany-07	Carpenter Apprentice	1320	10	Stockton to BC	32	
BC-Bethany-07	Carpenter Foreman	1320	10	Stockton to BC	32	
BC-Bethany-07	Carpenter Journeyman	4696.53	10	Stockton to BC	32	
BC-Bethany-07	Cement Mason Journeyman	5116.26	10	Stockton to BC	32	
BC-Bethany-07	Electrical Foreman	330	10	Stockton to BC	32	
BC-Bethany-07	Electrician Journeyman	1320	10	Stockton to BC		32
BC-Bethany-07	Iron Worker Foreman	6639.99	10	Stockton to BC	32	
BC-Bethany-07	Iron Worker Journeyman Rebar/Stru	29734.5	10	Stockton to BC	32	
BC-Bethany-07	Laborer G2 Concrete Laborer	24528	10	Stockton to BC	32	
BC-Bethany-07	Operator G1a Cranes>100 t	43263.99	10	Stockton to BC	32	
BC-Bethany-07	Operator G2 Micro Tunnel	4088	10	Stockton to BC	32	
BC-Bethany-07	Operator G2 Plant Operator	48832	10	Stockton to BC	32	
BC-Bethany-07	Operator G2a Cranes 45 to 100 t	29018	10	Stockton to BC	32	
BC-Bethany-07	Operator G3 Loader >4cy	24551	10	Stockton to BC	32	
BC-Bethany-07	Operator G4 Hvy Duty Mechanic	24416	10	Stockton to BC	32	
BC-Bethany-07	Operator G4 Trim Machine	67.57	10	Stockton to BC	32	
BC-Bethany-07	Operator G7 Oiler	59559.99	10	Stockton to BC		32
BC-Bethany-07	Project Management Salaries	85937.98	10	Stockton to BC	32	
BC-Bethany-07 Total						

BC-Bethany-08	Laborer G2 General	197981.07	10		Stockton to BC	32	
BC-Bethany-08	Teamster G2 Hwy ED 6-8cy, Water<7	4417.51	10		Stockton to BC	32	
BC-Bethany-08	Laborer Foreman	16725.87	10		Stockton to BC	32	
BC-Bethany-08	Teamster G3 ED 8-24cy, Water>7mg	64084.77	10		Stockton to BC	32	
<b>BC-Bethany-08</b>	Carpenter Foreman	56225.21	10		Stockton to BC		32
BC-Bethany-08	Carpenter Journeyman	340522.99	10		Stockton to BC		32
BC-Bethany-08	Cement Mason Foreman	13185.58	10		Stockton to BC	32	
BC-Bethany-08	Cement Mason Journeyman	54787.93	10		Stockton to BC	32	
BC-Bethany-08	Iron Worker Foreman	50980.04	10		Stockton to BC	32	
BC-Bethany-08	Iron Worker Journeyman Rebar/Stru	356860.27	10		Stockton to BC	32	
BC-Bethany-08	Laborer G1 Vibrator, Green Cutter	12564.45	10		Stockton to BC	32	
BC-Bethany-08	Laborer G2 Concrete Laborer	37693.32	10		Stockton to BC	32	
BC-Bethany-08	Laborer G2 High Pressure Nozzleman	6404.14	10		Stockton to BC	32	
<b>BC-Bethany-08</b>	Millwright	840	10		Stockton to BC		32
BC-Bethany-08	Operator G1a Cranes>100 t	74467.84	10		Stockton to BC	32	
BC-Bethany-08	Operator G2a Cranes 45 to 100 t	24739.66	10		Stockton to BC	32	
BC-Bethany-08	Operator G3a Cranes 45 t and under	41.48	10		Stockton to BC	32	
BC-Bethany-08	Operator G4 Hvy Duty Mechanic	6205.67	10		Stockton to BC	32	
BC-Bethany-08	Operator G6 Screedman	3790.18	10		Stockton to BC	32	
BC-Bethany-08	Operator G7 Oiler	74467.84	10		Stockton to BC	32	
<b>BC-Bethany-08</b>	Operator G8a Skidsteer <Bobcat 743	4417.51	10		Stockton to BC		32
BC-Bethany-08 Total							
BC-Bethany-09	Laborer G2 General	147957.8	10		Stockton to BC	32	
BC-Bethany-09	Operator G4a Boom truck<15 ton	9863.85	10		Stockton to BC	32	
BC-Bethany-09	Teamster G1 Hwy ED<6cy, Flatbed	9863.85	10		Stockton to BC	32	
BC-Bethany-09	Iron Worker Foreman	4931.93	10		Stockton to BC	32	
BC-Bethany-09	Iron Worker Journeyman Rebar/Stru	147957.8	10		Stockton to BC	32	
<b>BC-Bethany-09</b>	Laborer G1 Driller-Air track & Hydraul	9863.85	10		Stockton to BC		32
BC-Bethany-09	Operator G3a Cranes 45 t and under	4931.93	10		Stockton to BC	32	
BC-Bethany-09	Operator G4 Welder	19727.71	10		Stockton to BC	32	
BC-Bethany-09	Bethany Surge Basin Administration	59200	10		Stockton to BC	32	
BC-Bethany-09	Bethany Surge Basin Engineering Sal	76000	10		Stockton to BC	32	
BC-Bethany-09	Bethany Surge Basin Management	89200	10		Stockton to BC	32	
BC-Bethany-09	Bethany Surge Basin Technical & Cle	132600	10		Stockton to BC	32	
BC-Bethany-09 Total							
BC-Bethany-10	Laborer G2 General	5459.9	10		Stockton to BC	32	
<b>BC-Bethany-10</b>	OPERATING ENGINEER FOREMAN	6668.49	10		Stockton to BC		32
BC-Bethany-10	Operator G4 Grade Check	1766.67	10	10	Stockton to BC	32	
BC-Bethany-10	Teamster G2 Hwy ED 6-8cy, Water<7	1149.83	10	10	Stockton to BC	32	
BC-Bethany-10	Laborer Foreman	3650	10	10	Stockton to BC	32	
BC-Bethany-10	Laborer G1 Pipe layers	7300	10	10	Stockton to BC	32	
BC-Bethany-10	Laborer G3 Flagman	7066.67	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G2 Excavator 3.5 to 7.0 cy	5705.58	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G2 Finish Blade	1277.34	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G4 Dozer & Push Cat	5849.44	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G4a Boom truck<15 ton	5	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G5 Compactor w-blade	50	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G7 Roller, Compactor	184.5	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G8 Generator	3650	10	10	Stockton to BC	32	
BC-Bethany-10	Teamster G1 Hwy ED<6cy, Flatbed	1813.3	10	10	Stockton to BC	32	
BC-Bethany-10	Teamster G3 Boom Truck	3655	10	10	Stockton to BC	32	
BC-Bethany-10	Teamster G3 ED 8-24cy, Water>7mg	16185.3	10	10	Stockton to BC	32	
BC-Bethany-10	Electrical Foreman	2.5	10	10	Stockton to BC	32	
BC-Bethany-10	Electrical Lineman	1460	10	10	Stockton to BC	32	
BC-Bethany-10	Electrician Journeyman	10	10	10	Stockton to BC	32	
BC-Bethany-10	Iron Worker Journeyman Rebar/Stru	40	10	10	Stockton to BC	32	
BC-Bethany-10	Laborer G4 Clean-up	2498.24	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G1a Cranes>100 t	10	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G3 Gradall	450	10	10	Stockton to BC	32	
BC-Bethany-10	Operator G3 Loader >4cy	234.5	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G3a Cranes 45 t and under	1813.3	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G4 Hvy Duty Mechanic	40	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G4 Trim Machine	184.5	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G4 Welder	10	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G5 Drilling & Boring Mach	1813.3	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G6 Grout Mach	1813.3	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G7 Oiler	20	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Operator G-8 Mech helper	40	10.0	10.0	Stockton to BC	32	
BC-Bethany-10	Project Management Salaries	2000	10.0	10.0	Stockton to BC	32	
BC-Bethany-10 Total							
BC-Bethany-12	Laborer G2 General	800	10.0		Stockton to BC	32	
BC-Bethany-12	Teamster G3 Boom Truck	400	10.0		Stockton to BC	32	

BC-Bethany-12	Carpenter Apprentice	400	10.0	Stockton to BC	32
BC-Bethany-12	Carpenter Foreman	400	10	Stockton to BC	32
BC-Bethany-12	Carpenter, Bridge and Highway	800	10	Stockton to BC	32
BC-Bethany-12	Electrical Foreman	400	10	Stockton to BC	32
BC-Bethany-12	Electrician Journeyman	800	10	Stockton to BC	32
BC-Bethany-12	Iron Worker Foreman	200	10	Stockton to BC	32
BC-Bethany-12	Iron Worker Journeyman Rebar/Stru	1600	10	Stockton to BC	32
BC-Bethany-12	Operator G1a Cranes>100 t	20	10	Stockton to BC	32
BC-Bethany-12	Operator G3a Cranes 45 t and under	400	10	Stockton to BC	32
BC-Bethany-12	Operator G7 Oiler	20	10	Stockton to BC	32
BC-Bethany-12 Total					
BC-Bethany-13	Laborer G2 General	19055.1	10	Stockton to BC	32
BC-Bethany-13	OPERATING ENGINEER FOREMAN	12971.7	10	Stockton to BC	32
BC-Bethany-13	Operator G4 Grade Check	9131.7	10	Stockton to BC	32
BC-Bethany-13	Laborer G3 Flagman	12971.7	10	Stockton to BC	32
BC-Bethany-13	Operator G2 Excavator 3.5 to 7.0 cy	4860	10	Stockton to BC	32
BC-Bethany-13	Operator G2 Finish Blade	791.7	10	Stockton to BC	32
BC-Bethany-13	Operator G4 Dozer & Push Cat	19375.21	10	Stockton to BC	32
BC-Bethany-13	Teamster G3 ED 8-24cy, Water>7mg	28780.88	10	Stockton to BC	32
BC-Bethany-13	Laborer G2 Guinea Chaser	9131.7	10	Stockton to BC	32
BC-Bethany-13	Laborer G3 Dumpman	12180	10	Stockton to BC	32
BC-Bethany-13	Operator G1a Cranes>100 t	12971.7	10	Stockton to BC	32
BC-Bethany-13	Operator G3 Loader >4cy	25458.61	10	Stockton to BC	32
BC-Bethany-13	Operator G7 Oiler	12071.7	10	Stockton to BC	32
BC-Bethany-13	Operator G8a Skidsteer <Bobcat 743	9923.4	10	Stockton to BC	32
BC-Bethany-13 Total					
BC-Bethany-14	Laborer G2 General	31741.45	10	Stockton to BC	32
BC-Bethany-14	OPERATING ENGINEER FOREMAN	5970.53	10	Stockton to BC	32
BC-Bethany-14	Operator G3 BH-Loader>3/4cy	3118.54	10	Stockton to BC	32
BC-Bethany-14	Operator G4 Grade Check	5970.53	10	Stockton to BC	32
BC-Bethany-14	Laborer Foreman	1904	10	Stockton to BC	32
BC-Bethany-14	Operator G4 Dozer & Push Cat	5703.98	10	Stockton to BC	32
BC-Bethany-14	Operator G4a Boom truck<15 ton	1089.67	10	Stockton to BC	32
BC-Bethany-14	Teamster G1 Hwy ED<6cy, Flatbed	5970.53	10	Stockton to BC	32
BC-Bethany-14	Teamster G3 Boom Truck	544.84	10	Stockton to BC	32
BC-Bethany-14	Teamster G3 ED 8-24cy, Water>7mg	29860.66	10	Stockton to BC	32
BC-Bethany-14	Carpenter Apprentice	1089.67	10	Stockton to BC	32
BC-Bethany-14	Carpenter Foreman	1089.67	10	Stockton to BC	32
BC-Bethany-14	Carpenter Journeyman	3245.53	10	Stockton to BC	32
BC-Bethany-14	Cement Mason Journeyman	533.1	10	Stockton to BC	32
BC-Bethany-14	Electrical Foreman	272.42	10	Stockton to BC	32
BC-Bethany-14	Electrician Journeyman	1089.67	10	Stockton to BC	32
BC-Bethany-14	Iron Worker Foreman	2840	10	Stockton to BC	32
BC-Bethany-14	Iron Worker Journeyman Rebar/Stru	8925.53	10	Stockton to BC	32
BC-Bethany-14	Laborer G2 Concrete Laborer	11424	10	Stockton to BC	32
BC-Bethany-14	Operator G1a Cranes>100 t	8829.18	10	Stockton to BC	32
BC-Bethany-14	Operator G2 Micro Tunnel	1904	10	Stockton to BC	32
BC-Bethany-14	Operator G2 Plant Operator	11407.96	10	Stockton to BC	32
BC-Bethany-14	Operator G2a Cranes 45 to 100 t	7874.53	10	Stockton to BC	32
BC-Bethany-14	Operator G3 Loader >4cy	5703.98	10	Stockton to BC	32
BC-Bethany-14	Operator G4 Hvy Duty Mechanic	5703.98	10	Stockton to BC	32
BC-Bethany-14	Operator G7 Oiler	16151.96	10	Stockton to BC	32
BC-Bethany-14	Project Management Salaries	45974.24	10	Stockton to BC	32
BC-Bethany-14 Total					
BC-Bethany-15	Laborer G2 General	200	10	Stockton to BC	32
BC-Bethany-15	OPERATING ENGINEER FOREMAN	350	10	Stockton to BC	32
BC-Bethany-15	Teamster G2 Hwy ED 6-8cy, Water<7	225	10	Stockton to BC	32
BC-Bethany-15	Laborer G3 Flagman	200	10	Stockton to BC	32
BC-Bethany-15	Operator G2 Finish Blade	300	10	Stockton to BC	32
BC-Bethany-15	Operator G4 Dozer & Push Cat	200	10	Stockton to BC	32
BC-Bethany-15	Operator G4 Loader <4.1cy	100	10	Stockton to BC	32
BC-Bethany-15	Operator G7 Roller, Compactor	125	10	Stockton to BC	32
BC-Bethany-15	Teamster G3 ED 8-24cy, Water>7mg	800	10	Stockton to BC	32
BC-Bethany-15	Operator G3 Loader >4cy	250	10	Stockton to BC	32
BC-Bethany-15	Operator G4 Trim Machine	125	10	Stockton to BC	32
BC-Bethany-15 Total					
BC-Bethany-16	Laborer G2 General	15199.61	10	Stockton to BC	32
BC-Bethany-16	OPERATING ENGINEER FOREMAN	2227.5	10	Stockton to BC	32
BC-Bethany-16	Operator G3 BH-Loader>3/4cy	726.15	10	Stockton to BC	32
BC-Bethany-16	Operator G4 Grade Check	1053.02	10	Stockton to BC	32
BC-Bethany-16	Teamster G2 Hwy ED 6-8cy, Water<7	7783.02	10	Stockton to BC	32
BC-Bethany-16	Iron Worker-Rigger	886.67	10	Stockton to BC	32



BC-Bethany-16	Laborer Foreman	658.86	10	Stockton to BC	32
BC-Bethany-16	Laborer G3 Flagman	268.02	10	Stockton to BC	32
BC-Bethany-16	Operator G2 Excavator 3.5 to 7.0 cy	1779.17	10	Stockton to BC	32
BC-Bethany-16	Operator G2 Finish Blade	748.16	10	Stockton to BC	32
BC-Bethany-16	Operator G4 Dozer & Push Cat	1512.31	10	Stockton to BC	32
BC-Bethany-16	Operator G4a Boom truck<15 ton	162.86	10	Stockton to BC	32
BC-Bethany-16	Operator G5 Compactor w-blade	1512.31	10	Stockton to BC	32
BC-Bethany-16	Teamster G1 Hwy ED<6cy, Flatbed	1961	10	Stockton to BC	32
BC-Bethany-16	Teamster G3 ED 8-24cy, Water>7mgz	6379.71	10	Stockton to BC	32
BC-Bethany-16	Cement Mason Journeyman	1488	10	Stockton to BC	32
BC-Bethany-16	Electrical Foreman	20	10	Stockton to BC	32
BC-Bethany-16	Electrician Apprentice	40	10	Stockton to BC	32
BC-Bethany-16	Electrician Journeyman	536	10	Stockton to BC	32
BC-Bethany-16	Operator G1a Cranes>100 t	1143.34	10	Stockton to BC	32
BC-Bethany-16	Operator G2 Plant Operator	2306	10	Stockton to BC	32
BC-Bethany-16	Operator G2a Cranes 45 to 100 t	253.33	10	Stockton to BC	32
BC-Bethany-16	Operator G3 Loader >4cy	1005	10	Stockton to BC	32
BC-Bethany-16	Operator G3a Cranes 45 t and under	248	10	Stockton to BC	32
BC-Bethany-16	Operator G5 Concrete Pump	905	10	Stockton to BC	32
BC-Bethany-16	Operator G6 Forklift	496	10	Stockton to BC	32
BC-Bethany-16	Operator G6 Grout Mach	496	10	Stockton to BC	32
BC-Bethany-16	Operator G6 Tractor	168.02	10	Stockton to BC	32
BC-Bethany-16	Operator G7 Oiler	2544.34	10	Stockton to BC	32
BC-Bethany-16	Pipefitter Apprentice	3080.01	10	Stockton to BC	32
BC-Bethany-16	Pipefitter Foreman	1260.01	10	Stockton to BC	32
BC-Bethany-16	Pipefitter Journeyman	3080.01	10	Stockton to BC	32
BC-Bethany-16	Teamster G4 Tractor, Lowbed/Trailer	506.67	10	Stockton to BC	32
BC-Bethany-16 Total					
BC-Bethany-17	Iron Worker-Rigger	1120	10	Stockton to BC	32
BC-Bethany-17	Teamster G1 Hwy ED<6cy, Flatbed	2800	10	Stockton to BC	32
BC-Bethany-17	Carpenter Foreman	2200	10	Stockton to BC	32
BC-Bethany-17	Electrical Foreman	1400	10	Stockton to BC	32
BC-Bethany-17	Electrical Lineman	5600	10	Stockton to BC	32
BC-Bethany-17	Iron Worker Foreman	180	10	Stockton to BC	32
BC-Bethany-17	Iron Worker Journeyman Rebar/Stru	540	10	Stockton to BC	32
BC-Bethany-17	Millwright	13200	10	Stockton to BC	32
BC-Bethany-17	Operator G1a Cranes>100 t	1300	10	Stockton to BC	32
BC-Bethany-17	Operator G2a Cranes 45 to 100 t	2000	10	Stockton to BC	32
BC-Bethany-17	Operator G7 Oiler	1138	10	Stockton to BC	32
BC-Bethany-17	Pipefitter Foreman	2089.55	10	Stockton to BC	32
BC-Bethany-17	Pipefitter Journeyman	6268.66	10	Stockton to BC	32
BC-Bethany-17	Teamster G4 Tractor, Lowbed/Trailer	700	10	Stockton to BC	32
BC-Bethany-17 Total					
BC-Bethany-18	Laborer G2 General	61642.49	10	Stockton to BC	32
BC-Bethany-18	OPERATING ENGINEER FOREMAN	16700	10	Stockton to BC	32
BC-Bethany-18	Operator G3 BH-Loader>3/4cy	200	10	Stockton to BC	32
BC-Bethany-18	Teamster G2 Hwy ED 6-8cy, Water<7	1600	10	Stockton to BC	32
BC-Bethany-18	Iron Worker-Rigger	30	10	Stockton to BC	32
BC-Bethany-18	Laborer Foreman	15618.6	10	Stockton to BC	32
BC-Bethany-18	Operator G4 Dozer & Push Cat	16500	10	Stockton to BC	32
BC-Bethany-18	Operator G4a Boom truck<15 ton	601.52	10	Stockton to BC	32
BC-Bethany-18	Operator G5 Compactor w-blade	200	10	Stockton to BC	32
BC-Bethany-18	Teamster G1 Hwy ED<6cy, Flatbed	18350	10	Stockton to BC	32
BC-Bethany-18	Teamster G3 Boom Truck	601.52	10	Stockton to BC	32
BC-Bethany-18	Teamster G3 ED 8-24cy, Water>7mgz	44637.2	10	Stockton to BC	32
BC-Bethany-18	Carpenter Apprentice	1203.03	10	Stockton to BC	32
BC-Bethany-18	Carpenter Foreman	4403.03	10	Stockton to BC	32
BC-Bethany-18	Carpenter Journeyman	24806.06	10	Stockton to BC	32
BC-Bethany-18	Cement Mason Foreman	2775	10	Stockton to BC	32
BC-Bethany-18	Cement Mason Journeyman	15100	10	Stockton to BC	32
BC-Bethany-18	Electrical Foreman	300.76	10	Stockton to BC	32
BC-Bethany-18	Electrician Journeyman	1233.03	10	Stockton to BC	32
BC-Bethany-18	Iron Worker Foreman	17636.43	10	Stockton to BC	32
BC-Bethany-18	Iron Worker Journeyman Rebar/Stru	145603.56	10	Stockton to BC	32
BC-Bethany-18	Laborer G1 Vibrator, Green Cutter	3700	10	Stockton to BC	32
BC-Bethany-18	Laborer G2 Concrete Laborer	70043	10	Stockton to BC	32
BC-Bethany-18	Laborer G2 High Pressure Nozzleman	1850	10	Stockton to BC	32
BC-Bethany-18	Operator G1a Cranes>100 t	17439.46	10	Stockton to BC	32
BC-Bethany-18	Operator G2 Plant Operator	26868.6	10	Stockton to BC	32
BC-Bethany-18	Operator G2a Cranes 45 to 100 t	27068.6	10	Stockton to BC	32
BC-Bethany-18	Operator G3 Loader >4cy	20625	10	Stockton to BC	32
BC-Bethany-18	Operator G3a Cranes 45 t and under	30	10	Stockton to BC	32

BC-Bethany-18	Operator G4 Hvy Duty Mechanic	4812.12	10	Stockton to BC	32
BC-Bethany-18	Operator G4 Welder	1203.03	10	Stockton to BC	32
BC-Bethany-18	Operator G5 Concrete Pump	12218.6	10	Stockton to BC	32
BC-Bethany-18	Operator G5 Drilling & Boring Mach	16500	10	Stockton to BC	32
BC-Bethany-18	Operator G7 Oiler	62011.09	10	Stockton to BC	32
BC-Bethany-18	Operator G-8 Mech helper	4812.12	10	Stockton to BC	32
BC-Bethany-18	Teamster G4 Tractor, Lowbed/Trailer	30	10	Stockton to BC	32
BC-Bethany-18	Project Management Salaries	53997.97	10	Stockton to BC	32
BC-Bethany-18 Total					
BC-Bethany-19	Laborer G2 General	1671.9	10	Stockton to BC	32
BC-Bethany-19	OPERATING ENGINEER FOREMAN	910.85	10	Stockton to BC	32
BC-Bethany-19	Operator G4 Grade Check	312.8	10	Stockton to BC	32
BC-Bethany-19	Teamster G2 Hwy ED 6-8cy, Water<7	396.24	10	Stockton to BC	32
BC-Bethany-19	Laborer G3 Flagman	910.85	10	Stockton to BC	32
BC-Bethany-19	Operator G2 Excavator 3.5 to 7.0 cy	835.95	10	Stockton to BC	32
BC-Bethany-19	Operator G2 Finish Blade	208.99	10	Stockton to BC	32
BC-Bethany-19	Operator G4 Dozer & Push Cat	74.9	10	Stockton to BC	32
BC-Bethany-19	Operator G5 Compactor w-blade	74.9	10	Stockton to BC	32
BC-Bethany-19	Teamster G3 ED 8-24cy, Water>7mgz	4179.76	10	Stockton to BC	32
BC-Bethany-19	Operator G3 Loader >4cy	74.9	10	Stockton to BC	32
BC-Bethany-19	Operator G6 Tractor	835.95	10	Stockton to BC	32
BC-Bethany-19	Operator G8a Skidsteer <Bobcat 743	360.16	10	Stockton to BC	32
BC-Bethany-19 Total					
BC-Bethany-20	Laborer G2 General	6000	10	Stockton to BC	32
BC-Bethany-20	Carpenter Foreman	6000	10	Stockton to BC	32
BC-Bethany-20	Carpenter Journeyman	24000	10	Stockton to BC	32
BC-Bethany-20	Iron Worker Foreman	200	10	Stockton to BC	32
BC-Bethany-20	Iron Worker Journeyman Rebar/Stru	1200	10	Stockton to BC	32
BC-Bethany-20	Operator G2a Cranes 45 to 100 t	400	10	Stockton to BC	32
BC-Bethany-20	Operator G7 Oiler	400	10	Stockton to BC	32
BC-Bethany-20 Total					
BC-Bethany-21	Laborer G2 General	5294.59	10	Stockton to BC	32
BC-Bethany-21	OPERATING ENGINEER FOREMAN	1650	10	Stockton to BC	32
BC-Bethany-21	Operator G3 BH-Loader>3/4cy	1650	10	Stockton to BC	32
BC-Bethany-21	Teamster G2 Hwy ED 6-8cy, Water<7	1650	10	Stockton to BC	32
BC-Bethany-21	Laborer Foreman	1641.19	10	Stockton to BC	32
BC-Bethany-21	Operator G4a Boom truck<15 ton	90	10	Stockton to BC	32
BC-Bethany-21	Teamster G1 Hwy ED<6cy, Flatbed	1650	10	Stockton to BC	32
BC-Bethany-21	Teamster G3 Boom Truck	90	10	Stockton to BC	32
BC-Bethany-21	Teamster G3 ED 8-24cy, Water>7mgz	2461.8	10	Stockton to BC	32
BC-Bethany-21	Carpenter Apprentice	180	10	Stockton to BC	32
BC-Bethany-21	Carpenter Foreman	180	10	Stockton to BC	32
BC-Bethany-21	Carpenter Journeyman	360	10	Stockton to BC	32
BC-Bethany-21	Electrical Foreman	45	10	Stockton to BC	32
BC-Bethany-21	Electrician Journeyman	180	10	Stockton to BC	32
BC-Bethany-21	Iron Worker Journeyman Rebar/Stru	3629.19	10	Stockton to BC	32
BC-Bethany-21	Laborer G2 Concrete Laborer	6564.78	10	Stockton to BC	32
BC-Bethany-21	Operator G1a Cranes>100 t	1634.59	10	Stockton to BC	32
BC-Bethany-21	Operator G2 Plant Operator	3300	10	Stockton to BC	32
BC-Bethany-21	Operator G2a Cranes 45 to 100 t	1650	10	Stockton to BC	32
BC-Bethany-21	Operator G3 Loader >4cy	1650	10	Stockton to BC	32
BC-Bethany-21	Operator G3a Cranes 45 t and under	825	10	Stockton to BC	32
BC-Bethany-21	Operator G7 Oiler	4925.78	10	Stockton to BC	32
BC-Bethany-21	Teamster G4 ED 25-65 Cy	825	10	Stockton to BC	32
BC-Bethany-21	Project Management Salaries	7175	10	Stockton to BC	32
BC-Bethany-21 Total					
BC-Bethany-22	Laborer G2 General	18	10	Stockton to BC	32
BC-Bethany-22	OPERATING ENGINEER FOREMAN	6	10	Stockton to BC	32
BC-Bethany-22	Teamster G1 Hwy ED<6cy, Flatbed	6	10	Stockton to BC	32
BC-Bethany-22	Operator G1a Cranes>100 t	455.12	10	Stockton to BC	32
BC-Bethany-22	Operator G2a Cranes 45 to 100 t	455.12	10	Stockton to BC	32
BC-Bethany-22	Operator G3 Loader >4cy	318.45	10	Stockton to BC	32
BC-Bethany-22	Operator G3a Cranes 45 t and under	6	10	Stockton to BC	32
BC-Bethany-22	Operator G5 Drilling & Boring Mach	6	10	Stockton to BC	32
BC-Bethany-22	Operator G6 Grout Mach	6	10	Stockton to BC	32
BC-Bethany-22	Operator G7 Oiler	136.67	10	Stockton to BC	32
BC-Bethany-22	Pile Driver Foreman	136.67	10	Stockton to BC	32
BC-Bethany-22	Pile Driver Journeyman	546.67	10	Stockton to BC	32
BC-Bethany-22	Pile Driver Wharf and Dock	1592.24	10	Stockton to BC	32
BC-Bethany-22	Teamster G4 Tractor, Lowbed/Trailer	636.89	10	Stockton to BC	32
BC-Bethany-22 Total					
BC-Bethany-23	Laborer G2 General	10505.05	10	Stockton to BC	32

BC-Bethany-23	Iron Worker-Rigger	2222.22	10	Stockton to BC	32
BC-Bethany-23	Teamster G1 Hwy ED<6cy, Flatbed	1111.11	10	Stockton to BC	32
BC-Bethany-23	Carpenter Foreman	2222.22	10	Stockton to BC	32
BC-Bethany-23	Millwright	13333.33	10	Stockton to BC	32
BC-Bethany-23	Operator G2a Cranes 45 to 100 t	2222.22	10	Stockton to BC	32
BC-Bethany-23	Operator G7 Oiler	2222.22	10	Stockton to BC	32
BC-Bethany-23 Total					
BC-Bethany-24	Laborer G2 General	13383.26	10	Stockton to BC	32
BC-Bethany-24	Teamster G2 Hwy ED 6-8cy, Water<7	179.59	10	Stockton to BC	32
BC-Bethany-24	Laborer Foreman	871.24	10	Stockton to BC	32
BC-Bethany-24	Teamster G3 ED 8-24cy, Water>7mg	5447.74	10	Stockton to BC	32
BC-Bethany-24	Carpenter Foreman	3268.7	10	Stockton to BC	32
BC-Bethany-24	Carpenter Journeyman	20596.05	10	Stockton to BC	32
BC-Bethany-24	Cement Mason Foreman	973.18	10	Stockton to BC	32
BC-Bethany-24	Cement Mason Journeyman	4389.52	10	Stockton to BC	32
BC-Bethany-24	Iron Worker Foreman	3110.02	10	Stockton to BC	32
BC-Bethany-24	Iron Worker Journeyman Rebar/Stru	21770.16	10	Stockton to BC	32
BC-Bethany-24	Laborer G1 Vibrator, Green Cutter	567.48	10	Stockton to BC	32
BC-Bethany-24	Laborer G2 Concrete Laborer	1702.45	10	Stockton to BC	32
BC-Bethany-24	Laborer G2 High Pressure Nozzleman	407.9	10	Stockton to BC	32
BC-Bethany-24	Operator G1a Cranes>100 t	4596.51	10	Stockton to BC	32
BC-Bethany-24	Operator G2a Cranes 45 to 100 t	1532.17	10	Stockton to BC	32
BC-Bethany-24	Operator G4 Hvy Duty Mechanic	383.04	10	Stockton to BC	32
BC-Bethany-24	Operator G6 Screedman	367.5	10	Stockton to BC	32
BC-Bethany-24	Operator G7 Oiler	4596.51	10	Stockton to BC	32
BC-Bethany-24	Operator G8a Skidsteer <Bobcat 743	179.59	10	Stockton to BC	32
BC-Bethany-24 Total					
BC-Bethany-25	Laborer G2 General	1400.27	10	Stockton to BC	32
BC-Bethany-25	OPERATING ENGINEER FOREMAN	632.96	10	Stockton to BC	32
BC-Bethany-25	Operator G4 Grade Check	72	10	Stockton to BC	32
BC-Bethany-25	Teamster G2 Hwy ED 6-8cy, Water<7	250.66	10	Stockton to BC	32
BC-Bethany-25	Laborer G3 Flagman	354.63	10	Stockton to BC	32
BC-Bethany-25	Operator G2 Excavator 3.5 to 7.0 cy	282.63	10	Stockton to BC	32
BC-Bethany-25	Operator G2 Finish Blade	70.66	10	Stockton to BC	32
BC-Bethany-25	Operator G4 Dozer & Push Cat	72	10	Stockton to BC	32
BC-Bethany-25	Operator G5 Compactor w-blade	72	10	Stockton to BC	32
BC-Bethany-25	Teamster G1 Hwy ED<6cy, Flatbed	278.33	10	Stockton to BC	32
BC-Bethany-25	Teamster G3 ED 8-24cy, Water>7mg	1413.17	10	Stockton to BC	32
BC-Bethany-25	Operator G1a Cranes>100 t	1239.33	10	Stockton to BC	32
BC-Bethany-25	Operator G2a Cranes 45 to 100 t	1239.33	10	Stockton to BC	32
BC-Bethany-25	Operator G3 Loader >4cy	742	10	Stockton to BC	32
BC-Bethany-25	Operator G3a Cranes 45 t and under	278.33	10	Stockton to BC	32
BC-Bethany-25	Operator G5 Drilling & Boring Mach	278.33	10	Stockton to BC	32
BC-Bethany-25	Operator G6 Grout Mach	278.33	10	Stockton to BC	32
BC-Bethany-25	Operator G6 Tractor	282.63	10	Stockton to BC	32
BC-Bethany-25	Operator G7 Oiler	569.33	10	Stockton to BC	32
BC-Bethany-25	Operator G8a Skidsteer <Bobcat 743	282.63	10	Stockton to BC	32
BC-Bethany-25	Pile Driver Foreman	569.33	10	Stockton to BC	32
BC-Bethany-25	Pile Driver Journeyman	2277.33	10	Stockton to BC	32
BC-Bethany-25	Pile Driver Wharf and Dock	3350	10	Stockton to BC	32
BC-Bethany-25	Teamster G4 Tractor, Lowbed/Trailer	1340	10	Stockton to BC	32
BC-Bethany-25 Total					
BC-Bethany-26	Laborer G2 General	300	10	Stockton to BC	32
BC-Bethany-26	Iron Worker-Rigger	2120	10	Stockton to BC	32
BC-Bethany-26	Iron Worker Foreman	760	10	Stockton to BC	32
BC-Bethany-26	Iron Worker Journeyman Rebar/Stru	900	10	Stockton to BC	32
BC-Bethany-26	Millwright	460	10	Stockton to BC	32
BC-Bethany-26	Operator G1a Cranes>100 t	300	10	Stockton to BC	32
BC-Bethany-26	Operator G2a Cranes 45 to 100 t	760	10	Stockton to BC	32
BC-Bethany-26	Operator G7 Oiler	490	10	Stockton to BC	32
BC-Bethany-26	Teamster G4 Tractor, Lowbed/Trailer	300	10	Stockton to BC	32
BC-Bethany-26 Total					
BC-Bethany-27	Laborer G2 General	16466.22	10	Stockton to BC	32
BC-Bethany-27	Teamster G2 Hwy ED 6-8cy, Water<7	275.7	10	Stockton to BC	32
BC-Bethany-27	Laborer Foreman	762.57	10	Stockton to BC	32
BC-Bethany-27	Teamster G3 ED 8-24cy, Water>7mg	3782.7	10	Stockton to BC	32
BC-Bethany-27	Carpenter Foreman	4922.92	10	Stockton to BC	32
BC-Bethany-27	Carpenter Journeyman	31758.09	10	Stockton to BC	32
BC-Bethany-27	Cement Mason Foreman	1538.02	10	Stockton to BC	32
BC-Bethany-27	Cement Mason Journeyman	6925.06	10	Stockton to BC	32
BC-Bethany-27	Iron Worker Foreman	2270.29	10	Stockton to BC	32
BC-Bethany-27	Iron Worker Journeyman Rebar/Stru	15891.97	10	Stockton to BC	32

BC-Bethany-27	Laborer G1 Vibrator, Green Cutter	394.04	10	Stockton to BC	32
BC-Bethany-27	Laborer G2 Concrete Laborer	1182.13	10	Stockton to BC	32
BC-Bethany-27	Laborer G2 High Pressure Nozzleman	289.86	10	Stockton to BC	32
BC-Bethany-27	Operator G1a Cranes>100 t	3191.65	10	Stockton to BC	32
BC-Bethany-27	Operator G2a Cranes 45 to 100 t	1063.88	10	Stockton to BC	32
BC-Bethany-27	Operator G4 Hvy Duty Mechanic	265.97	10	Stockton to BC	32
BC-Bethany-27	Operator G6 Screedman	577.74	10	Stockton to BC	32
BC-Bethany-27	Operator G7 Oiler	3191.65	10	Stockton to BC	32
BC-Bethany-27	Operator G8a Skidsteer <Bobcat 743	275.7	10	Stockton to BC	32
BC-Bethany-27 Total					
BC-Bethany-28	Laborer G2 General	10775.07	10	Stockton to BC	32
BC-Bethany-28	OPERATING ENGINEER FOREMAN	455.38	10	Stockton to BC	32
BC-Bethany-28	Operator G4 Grade Check	312.69	10	Stockton to BC	32
BC-Bethany-28	Teamster G2 Hwy ED 6-8cy, Water<7	906.35	10	Stockton to BC	32
BC-Bethany-28	Laborer Foreman	136.8	10	Stockton to BC	32
BC-Bethany-28	Laborer G3 Flagman	870.76	10	Stockton to BC	32
BC-Bethany-28	Operator G2 Excavator 3.5 to 7.0 cy	285.38	10	Stockton to BC	32
BC-Bethany-28	Operator G2 Finish Blade	71.35	10	Stockton to BC	32
BC-Bethany-28	Operator G4 Dozer & Push Cat	455.38	10	Stockton to BC	32
BC-Bethany-28	Operator G4a Boom truck<15 ton	3033.33	10	Stockton to BC	32
BC-Bethany-28	Operator G5 Compactor w-blade	170	10	Stockton to BC	32
BC-Bethany-28	Teamster G3 Boom Truck	3033.33	10	Stockton to BC	32
BC-Bethany-28	Teamster G3 ED 8-24cy, Water>7mgz	1726.9	10	Stockton to BC	32
BC-Bethany-28	Carpenter Apprentice	3033.33	10	Stockton to BC	32
BC-Bethany-28	Carpenter Foreman	4952.04	10	Stockton to BC	32
BC-Bethany-28	Carpenter Journeyman	18314.25	10	Stockton to BC	32
BC-Bethany-28	Cement Mason Foreman	557.75	10	Stockton to BC	32
BC-Bethany-28	Cement Mason Journeyman	2292.64	10	Stockton to BC	32
BC-Bethany-28	Electrical Foreman	3033.33	10	Stockton to BC	32
BC-Bethany-28	Electrician Journeyman	6066.67	10	Stockton to BC	32
BC-Bethany-28	Iron Worker Foreman	781.46	10	Stockton to BC	32
BC-Bethany-28	Iron Worker Journeyman Rebar/Stru	11536.9	10	Stockton to BC	32
BC-Bethany-28	Laborer G1 Vibrator, Green Cutter	200	10	Stockton to BC	32
BC-Bethany-28	Laborer G2 Concrete Laborer	600	10	Stockton to BC	32
BC-Bethany-28	Laborer G2 High Pressure Nozzleman	36.8	10	Stockton to BC	32
BC-Bethany-28	Operator G1a Cranes>100 t	100	10	Stockton to BC	32
BC-Bethany-28	Operator G2a Cranes 45 to 100 t	100	10	Stockton to BC	32
BC-Bethany-28	Operator G3 Loader >4cy	170	10	Stockton to BC	32
BC-Bethany-28	Operator G3a Cranes 45 t and under	3033.33	10	Stockton to BC	32
BC-Bethany-28	Operator G4 Hvy Duty Mechanic	25	10	Stockton to BC	32
BC-Bethany-28	Operator G6 Screedman	154.85	10	Stockton to BC	32
BC-Bethany-28	Operator G7 Oiler	100	10	Stockton to BC	32
BC-Bethany-28	Teamster G4 ED 25-65 Cy	40	10	Stockton to BC	32
BC-Bethany-28 Total					
BC-Bethany-29	Laborer G2 General	3780	10	Stockton to BC	32
BC-Bethany-29	Teamster G1 Hwy ED<6cy, Flatbed	600	10	Stockton to BC	32
BC-Bethany-29	Carpenter Foreman	2580	10	Stockton to BC	32
BC-Bethany-29	Electrician Journeyman	5160	10	Stockton to BC	32
BC-Bethany-29	Millwright	10320	10	Stockton to BC	32
BC-Bethany-29 Total					
BC-Bethany-30	Laborer G2 General	300	10	Stockton to BC	32
BC-Bethany-30	Teamster G1 Hwy ED<6cy, Flatbed	300	10	Stockton to BC	32
BC-Bethany-30	Carpenter Foreman	200	10	Stockton to BC	32
BC-Bethany-30	Electrical Foreman	100	10	Stockton to BC	32
BC-Bethany-30	Electrician Journeyman	400	10	Stockton to BC	32
BC-Bethany-30	Iron Worker Foreman	60	10	Stockton to BC	32
BC-Bethany-30	Iron Worker Journeyman Rebar/Stru	240	10	Stockton to BC	32
BC-Bethany-30	Millwright	800	10	Stockton to BC	32
BC-Bethany-30	Operator G1a Cranes>100 t	6	10	Stockton to BC	32
BC-Bethany-30	Operator G7 Oiler	6	10	Stockton to BC	32
BC-Bethany-30 Total					
BC-Bethany-31	Laborer G2 General	1000	10	Stockton to BC	32
BC-Bethany-31	Iron Worker-Rigger	2000	10	Stockton to BC	32
BC-Bethany-31	Iron Worker Foreman	1000	10	Stockton to BC	32
BC-Bethany-31	Millwright	2000	10	Stockton to BC	32
BC-Bethany-31	Operator G2a Cranes 45 to 100 t	2000	10	Stockton to BC	32
BC-Bethany-31 Total					
BC-Bethany-32	Laborer G2 General	7110.68	10	Stockton to BC	32
BC-Bethany-32	OPERATING ENGINEER FOREMAN	28.27	10	Stockton to BC	32
BC-Bethany-32	Operator G4 Grade Check	28.27	10	Stockton to BC	32
BC-Bethany-32	Teamster G2 Hwy ED 6-8cy, Water<7	14.13	10	Stockton to BC	32
BC-Bethany-32	Laborer Foreman	238.87	10	Stockton to BC	32

BC-Bethany-32	Operator G4 Dozer & Push Cat	28.27	10	Stockton to BC	32
BC-Bethany-32	Operator G4a Boom truck<15 ton	2290	10	Stockton to BC	32
BC-Bethany-32	Operator G5 Compactor w-blade	28.27	10	Stockton to BC	32
BC-Bethany-32	Teamster G3 Boom Truck	2290	10	Stockton to BC	32
BC-Bethany-32	Teamster G3 ED 8-24cy, Water>7mgz	508.77	10	Stockton to BC	32
BC-Bethany-32	Carpenter Apprentice	2290	10	Stockton to BC	32
BC-Bethany-32	Carpenter Foreman	2430.42	10	Stockton to BC	32
BC-Bethany-32	Carpenter Journeyman	5237.94	10	Stockton to BC	32
BC-Bethany-32	Cement Mason Foreman	264.86	10	Stockton to BC	32
BC-Bethany-32	Cement Mason Journeyman	1812.49	10	Stockton to BC	32
BC-Bethany-32	Iron Worker Foreman	584.97	10	Stockton to BC	32
BC-Bethany-32	Iron Worker Journeyman Rebar/Stru	8674.8	10	Stockton to BC	32
BC-Bethany-32	Laborer G1 Vibrator, Green Cutter	339.18	10	Stockton to BC	32
BC-Bethany-32	Laborer G2 Concrete Laborer	1017.54	10	Stockton to BC	32
BC-Bethany-32	Laborer G2 High Pressure Nozzleman	69.28	10	Stockton to BC	32
BC-Bethany-32	Operator G1a Cranes>100 t	269.21	10	Stockton to BC	32
BC-Bethany-32	Operator G2a Cranes 45 to 100 t	538.41	10	Stockton to BC	32
BC-Bethany-32	Operator G3 Loader >4cy	28.27	10	Stockton to BC	32
BC-Bethany-32	Operator G3a Cranes 45 t and under	2290	10	Stockton to BC	32
BC-Bethany-32	Operator G4 Hvy Duty Mechanic	134.6	10	Stockton to BC	32
BC-Bethany-32	Operator G6 Screedman	254.47	10	Stockton to BC	32
BC-Bethany-32	Operator G7 Oiler	538.41	10	Stockton to BC	32
BC-Bethany-32	Teamster G4 ED 25-65 Cy	56.54	10	Stockton to BC	32
BC-Bethany-32 Total					
BC-Bethany-33	Laborer G2 General	2915.98	10	Stockton to BC	32
BC-Bethany-33	OPERATING ENGINEER FOREMAN	26.78	10	Stockton to BC	32
BC-Bethany-33	Operator G4 Grade Check	26.78	10	Stockton to BC	32
BC-Bethany-33	Teamster G2 Hwy ED 6-8cy, Water<7	13.39	10	Stockton to BC	32
BC-Bethany-33	Laborer Foreman	12.95	10	Stockton to BC	32
BC-Bethany-33	Operator G4 Dozer & Push Cat	26.78	10	Stockton to BC	32
BC-Bethany-33	Operator G4a Boom truck<15 ton	1361.11	10	Stockton to BC	32
BC-Bethany-33	Operator G5 Compactor w-blade	26.78	10	Stockton to BC	32
BC-Bethany-33	Teamster G3 Boom Truck	1361.11	10	Stockton to BC	32
BC-Bethany-33	Teamster G3 ED 8-24cy, Water>7mgz	19.43	10	Stockton to BC	32
BC-Bethany-33	Carpenter Apprentice	1361.11	10	Stockton to BC	32
BC-Bethany-33	Carpenter Foreman	1370.72	10	Stockton to BC	32
BC-Bethany-33	Carpenter Journeyman	2789.49	10	Stockton to BC	32
BC-Bethany-33	Cement Mason Foreman	22.33	10	Stockton to BC	32
BC-Bethany-33	Cement Mason Journeyman	144.77	10	Stockton to BC	32
BC-Bethany-33	Iron Worker Foreman	45	10	Stockton to BC	32
BC-Bethany-33	Iron Worker Journeyman Rebar/Stru	3037.2	10	Stockton to BC	32
BC-Bethany-33	Laborer G1 Vibrator, Green Cutter	25.9	10	Stockton to BC	32
BC-Bethany-33	Laborer G2 Concrete Laborer	38.85	10	Stockton to BC	32
BC-Bethany-33	Laborer G2 High Pressure Nozzleman	0	10	Stockton to BC	32
BC-Bethany-33	Operator G1a Cranes>100 t	41.11	10	Stockton to BC	32
BC-Bethany-33	Operator G2a Cranes 45 to 100 t	41.11	10	Stockton to BC	32
BC-Bethany-33	Operator G3 Loader >4cy	26.78	10	Stockton to BC	32
BC-Bethany-33	Operator G3a Cranes 45 t and under	1361.11	10	Stockton to BC	32
BC-Bethany-33	Operator G4 Hvy Duty Mechanic	10.28	10	Stockton to BC	32
BC-Bethany-33	Operator G6 Screedman	19.45	10	Stockton to BC	32
BC-Bethany-33	Operator G7 Oiler	41.11	10	Stockton to BC	32
BC-Bethany-33	Teamster G4 ED 25-65 Cy	53.57	10	Stockton to BC	32
BC-Bethany-33 Total					
BC-Bethany-34	Laborer G2 General	572.84	10	Stockton to BC	32
BC-Bethany-34	OPERATING ENGINEER FOREMAN	6.3	10	Stockton to BC	32
BC-Bethany-34	Operator G4 Grade Check	6.3	10	Stockton to BC	32
BC-Bethany-34	Teamster G2 Hwy ED 6-8cy, Water<7	3.15	10	Stockton to BC	32
BC-Bethany-34	Laborer Foreman	59.92	10	Stockton to BC	32
BC-Bethany-34	Operator G4 Dozer & Push Cat	6.3	10	Stockton to BC	32
BC-Bethany-34	Operator G4a Boom truck<15 ton	25	10	Stockton to BC	32
BC-Bethany-34	Operator G5 Compactor w-blade	6.3	10	Stockton to BC	32
BC-Bethany-34	Teamster G3 Boom Truck	100	10	Stockton to BC	32
BC-Bethany-34	Teamster G3 ED 8-24cy, Water>7mgz	75	10	Stockton to BC	32
BC-Bethany-34	Carpenter Foreman	33.68	10	Stockton to BC	32
BC-Bethany-34	Carpenter Journeyman	189.24	10	Stockton to BC	32
BC-Bethany-34	Cement Mason Foreman	62.12	10	Stockton to BC	32
BC-Bethany-34	Cement Mason Journeyman	413.05	10	Stockton to BC	32
BC-Bethany-34	Electrical Foreman	100	10	Stockton to BC	32
BC-Bethany-34	Electrician Journeyman	100	10	Stockton to BC	32
BC-Bethany-34	Iron Worker Foreman	130.49	10	Stockton to BC	32
BC-Bethany-34	Iron Worker Journeyman Rebar/Stru	913.45	10	Stockton to BC	32
BC-Bethany-34	Laborer G1 Vibrator, Green Cutter	100	10	Stockton to BC	32

BC-Bethany-34	Laborer G2 Concrete Laborer	150	10	Stockton to BC	32
BC-Bethany-34	Laborer G2 High Pressure Nozzleman	9.92	10	Stockton to BC	32
BC-Bethany-34	Millwright	200	10	Stockton to BC	32
BC-Bethany-34	Operator G1a Cranes>100 t	120	10	Stockton to BC	32
BC-Bethany-34	Operator G2a Cranes 45 to 100 t	120	10	Stockton to BC	32
BC-Bethany-34	Operator G3 Loader >4cy	6.3	10	Stockton to BC	32
BC-Bethany-34	Operator G3a Cranes 45 t and under	25	10	Stockton to BC	32
BC-Bethany-34	Operator G4 Hvy Duty Mechanic	30	10	Stockton to BC	32
BC-Bethany-34	Operator G7 Oiler	120	10	Stockton to BC	32
BC-Bethany-34	Teamster G4 ED 25-65 Cy	12.6	10	Stockton to BC	32
BC-Bethany-34 Total					
BC-Bethany-35	Laborer G2 General	1994.8	10	Stockton to BC	32
BC-Bethany-35	OPERATING ENGINEER FOREMAN	59.82	10	Stockton to BC	32
BC-Bethany-35	Operator G4 Grade Check	59.82	10	Stockton to BC	32
BC-Bethany-35	Teamster G2 Hwy ED 6-8cy, Water<7	23.66	10	Stockton to BC	32
BC-Bethany-35	Laborer Foreman	270	10	Stockton to BC	32
BC-Bethany-35	Operator G2 Excavator 3.5 to 7.0 cy	25	10	Stockton to BC	32
BC-Bethany-35	Operator G2 Finish Blade	6.25	10	Stockton to BC	32
BC-Bethany-35	Operator G4 Dozer & Push Cat	59.82	10	Stockton to BC	32
BC-Bethany-35	Operator G4a Boom truck<15 ton	1342.86	10	Stockton to BC	32
BC-Bethany-35	Operator G5 Compactor w-blade	34.82	10	Stockton to BC	32
BC-Bethany-35	Teamster G3 ED 8-24cy, Water>7mg:	225	10	Stockton to BC	32
BC-Bethany-35	Carpenter Foreman	235.54	10	Stockton to BC	32
BC-Bethany-35	Carpenter Journeyman	1086.28	10	Stockton to BC	32
BC-Bethany-35	Cement Mason Foreman	499.26	10	Stockton to BC	32
BC-Bethany-35	Cement Mason Journeyman	3437.22	10	Stockton to BC	32
BC-Bethany-35	Electrical Foreman	1342.86	10	Stockton to BC	32
BC-Bethany-35	Electrical Lineman	6714.29	10	Stockton to BC	32
BC-Bethany-35	Iron Worker Foreman	1114.44	10	Stockton to BC	32
BC-Bethany-35	Iron Worker Journeyman Rebar/Stru	7801.11	10	Stockton to BC	32
BC-Bethany-35	Laborer G1 Vibrator, Green Cutter	300	10	Stockton to BC	32
BC-Bethany-35	Laborer G2 Concrete Laborer	450	10	Stockton to BC	32
BC-Bethany-35	Laborer G2 High Pressure Nozzleman	120	10	Stockton to BC	32
BC-Bethany-35	Operator G1a Cranes>100 t	40	10	Stockton to BC	32
BC-Bethany-35	Operator G2a Cranes 45 to 100 t	115	10	Stockton to BC	32
BC-Bethany-35	Operator G3 Loader >4cy	74.82	10	Stockton to BC	32
BC-Bethany-35	Operator G4 Hvy Duty Mechanic	37.5	10	Stockton to BC	32
BC-Bethany-35	Operator G7 Oiler	40	10	Stockton to BC	32
BC-Bethany-35	Pile Driver Foreman	40	10	Stockton to BC	32
BC-Bethany-35	Pile Driver Journeyman	200	10	Stockton to BC	32
BC-Bethany-35	Teamster G4 ED 25-65 Cy	144.64	10	Stockton to BC	32
BC-Bethany-35	Teamster G4 Tractor, Lowbed/Trailer	40	10	Stockton to BC	32
BC-Bethany-35 Total					
BC-Bethany-36	OPERATING ENGINEER FOREMAN	405.64	10	Stockton to BC	32
BC-Bethany-36	Operator G2 Excavator 3.5 to 7.0 cy	811.28	10	Stockton to BC	32
BC-Bethany-36	Carpenter Apprentice	140	10	Stockton to BC	32
BC-Bethany-36	Carpenter Foreman	140	10	Stockton to BC	32
BC-Bethany-36	Carpenter Journeyman	420	10	Stockton to BC	32
BC-Bethany-36	Laborer G2 Concrete Laborer	1216.93	10	Stockton to BC	32
BC-Bethany-36	Operator G2a Cranes 45 to 100 t	140	10	Stockton to BC	32
BC-Bethany-36	Teamster G4 ED 25-65 Cy	405.64	10	Stockton to BC	32
BC-Bethany-36 Total					
BC-Bethany-37	Operator G4a Boom truck<15 ton	10691.58	10	Stockton to BC	32
BC-Bethany-37	Electrical Foreman	18193.47	10	Stockton to BC	32
BC-Bethany-37	Electrical Lineman	91559.23	10	Stockton to BC	32
BC-Bethany-37	Electrician Apprentice	41494.14	10	Stockton to BC	32
BC-Bethany-37	Electrician Journeyman	7725.57	10	Stockton to BC	32
BC-Bethany-37 Total					
BC-Bethany-38	Laborer G2 General	11886.73	10	Stockton to BC	32
BC-Bethany-38	Iron Worker-Rigger	3566	10	Stockton to BC	32
BC-Bethany-38	Carpenter Foreman	224	10	Stockton to BC	32
BC-Bethany-38	Millwright	5512	10	Stockton to BC	32
BC-Bethany-38	Operator G1a Cranes>100 t	6055.37	10	Stockton to BC	32
BC-Bethany-38	Operator G2a Cranes 45 to 100 t	3566	10	Stockton to BC	32
BC-Bethany-38	Operator G7 Oiler	6055.37	10	Stockton to BC	32
BC-Bethany-38	Pipefitter Apprentice	6870	10	Stockton to BC	32
BC-Bethany-38	Pipefitter Foreman	3030	10	Stockton to BC	32
BC-Bethany-38	Pipefitter Journeyman	6870	10	Stockton to BC	32
BC-Bethany-38	Teamster G4 Tractor, Lowbed/Trailer	1249.37	10	Stockton to BC	32
BC-Bethany-38 Total					
BC-Bethany-39	Laborer G2 General	652.5	10	Stockton to BC	32
BC-Bethany-39	Operator G4a Boom truck<15 ton	1775	10	Stockton to BC	32

BC-Bethany-39	Electrical Foreman	2210	10	Stockton to BC	32
BC-Bethany-39	Electrical Lineman	7100	10	Stockton to BC	32
BC-Bethany-39	Electrician Apprentice	3550	10	Stockton to BC	32
BC-Bethany-39	Electrician Journeyman	435	10	Stockton to BC	32
BC-Bethany-39 Total					
BC-Bethany-40	Laborer G2 General	360	10	Stockton to BC	32
BC-Bethany-40	Iron Worker-Rigger	360	10	Stockton to BC	32
BC-Bethany-40	Teamster G1 Hwy ED<6cy, Flatbed	90	10	Stockton to BC	32
BC-Bethany-40	Carpenter Foreman	360	10	Stockton to BC	32
BC-Bethany-40	Carpenter Journeyman	2160	10	Stockton to BC	32
BC-Bethany-40	Operator G2a Cranes 45 to 100 t	90	10	Stockton to BC	32
BC-Bethany-40 Total					
BC-Bethany-41	Laborer G2 General	12679.35	10	Stockton to BC	32
BC-Bethany-41	OPERATING ENGINEER FOREMAN	50	10	Stockton to BC	32
BC-Bethany-41	Operator G3 BH-Loader>3/4cy	2121.66	10	Stockton to BC	32
BC-Bethany-41	Operator G4 Grade Check	50	10	Stockton to BC	32
BC-Bethany-41	Teamster G2 Hwy ED 6-8cy, Water<7	1472.56	10	Stockton to BC	32
BC-Bethany-41	Operator G5 Asphalt Roller	100	10	Stockton to BC	32
BC-Bethany-41	Operator G5 Paver	50	10	Stockton to BC	32
BC-Bethany-41	Laborer Foreman	2531.66	10	Stockton to BC	32
BC-Bethany-41	Laborer G1 Pipe layers	2046.93	10	Stockton to BC	32
BC-Bethany-41	Teamster G1 Hwy ED<6cy, Flatbed	2276.37	10	Stockton to BC	32
BC-Bethany-41	Carpenter Journeyman	260	10	Stockton to BC	32
BC-Bethany-41	Cement Mason Journeyman	130	10	Stockton to BC	32
BC-Bethany-41	Electrical Foreman	200	10	Stockton to BC	32
BC-Bethany-41	Electrical Lineman	200	10	Stockton to BC	32
BC-Bethany-41	Laborer G2 Concrete Laborer	779.99	10	Stockton to BC	32
BC-Bethany-41	Operator G3 Loader >4cy	1023.47	10	Stockton to BC	32
BC-Bethany-41	Operator G5 Curb & Gutter Conc Fini	260	10	Stockton to BC	32
BC-Bethany-41	Operator G8a Skidsteer <Bobcat 743	2096.37	10	Stockton to BC	32
BC-Bethany-41 Total					
BC-Bethany-42	Laborer G2 General	34	10	Stockton to BC	32
BC-Bethany-42	OPERATING ENGINEER FOREMAN	219.07	10	Stockton to BC	32
BC-Bethany-42	Operator G3 BH-Loader>3/4cy	102.5	10	Stockton to BC	32
BC-Bethany-42	Teamster G2 Hwy ED 6-8cy, Water<7	34	10	Stockton to BC	32
BC-Bethany-42	Laborer Foreman	102.5	10	Stockton to BC	32
BC-Bethany-42	Operator G2 Excavator 3.5 to 7.0 cy	110.57	10	Stockton to BC	32
BC-Bethany-42	Operator G2 Finish Blade	127.64	10	Stockton to BC	32
BC-Bethany-42	Operator G4 Dozer & Push Cat	110.57	10	Stockton to BC	32
BC-Bethany-42	Teamster G1 Hwy ED<6cy, Flatbed	119.5	10	Stockton to BC	32
BC-Bethany-42	Teamster G3 ED 8-24cy, Water>7mgz	221.14	10	Stockton to BC	32
BC-Bethany-42	Laborer G3 Fence Builder	410	10	Stockton to BC	32
BC-Bethany-42	Operator G4 Scraper	200	10	Stockton to BC	32
BC-Bethany-42	Operator G6 Tractor	17	10	Stockton to BC	32
BC-Bethany-42 Total					
BC-Bethany-43	Bottomlander	715	10	Stockton to BC	19
BC-Bethany-43	Crane Oiler	715	10	Stockton to BC	19
BC-Bethany-43	Electrician	1430	10	Stockton to BC	19
BC-Bethany-43	Hyd Crane Operator	715	10	Stockton to BC	19
BC-Bethany-43	Lead Miner	715	10	Stockton to BC	19
BC-Bethany-43	Mechanic / Welder	1430	10	Stockton to BC	19
BC-Bethany-43	Miner	2860	10	Stockton to BC	19
BC-Bethany-43	Shaft Crane Operator	715	10	Stockton to BC	19
BC-Bethany-43	Shifter	715	10	Stockton to BC	19
BC-Bethany-43	Toplander	715	10	Stockton to BC	19
BC-Bethany-43 Total					
BC-Bethany-44	Laborer G2 General	600	10	Stockton to BC	32
BC-Bethany-44	Laborer Foreman	600	10	Stockton to BC	32
BC-Bethany-44	Teamster G1 Hwy ED<6cy, Flatbed	375	10	Stockton to BC	32
BC-Bethany-44	Teamster G3 ED 8-24cy, Water>7mgz	1200	10	Stockton to BC	32
BC-Bethany-44	Carpenter Foreman	300	10	Stockton to BC	32
BC-Bethany-44	Carpenter Journeyman	2100	10	Stockton to BC	32
BC-Bethany-44	Cement Mason Foreman	450	10	Stockton to BC	32
BC-Bethany-44	Cement Mason Journeyman	2400	10	Stockton to BC	32
BC-Bethany-44	Iron Worker Foreman	950	10	Stockton to BC	32
BC-Bethany-44	Iron Worker Journeyman Rebar/Stru	5200	10	Stockton to BC	32
BC-Bethany-44	Laborer G1 Vibrator, Green Cutter	600	10	Stockton to BC	32
BC-Bethany-44	Laborer G2 Concrete Laborer	2700	10	Stockton to BC	32
BC-Bethany-44	Laborer G2 High Pressure Nozzleman	300	10	Stockton to BC	32
BC-Bethany-44	Operator G1a Cranes>100 t	345	10	Stockton to BC	32
BC-Bethany-44	Operator G2a Cranes 45 to 100 t	150	10	Stockton to BC	32
BC-Bethany-44	Operator G4 Welder	150	10	Stockton to BC	32

BC-Bethany-44	Operator G5 Concrete Pump	300	10	Stockton to BC	32
BC-Bethany-44	Operator G7 Oiler	345	10	Stockton to BC	32



Marine Inventory for Bethany Complex  
Options B2

Code	Dock Site	# of Vessels/Day	Engine Tier	Propulsion Engine (hours/day)	Auxiliary Engine (hours/day)	Propulsion Engine Horsepower	Auxiliary Engine Horsepower	Fuel Type	Fuel (gal/day) (if known)
------	-----------	---------------------	-------------	----------------------------------	---------------------------------	---------------------------------	--------------------------------	-----------	------------------------------

NOT NEEDED

Locomotive Inventory for Bethany Complex  
Options B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine Horsepower	Operating Hours/Day	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if known)
------	-----------------	------------	-------------	----------------------	------------------------	----------------	-----------	------------------------------

NOT NEEDED

**Helicopter Inventory for Bethany Complex  
Options B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover Hours per Day	Fuel (gal/day) (if known)
------	-----------------	-----------	-------------	-------------------------------	------------------------------

NOT NEEDED

**Option B2**

[illegible]

**Demolition Assumptions for Bethany Complex  
Options B2**

Code	# of Structures Demolished	# day	Demolition per day (sf)
------	-------------------------------	-------	-------------------------

NOT NEEDED

**Construction Schedule for Bethany Aqueduct  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
01 - Mobilization for Pipeline construction	BAQ-Bethany-01	10/8/2030	11/4/2030	20	5	10
02 - Contractor Site Management & Facilities	BAQ-Bethany-02	10/8/2030	6/12/2035	1221	5	10
03 - Clear and Grub	BAQ-Bethany-03	11/5/2030	5/7/2031	132	5	10
04 - Bridges at Jones Penstocks	BAQ-Bethany-04	2/27/2031	3/25/2031	19	5	10
05 - Bridges at BBID	BAQ-Bethany-05	3/24/2031	4/18/2031	20	5	10
06 - Mobilization	BAQ-Bethany-06	3/25/2031	5/14/2031	37	5	10
07 - Portal excavation	BAQ-Bethany-07	4/8/2031	5/15/2031	28	5	10
08 - Bridges at Gas Line Crossing	BAQ-Bethany-08	4/18/2031	5/16/2031	21	5	10
09 - Tunnel Construction - Jones Crossing	BAQ-Bethany-09	5/1/2031	6/20/2031	37	6	20
10 - Aqueduct Tunnel Construction - Bethany approach	BAQ-Bethany-10	6/20/2031	9/27/2033	593	6	20
11 - Fit Pipe	BAQ-Bethany-11	4/26/2033	5/11/2035	534	5	10
12 - Backfill above the Pipe	BAQ-Bethany-12	7/29/2033	6/1/2035	481	5	10
13 - Dewatering	BAQ-Bethany-13	9/27/2033	5/25/2035	434	5	10
14 - Trench Excavation - Aqueduct Pipeline	BAQ-Bethany-14	9/27/2033	11/3/2034	289	5	10
15 - Backfill within Tunnels	BAQ-Bethany-15	10/21/2033	5/19/2034	151	5	10
16 - CLSM backfill	BAQ-Bethany-16	1/20/2034	5/11/2035	341	5	10
17 - Permanent Patrol Road	BAQ-Bethany-17	12/13/2034	6/5/2035	125	5	10
18 - Site restoration - Aqueduct pipeline	BAQ-Bethany-18	12/19/2034	6/12/2035	126	5	10
<b>Total Area</b>	<b>138 acres</b>					

Offroad Equipment (Fossil Fuel) Inventory for Bethany Aqueduct  
Option B2

Code	Equipment Name	General Equipment Category	Hours	# day	Hours/day/ equipment	Fuel Type	Engine Horsepower (if known)	Load Factor	Fuel Efficiency (gal/day)	Fuel (gal/day) (if known)
BAQ-Bethany-01	CAT Forklift 5,500 LB	Aerial Lifts	80	20	4	Diesel	63	0.31		
BAQ-Bethany-01	Hydraulic 15 Ton Crane	Crane	80	20	4	Diesel	85	0.29		
BAQ-Bethany-02	CAT Forklift 5,500 LB	Aerial Lifts	2048	1221	2	Diesel	63	0.31		
BAQ-Bethany-02	CAT Forklift 5,500 LB	Aerial Lifts	1216	1221	1	Diesel	63	0.31		
BAQ-Bethany-02	CAT Forklift 5,500 LB	Aerial Lifts	3280	1221	2.686322686	Diesel	63	0.31		
BAQ-Bethany-02	Hydraulic 9 Ton Crane	Crane	2048	1221	2	Diesel	85	0.29		
BAQ-Bethany-02	Hydraulic 9 Ton Crane	Crane	1216	1221	1	Diesel	85	0.29		
BAQ-Bethany-02	Hydraulic 9 Ton Crane	Crane	3280	1221	3	Diesel	85	0.29		
BAQ-Bethany-03	CAT D8 Dozer	Crawler Tractor	1009.25	132	8	Diesel	328	0.43		
BAQ-Bethany-03	CAT D8 Dozer	Crawler Tractor	594.08	132	5	Diesel	328	0.43		
BAQ-Bethany-03	CAT Grader 16H	Grader	1009.25	132	8	Diesel	285	0.41		
BAQ-Bethany-03	CAT Grader 16H	Grader	594.08	132	5	Diesel	285	0.41		
BAQ-Bethany-03	CAT 320D, 1.56cy, 153 hp	Excavator	1009.25	132	8	Diesel	138	0.38		
BAQ-Bethany-03	CAT 320D, 1.56cy, 153 hp	Excavator	1135.4	132	9	Diesel	138	0.38		
BAQ-Bethany-03	CAT 320D, 1.56cy, 153 hp	Excavator	594.08	132	5	Diesel	138	0.38		
BAQ-Bethany-03	CAT 320D, 1.56cy, 153 hp	Excavator	668.34	132	5	Diesel	138	0.38		
BAQ-Bethany-03	CAT D4 Dozer	Crawler Tractor	1135.4	132	9	Diesel	92	0.43		
BAQ-Bethany-03	CAT D4 Dozer	Crawler Tractor	668.34	132	5	Diesel	92	0.43		
BAQ-Bethany-04	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	21.49	19	1	Diesel or Hybrid	130	0.36		
BAQ-Bethany-04	CAT D8 Dozer	Crawler Tractor	21.49	19	1	Diesel	328	0.43		
BAQ-Bethany-04	Concrete Pump Truck	Off-Highway Truck	16	19	1	Diesel	300	0.38		
BAQ-Bethany-04	CAT Grader 16H	Grader	21.49	19	1	Diesel	285	0.41		
BAQ-Bethany-04	CAT Grader 12H	Grader	14.22	19	1	Diesel	173	0.41		
BAQ-Bethany-04	CAT D4 Dozer	Crawler Tractor	14.22	19	1	Diesel	92	0.43		
BAQ-Bethany-04	CAT Hyd Excavator 3.15 CY	Excavator	14.22	19	1	Diesel	400	0.38		
BAQ-Bethany-05	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	24.18	20	1	Diesel or Hybrid	130	0.36		
BAQ-Bethany-05	CAT D8 Dozer	Crawler Tractor	24.18	20	1	Diesel	328	0.43		
BAQ-Bethany-05	Concrete Pump Truck	Off-Highway Truck	17.98	20	1	Diesel	300	0.38		
BAQ-Bethany-05	CAT Grader 16H	Grader	24.18	20	1	Diesel	285	0.41		
BAQ-Bethany-05	CAT Grader 12H	Grader	16	20	1	Diesel	173	0.41		
BAQ-Bethany-05	CAT D4 Dozer	Crawler Tractor	16	20	1	Diesel	92	0.43		
BAQ-Bethany-05	CAT Hyd Excavator 3.15 CY	Excavator	16	20	1	Diesel	400	0.38		
BAQ-Bethany-07	250 CFM Compressor Diesel	Air Compressor	89	28	3.2	Diesel - Tier 3	75	0.48		
BAQ-Bethany-07	CAT D8 Dozer	Crawler Tractor	758	28	27.1	Diesel	328	0.43		
BAQ-Bethany-07	CAT D8 Dozer	Crawler Tractor	471.12	28	16.8	Diesel	328	0.43		
BAQ-Bethany-07	CAT D8 Dozer	Crawler Tractor	541.4	28	19	Diesel	328	0.43		
BAQ-Bethany-07	Grader 16H - 16' Blade	Grader	235.56	28	8	Diesel	285	0.41		
BAQ-Bethany-07	Grader 16H - 16' Blade	Grader	270.7	28	10	Diesel	285	0.41		
BAQ-Bethany-07	Grader 16H - 16' Blade	Grader	379	28	14	Diesel	285	0.41		
BAQ-Bethany-07	CAT 825H Compactor	Rollers	235.56	28	8	Diesel	401	0.38		
BAQ-Bethany-07	CAT 825H Compactor	Rollers	270.7	28	10	Diesel	401	0.38		
BAQ-Bethany-07	CAT 825H Compactor	Rollers	379	28	14	Diesel	401	0.38		
BAQ-Bethany-07	621G 44 CY	Scaper	758	28	27	Diesel	330	0.48		
BAQ-Bethany-07	621G 44 CY	Scaper	471.12	28	17	Diesel	330	0.48		
BAQ-Bethany-07	621G 44 CY	Scaper	541.4	28	19	Diesel	330	0.48		
BAQ-Bethany-07	631G 33 CY	Scaper	758	28	27	Diesel	515	0.48		
BAQ-Bethany-07	631G 33 CY	Scaper	471.12	28	17	Diesel	515	0.48		
BAQ-Bethany-07	631G 33 CY	Scaper	541.4	28	19	Diesel	515	0.48		
BAQ-Bethany-07	Trailer Shotcrete Pump 45 CY	Pumps	89	28	3	Diesel	225	0.74		
BAQ-Bethany-08	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	24.18	21	1	Diesel or Hybrid	130	0.36		
BAQ-Bethany-08	CAT D8 Dozer	Crawler Tractor	24.18	21	1	Diesel	328	0.43		
BAQ-Bethany-08	Concrete Pump Truck	Off-Highway Truck	17.98	21	1	Diesel	300	0.38		
BAQ-Bethany-08	CAT Grader 16H	Grader	24.18	21	1	Diesel	285	0.41		
BAQ-Bethany-08	CAT Grader 12H	Grader	16	21	1	Diesel	173	0.41		
BAQ-Bethany-08	CAT D4 Dozer	Crawler Tractor	16	21	1	Diesel	92	0.43		
BAQ-Bethany-08	CAT Hyd Excavator 3.15 CY	Excavator	16	21	1	Diesel	400	0.38		
BAQ-Bethany-09	250 CFM Compressor Diesel	Air Compressor	85	37	2	Diesel - Tier 3	75	0.48		
BAQ-Bethany-09	Trailer Conc Pump 100 CY HR	Pumps	5.13	37	0	Diesel	200	0.74		
BAQ-Bethany-09	CAT RT1300G LHM	Rubber Tired Loaders	232.56	37	6	Diesel	165	0.36		
BAQ-Bethany-09	Portable 90 Kw Diesel Gen	Generator	85	37	2	Diesel - Tier 4	158	0.74		
BAQ-Bethany-09	Telescope RT Forklift 5500	Forklifts	85	37	2.297297297	Diesel	63	0.2		
BAQ-Bethany-09	Telescope RT Forklift 5500	Forklifts	171	37	5	Diesel	63	0.2		
BAQ-Bethany-09	Trailer Shotcrete Pump 45 CY	Pumps	49.59	37	1	Diesel	225	0.74		
BAQ-Bethany-10	250 CFM Compressor Diesel	Air Compressor	1417	593	2	Diesel - Tier 3	75	0.48		
BAQ-Bethany-10	Trailer Conc Pump 100 CY HR	Pumps	23.38	593	0.039426644	Diesel	200	0.74		
BAQ-Bethany-10	Air Track Drill	Bore/Drill Rigs	267.22	593	0.450623946	Diesel	40	0.5		
BAQ-Bethany-10	CAT RT1300G LHM	Rubber Tired Loaders	10	593	0.016863406	Diesel	165	0.36		
BAQ-Bethany-10	CAT RT1300G LHM	Rubber Tired Loaders	529.99	593	0.893743676	Diesel	165	0.36		
BAQ-Bethany-10	CAT RT1300G LHM	Rubber Tired Loaders	2137.72	593	3.604924115	Diesel	165	0.36		
BAQ-Bethany-10	Portable 90 Kw Diesel Gen	Generator	1417	593	2.389544688	Diesel - Tier 4	158	0.74		
BAQ-Bethany-10	Telescope RT Forklift 5500	Forklifts	10	593	0.016863406	Diesel	63	0.2		
BAQ-Bethany-10	Telescope RT Forklift 5500	Forklifts	1417	593	2.389544688	Diesel	63	0.2		
BAQ-Bethany-10	Telescope RT Forklift 5500	Forklifts	2055.5	593	3.466273187	Diesel	63	0.2		
BAQ-Bethany-10	Telescope RT Forklift 5500	Forklifts	529.99	593	0.893743676	Diesel	63	0.2		
BAQ-Bethany-10	Trailer Shotcrete Pump 45 CY	Pumps	267.22	593	0.450623946	Diesel	225	0.74		
BAQ-Bethany-10	Trailer Shotcrete Pump 45 CY	Pumps	226.03	593	0.381163575	Diesel	225	0.74		
BAQ-Bethany-11	150 KW Diesel Generator	Generator	800	534	1.498127341	Diesel - Tier 4	183	0.74		
BAQ-Bethany-11	150 KW Diesel Generator	Generator	184	534	0.344569288	Diesel - Tier 4	183	0.74		
BAQ-Bethany-11	150 KW Diesel Generator	Generator	3222	534	6.033707865	Diesel - Tier 4	183	0.74		
BAQ-Bethany-11	150 KW Diesel Generator	Generator	4000	534	7.490636704	Diesel - Tier 4	183	0.74		
BAQ-Bethany-11	150 KW Diesel Generator	Generator	1376	534	2.576779026	Diesel - Tier 4	183	0.74		
BAQ-Bethany-11	250 CFM Compressor Diesel	Air Compressor	184	534	0.344569288	Diesel - Tier 3	75	0.48		
BAQ-Bethany-11	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	2864	534	5	Diesel or Hybrid	130	0.36		
BAQ-Bethany-11	CAT Forklift 5,500 LB	Aerial Lifts	3222	534	6	Diesel	63	0.31		
BAQ-Bethany-11	Hydraulic 25 Ton Crane	Crane	192	534	0	Diesel	100	0.29		
BAQ-Bethany-11	Hydraulic 25 Ton Crane	Crane	3222	534	6	Diesel	100	0.29		
BAQ-Bethany-11	Hydraulic 25 Ton Crane	Crane	254.26	534	0	Diesel	100	0.29		
BAQ-Bethany-11	Hydraulic 25 Ton Crane	Crane	150.28	534	0	Diesel	100	0.29		
BAQ-Bethany-11	Manitowoc 999-275 Ton Crane	Crane	400	534	1	Diesel	900	0.29		
BAQ-Bethany-11	Manitowoc 999-275 Ton Crane	Crane	2000	534	4	Diesel	900	0.29		
BAQ-Bethany-11	Manitowoc 999-275 Ton Crane	Crane	184	534	0	Diesel	900	0.29		
BAQ-Bethany-11	Manitowoc 999-275 Ton Crane	Crane	688	534	1	Diesel	900	0.29		
BAQ-Bethany-11	Manitowoc 999-275 Ton Crane	Crane	2864	534	5	Diesel	900	0.29		
BAQ-Bethany-11	Air Compressor 375 CFM Diesel	Air Compressor	3222	534	6	Diesel - Tier 4	122	0.48		
BAQ-Bethany-11	Electric Welder 400 AMP	Welder	800	534	1	Diesel	33	0.45		
BAQ-Bethany-11	Electric Welder 400 AMP	Welder	184	534	0	Diesel	33	0.45		
BAQ-Bethany-11	Electric Welder 400 AMP	Welder	4000	534	7	Diesel	33	0.45		
BAQ-Bethany-11	Electric Welder 400 AMP	Welder	1376	534	3	Diesel	33	0.45		
BAQ-Bethany-11	Grout Mixer	Cement & Mortar Mix	3222	534	6	Diesel	70	0.56		
BAQ-Bethany-11	Grout Pump	Cement & Mortar Mix	3222	534	6	Diesel	500	0.56		
BAQ-Bethany-11	Patrol Car	Vehicle	1432	534	9	Diesel	0	0		
BAQ-Bethany-11	Sand Blaster Portable	Pumps	3222	534	6.033707865	Diesel	0	0.74		
BAQ-Bethany-11	Centrifuge Tube Wall Spraying Machine	Pumps	3222	534	6	Diesel	0	0.74		
BAQ-Bethany-11	CAT Load/HOE 416E	Rubber Tired Loaders	180	534	0	Diesel	78	0.36		
BAQ-Bethany-12	250 CFM Compressor Diesel	Air Compressor	64	481	0	Diesel - Tier 3	75	0.48		

BAQ-Bethany-12	250 CFM Compressor Diesel	Air Compressor	104	481	0	Diesel - Tier 3	75	0.48
BAQ-Bethany-12	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	1010.96	481	2	Diesel or Hybrid	130	0.36
BAQ-Bethany-12	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	594.08	481	1	Diesel or Hybrid	130	0.36
BAQ-Bethany-12	CAT D8 Dozer	Crawler Tractor	1010.96	481	2	Diesel	328	0.43
BAQ-Bethany-12	CAT D8 Dozer	Crawler Tractor	594.08	481	1	Diesel	328	0.43
BAQ-Bethany-12	CAT 825H Compactor	Rollers	126.16	481	0	Diesel	401	0.38
BAQ-Bethany-12	CAT 825H Compactor	Rollers	74.26	481	0	Diesel	401	0.38
BAQ-Bethany-12	CAT Grader 16H	Grader	126.16	481	0	Diesel	285	0.41
BAQ-Bethany-12	CAT Grader 16H	Grader	74.26	481	0	Diesel	285	0.41
BAQ-Bethany-12	CAT Grader 16H	Grader	1010.96	481	2	Diesel	285	0.41
BAQ-Bethany-12	CAT Grader 16H	Grader	594.08	481	1	Diesel	285	0.41
BAQ-Bethany-12	Grout Mixer	Cement & Mortar Mix	64	481	0	Diesel	70	0.56
BAQ-Bethany-12	Grout Mixer	Cement & Mortar Mix	104	481	0	Diesel	70	0.56
BAQ-Bethany-12	Grout Pump	Cement & Mortar Mix	64	481	0	Diesel	500	0.56
BAQ-Bethany-12	Grout Pump	Cement & Mortar Mix	104	481	0	Diesel	500	0.56
BAQ-Bethany-13	150 KW Diesel Generator	Generator	1200	434	3	Diesel - Tier 4	183	0.74
BAQ-Bethany-13	150 KW Diesel Generator	Generator	480	434	1	Diesel - Tier 4	183	0.74
BAQ-Bethany-13	Hydraulic 15 Ton Crane	Crane	120	434	0	Diesel	85	0.29
BAQ-Bethany-13	Hydraulic 15 Ton Crane	Crane	200	434	0	Diesel	85	0.29
BAQ-Bethany-14	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	252.31	289	1	Diesel or Hybrid	130	0.36
BAQ-Bethany-14	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	148.52	289	1	Diesel or Hybrid	130	0.36
BAQ-Bethany-14	CAT D8 Dozer	Crawler Tractor	64	289	0	Diesel	328	0.43
BAQ-Bethany-14	CAT D8 Dozer	Crawler Tractor	104	289	0	Diesel	328	0.43
BAQ-Bethany-14	CAT D8 Dozer	Crawler Tractor	1135.4	289	4	Diesel	328	0.43
BAQ-Bethany-14	CAT D8 Dozer	Crawler Tractor	668.34	289	2	Diesel	328	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	64	289	0	Diesel	92	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	252.31	289	1	Diesel	92	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	148.52	289	1	Diesel	92	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	104	289	0	Diesel	92	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	1135.4	289	4	Diesel	92	0.43
BAQ-Bethany-14	CAT D4 Dozer	Crawler Tractor	668.34	289	2	Diesel	92	0.43
BAQ-Bethany-14	CAT Hyd Excavator 3.15 CY	Excavator	64	289	0	Diesel	400	0.38
BAQ-Bethany-14	CAT Hyd Excavator 3.15 CY	Excavator	104	289	0	Diesel	400	0.38
BAQ-Bethany-14	CAT Hyd Excavator 3.15 CY	Excavator	1135.4	289	4	Diesel	400	0.38
BAQ-Bethany-14	CAT Hyd Excavator 3.15 CY	Excavator	668.34	289	2	Diesel	400	0.38
BAQ-Bethany-14	CAT CS-74, Roller, 17tn, 156HP	Rollers	252.31	289	1	Diesel	156	0.38
BAQ-Bethany-14	CAT CS-74, Roller, 17tn, 156HP	Rollers	148.52	289	1	Diesel	156	0.38
BAQ-Bethany-15	250 CFM Compressor Diesel	Air Compressor	784	151	5	Diesel - Tier 3	75	0.48
BAQ-Bethany-15	Grout Mixer	Cement & Mortar Mix	784	151	5	Diesel	70	0.56
BAQ-Bethany-15	Grout Pump	Cement & Mortar Mix	784	151	5	Diesel	500	0.56
BAQ-Bethany-16	250 CFM Compressor Diesel	Air Compressor	1012.99	341	3	Diesel - Tier 3	75	0.48
BAQ-Bethany-16	250 CFM Compressor Diesel	Air Compressor	597.13	341	2	Diesel - Tier 3	75	0.48
BAQ-Bethany-16	Grout Mixer	Cement & Mortar Mix	1012.99	341	3	Diesel	70	0.56
BAQ-Bethany-16	Grout Mixer	Cement & Mortar Mix	597.13	341	2	Diesel	70	0.56
BAQ-Bethany-16	Grout Pump	Cement & Mortar Mix	1012.99	341	3	Diesel	500	0.56
BAQ-Bethany-16	Grout Pump	Cement & Mortar Mix	597.13	341	2	Diesel	500	0.56
BAQ-Bethany-17	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	31.54	125	0	Diesel or Hybrid	130	0.36
BAQ-Bethany-17	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	18.57	125	0	Diesel or Hybrid	130	0.36
BAQ-Bethany-17	CAT D4 Dozer	Crawler Tractor	31.54	125	0	Diesel	92	0.43
BAQ-Bethany-17	CAT D4 Dozer	Crawler Tractor	18.57	125	0	Diesel	92	0.43
BAQ-Bethany-17	CAT CS-74, Roller, 17tn, 156HP	Rollers	31.54	125	0	Diesel	156	0.38
BAQ-Bethany-17	CAT CS-74, Roller, 17tn, 156HP	Rollers	18.57	125	0	Diesel	156	0.38
BAQ-Bethany-18	CAT Forklift 5,500 LB	Aerial Lifts	40	126	0	Diesel	63	0.31
BAQ-Bethany-18	Hydraulic 15 Ton Crane	Crane	40	126	0	Diesel	85	0.29



Offroad Equipment (Electric) Inventory for Bethany Aqueduct  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BAQ-Bethany-04	Concrete Vibrator	32	19	3	5
BAQ-Bethany-05	Concrete Vibrator	35.96	20	3	5
BAQ-Bethany-08	Concrete Vibrator	35.96	21	3	5
BAQ-Bethany-11	Axial Fan 114,000 CFM	3,222	534	50	302

Vehicle Inventory for Bethany Aqueduct

Option B2

Code	Vehicle	Primary Trip Purpose/Location (within construction footprint vs. offsite)	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency (gal/1 day) (if known)
Vehicle Use on Paved Roads --- and Not on Construction Site												
BAQ-Bethany-01	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	20	937	1.1	878	44	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-02	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	1221	18	1.1	17	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-02	Water truck 4000 gal	Water from Lodi	1221	0	1.1	0	0	Bethany Aqueduct from Lodi	32	64	Diesel	
BAQ-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	132	50	1.1	47	0.4	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-04	40 Ton Tractor & Trailer	General Materials from Stockton	19	21	1.1	20	1	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-04	40 Ton Tractor & Trailer	Rebar from Livermore	19	1	0.6	2	0.1	Bethany Aqueduct from Livermore	17	34	Diesel	
BAQ-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	19	10	1.1	9	0.5	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-04	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	19	3	0.1	38	2.0	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-05	40 Ton Tractor & Trailer	General Materials from Stockton	20	32	1.1	30	2	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-05	40 Ton Tractor & Trailer	Rebar from Livermore	20	1.133333333	0.6	2	0	Bethany Aqueduct from Livermore	17	34	Diesel	
BAQ-Bethany-05	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	20	10.66666667	1.1	10	1	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-05	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	20	3	0.1	43	2.2	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-06	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	37	23	0.1	351	9	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	28	5	1.1	5	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-07	Concrete Transit Mix Truck 12cy	concrete from Bethany Complex Batch Pl	28	1.266666667	0.1	19	1	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-08	40 Ton Tractor & Trailer	General Materials from Stockton	21	32	1.1	30	1	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-08	40 Ton Tractor & Trailer	Rebar from Livermore	21	1	0.6	2	0.1	Bethany Aqueduct from Livermore	17	34	Diesel	
BAQ-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	21	11	1.1	10	0.5	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-08	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	21	3	0.1	43	2.0	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-09	40 Ton Tractor & Trailer	Steel from Tracy	37	4	0.3	12	0.3	Bethany Aqueduct from Tracy	10	20	Diesel	
BAQ-Bethany-09	40 Ton Tractor & Trailer	Rebar from Livermore	37	16	0.6	28	1	Bethany Aqueduct from Livermore	17	34	Diesel	
BAQ-Bethany-09	20 Ton Flatbed Truck/End Dump	Timber from Stockton	37	8.5	1.1	8	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-09	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	37	8.5	0.1	128	3	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-10	40 Ton Tractor & Trailer	General Materials from Stockton	593	572	1.1	536	1	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-10	40 Ton Tractor & Trailer	Steel from Tracy	593	31	0.3	92	0.2	Bethany Aqueduct from Tracy	10	20	Diesel	
BAQ-Bethany-10	40 Ton Tractor & Trailer	Rebar from Livermore	593	48	0.6	84	0.1	Bethany Aqueduct from Livermore	17	34	Diesel	
BAQ-Bethany-10	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	593	290	1.1	272	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-10	20 Ton Flatbed Truck/End Dump	Timber from Stockton	593	21.3	1.1	20	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-10	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	593	67.5	0.1	1012	2	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-11	40 Ton Tractor & Trailer	General Materials from Stockton	534	1542	1.1	1446	2.7	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-11	40 Ton Tractor & Trailer	Steel from Tracy	534	669	0.3	2008	4	Bethany Aqueduct from Tracy	10	20	Diesel	
BAQ-Bethany-11	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	534	2688	1.1	2520	5	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-11	Concrete Transit Mix Truck 12cy	concrete from Bethany Complex Batch Pl	534	88	0.1	1314	2	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-12	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	481	7	1.1	7	0.0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-12	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	481	535	0.1	8018	16.7	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-13	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	434	426.7	1.1	400	1	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	289	9.6	1.1	9	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-14	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	289	1495	0.7	2135	7.4	Bethany Aqueduct from Vernalis	21	42	Diesel	
BAQ-Bethany-15	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	151	1	1.1	1	0.0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-15	Concrete Transit Mix Truck 12cy	concrete from Bethany Complex Batch Pl	151	333	0.1	4989	33.0	Bethany Aqueduct from Bethany Complex Batch Plant	2	4	Diesel	
BAQ-Bethany-16	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	341	2.1	1.1	2	0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-16	Concrete Transit Mix Truck 12cy	Concrete CLSM from Bethany Aqueduct Pug Mill	341	2055.6	0.1	32834	90	Bethany Aqueduct from Bethany Aqueduct Pug Mill	2	4	Diesel	
BAQ-Bethany-17	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	125	2	1.1	2	0.0	Bethany Aqueduct from Stockton	32	64	Diesel	
BAQ-Bethany-17	20 Ton Flatbed Truck/End Dump	Base Rock Delivered from Vernalis	125	157	0.7	224	1.8	Bethany Aqueduct from Vernalis	21	42	Diesel	
BAQ-Bethany-18	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	126	2	1.1	2	0.0	Bethany Aqueduct from Stockton	32	64	Diesel	

Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site

										Miles On Site		
BAQ-Bethany-01	Heavy Flatbed 10 Ton	Off-Highway Truck	20	160	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	800	Diesel	
BAQ-Bethany-02	Highway Flatbed 10 Ton	Off-Highway Truck	1221	6544	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	32720	Diesel	
BAQ-Bethany-04	CAT 730 Rear Dump	Dumpers	19	64	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	321	Diesel or Hybrid	
BAQ-Bethany-05	CAT 730 Rear Dump	Dumpers	20	72.19	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	361	Diesel or Hybrid	
BAQ-Bethany-08	CAT 730 Rear Dump	Dumpers	21	72.19	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	361	Diesel or Hybrid	
BAQ-Bethany-09	Mechanics Maintenance Truck	Off-Highway Truck	37	340	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	1700	Diesel	
BAQ-Bethany-10	Mechanics Maintenance Truck	Off-Highway Truck	593	5668	not applicable	not applicable	not applicable	on-site: assume 5 miles/hr	not applicable	28340	Diesel	
BAQ-Bethany-11	Highway Flatbed 10 Ton	Off-Highway Truck	534	3083.56	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	15408	Diesel	
BAQ-Bethany-11	Pipe Transport Truck	Off-Highway Truck	534	1728	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	28440	Diesel	
BAQ-Bethany-12	CAT 730 Rear Dump	Dumpers	481	1605	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	8025	Diesel or Hybrid	
BAQ-Bethany-14	CAT 730 Rear Dump	Dumpers	289	6216	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	21580	Diesel or Hybrid	
BAQ-Bethany-18	Heavy Flatbed 10 Ton	Off-Highway Truck	126	80	not applicable	not applicable	not applicable	in-site: assume 5 miles/hr	not applicable	400	Diesel	

**Employees Required to Bethany Aqueduct  
Option B2**

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/ One-way Trip/Day
BAQ-Bethany-01	Flat Truck Driver	160	10	Stockton to BAQ	32
BAQ-Bethany-01	General Foreman	160	10	Stockton to BAQ	32
BAQ-Bethany-01	General Laborer	320	10	Stockton to BAQ	32
BAQ-Bethany-01	Hyd Crane Operator	160	10	Stockton to BAQ	32
BAQ-Bethany-01	Mechanic / Welder	160	10	Stockton to BAQ	32
BAQ-Bethany-01 Total					
BAQ-Bethany-02	Laborer G2 General	160	10	Stockton to BAQ	32
BAQ-Bethany-02	Electrician	6544	10	Stockton to BAQ	32
BAQ-Bethany-02	Flat Truck Driver	6544	10	Stockton to BAQ	32
BAQ-Bethany-02	General Laborer	19632	10	Stockton to BAQ	32
BAQ-Bethany-02	Hyd Crane Operator	6544	10	Stockton to BAQ	32
BAQ-Bethany-02	Mechanic / Welder	6544	10	Stockton to BAQ	32
BAQ-Bethany-02	Forklift Operator	6544	10	Stockton to BAQ	32
BAQ-Bethany-02	Accountant	42	10	Stockton to BAQ	32
BAQ-Bethany-02	Concrete Superintendent	13	10	Stockton to BAQ	32
BAQ-Bethany-02	Cost Engineer	47.5	10	Stockton to BAQ	32
BAQ-Bethany-02	Electrical Superintendent	41.96	10	Stockton to BAQ	32
BAQ-Bethany-02	Environmental Manager	12.96	10	Stockton to BAQ	32
BAQ-Bethany-02	Equipment Superintendent	12.96	10	Stockton to BAQ	32
BAQ-Bethany-02	Field Engineer	61.75	10	Stockton to BAQ	32
BAQ-Bethany-02	General Superintendent	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Geotechnical Manager	41.96	10	Stockton to BAQ	32
BAQ-Bethany-02	Office Administrator	30	10	Stockton to BAQ	32
BAQ-Bethany-02	Office Manager	33	10	Stockton to BAQ	32
BAQ-Bethany-02	Payroll Clerk	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Project Engineer	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Project Manager	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Purchasing Agent	62	10	Stockton to BAQ	32
BAQ-Bethany-02	QC Manager	42	10	Stockton to BAQ	32
BAQ-Bethany-02	QC Technician	12.5	10	Stockton to BAQ	32
BAQ-Bethany-02	Runner	33	10	Stockton to BAQ	32
BAQ-Bethany-02	Safety Engineer	91.93	10	Stockton to BAQ	32
BAQ-Bethany-02	Safety Manager	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Schedule Engineer	41.5	10	Stockton to BAQ	32
BAQ-Bethany-02	Shift Engineers	123.93	10	Stockton to BAQ	32
BAQ-Bethany-02	Survey Party Chief	62	10	Stockton to BAQ	32
BAQ-Bethany-02	Survey Rod Man	91	10	Stockton to BAQ	32
BAQ-Bethany-02	Tunnel Superintendent	32.96	10	Stockton to BAQ	32
BAQ-Bethany-02	Tunnel Walkers	65.93	10	Stockton to BAQ	32
BAQ-Bethany-02 Total					
BAQ-Bethany-03	Dozer Operator	3407.07	10	Stockton to BAQ	32
BAQ-Bethany-03	Excavator Operator	3407.07	10	Stockton to BAQ	32
BAQ-Bethany-03	General Foreman	1803.74	10	Stockton to BAQ	32
BAQ-Bethany-03	General Laborer	3407.07	10	Stockton to BAQ	32
BAQ-Bethany-03	Grader Operator	1603.33	10	Stockton to BAQ	32
BAQ-Bethany-03	Mechanic / Welder	3407.07	10	Stockton to BAQ	32
BAQ-Bethany-03	Surveyor	2404.99	10	Stockton to BAQ	32
BAQ-Bethany-03 Total					
BAQ-Bethany-04	Laborer G2 General	107.33	10	Stockton to BAQ	32
BAQ-Bethany-04	Carpenter	166.67	10	Stockton to BAQ	32
BAQ-Bethany-04	Carpenter Foreman	33.33	10	Stockton to BAQ	32
BAQ-Bethany-04	Cement Mason Foreman	14	10	Stockton to BAQ	32
BAQ-Bethany-04	Cement Mason Journeyman	56	10	Stockton to BAQ	32
BAQ-Bethany-04	Concrete Pump Operator	16	10	Stockton to BAQ	32
BAQ-Bethany-04	Dozer Operator	35.71	10	Stockton to BAQ	32
BAQ-Bethany-04	General Foreman	30.22	10	Stockton to BAQ	32
BAQ-Bethany-04	General Laborer	24.97	10	Stockton to BAQ	32
BAQ-Bethany-04	Grader Operator	35.71	10	Stockton to BAQ	32
BAQ-Bethany-04	Hydraulic Excavator to 3.5	14.22	10	Stockton to BAQ	32
BAQ-Bethany-04	Iron Worker	353.57	10	Stockton to BAQ	32
BAQ-Bethany-04	Iron Worker Foreman	58.93	10	Stockton to BAQ	32
BAQ-Bethany-04	Mechanic / Welder	10.75	10	Stockton to BAQ	32
BAQ-Bethany-04	Truck Driver	64.15	10	Stockton to BAQ	32

BAQ-Bethany-04	Operator G3 BH-1 Loader	21.49	10	Stockton to BAQ	32	
BAQ-Bethany-04	Teamster G2 Hwy	64	10	Stockton to BAQ	32	
BAQ-Bethany-04	Surveyor	14.22	10	Stockton to BAQ	32	
BAQ-Bethany-04	Laborer G1 Vibrator	32	10	Stockton to BAQ	32	
BAQ-Bethany-04 Total						
BAQ-Bethany-05	Laborer G2 General	122.66	10	Stockton to BAQ	32	
BAQ-Bethany-05	Carpenter	150	10	Stockton to BAQ	32	
BAQ-Bethany-05	Carpenter Foreman	30	10	Stockton to BAQ	32	
BAQ-Bethany-05	Cement Mason Foreman	18.9	10	Stockton to BAQ	32	
BAQ-Bethany-05	Cement Mason Journeyman	75.6	10	Stockton to BAQ	32	
BAQ-Bethany-05	Concrete Pump Operator	17.98	10	Stockton to BAQ	32	
BAQ-Bethany-05	Dozer Operator	40.18	10	Stockton to BAQ	32	
BAQ-Bethany-05	General Foreman	33.98	10	Stockton to BAQ	32	
BAQ-Bethany-05	General Laborer	28.09	10	Stockton to BAQ	32	
BAQ-Bethany-05	Grader Operator	40.18	10	Stockton to BAQ	32	
BAQ-Bethany-05	Hydraulic Excavator to 3.5	16	10	Stockton to BAQ		32
BAQ-Bethany-05	Iron Worker	396.43	10	Stockton to BAQ		32
BAQ-Bethany-05	Iron Worker Foreman	66.07	10	Stockton to BAQ	32	
BAQ-Bethany-05	Mechanic / Welder	12.09	10	Stockton to BAQ	32	
BAQ-Bethany-05	Truck Driver	72.19	10	Stockton to BAQ	32	
BAQ-Bethany-05	Operator G3 BH-1 Loader	24.18	10	Stockton to BAQ	32	
BAQ-Bethany-05	Teamster G2 Hwy	71.91	10	Stockton to BAQ		32
BAQ-Bethany-05	Surveyor	16	10	Stockton to BAQ		32
BAQ-Bethany-05	Laborer G1 Vibrator	35.96	10	Stockton to BAQ	32	
BAQ-Bethany-05 Total						
BAQ-Bethany-06	Carpenter	1280	10	Stockton to BAQ	32	
BAQ-Bethany-06	Carpenter Foreman	160	10	Stockton to BAQ	32	
BAQ-Bethany-06	Dozer Operator	40	10	Stockton to BAQ	32	
BAQ-Bethany-06	General Laborer	320	10	Stockton to BAQ	32	
BAQ-Bethany-06	Grader Operator	40	10	Stockton to BAQ	32	
BAQ-Bethany-06	Mechanic / Welder	40	10	Stockton to BAQ	32	
BAQ-Bethany-06	Scraper Operator	40	10	Stockton to BAQ	32	
BAQ-Bethany-06	Compactor Operator	40	10	Stockton to BAQ		32
BAQ-Bethany-06	Operating Engineer	40	10	Stockton to BAQ		32
BAQ-Bethany-06	Operator G4 Heavy Duty Mechanic	40	10	Stockton to BAQ	32	
BAQ-Bethany-06 Total						
BAQ-Bethany-07	Lead Miner	89	10	Stockton to BAQ	32	
BAQ-Bethany-07	Miner	267	10	Stockton to BAQ	32	
BAQ-Bethany-07	Shifter	89	10	Stockton to BAQ		32
BAQ-Bethany-07	Compactor	885.26	10	Stockton to BAQ	32.0	
BAQ-Bethany-07	Dozer Push Cat	1770.52	10	Stockton to BAQ	32	
BAQ-Bethany-07	Grade Setter / Checker	885.26	10	Stockton to BAQ	32	
BAQ-Bethany-07	Grader / Blade	885.26	10	Stockton to BAQ	32	
BAQ-Bethany-07	Scraper 13 CY +	3541.05	10	Stockton to BAQ	32	
BAQ-Bethany-07	Shotcrete Pump Operator	89	10	Stockton to BAQ	32	
BAQ-Bethany-07	Water Tanker Off road	885.26	10	Stockton to BAQ	32	
BAQ-Bethany-07 Total						
BAQ-Bethany-08	Laborer G2 General	122.66	10	Stockton to BAQ	32	
BAQ-Bethany-08	Carpenter	150	10	Stockton to BAQ	32	
BAQ-Bethany-08	Carpenter Foreman	30	10	Stockton to BAQ	32	
BAQ-Bethany-08	Cement Mason Foreman	18.9	10	Stockton to BAQ		32
BAQ-Bethany-08	Cement Mason Journeyman	75.6	10	Stockton to BAQ	32	
BAQ-Bethany-08	Concrete Pump Operator	17.98	10	Stockton to BAQ	32	
BAQ-Bethany-08	Dozer Operator	40.18	10	Stockton to BAQ	32	
BAQ-Bethany-08	General Foreman	33.98	10	Stockton to BAQ	32	
BAQ-Bethany-08	General Laborer	28.09	10	Stockton to BAQ	32	
BAQ-Bethany-08	Grader Operator	40.18	10	Stockton to BAQ	32	
BAQ-Bethany-08	Hydraulic Excavator to 3.5	16	10	Stockton to BAQ	32	
BAQ-Bethany-08	Iron Worker	396.43	10	Stockton to BAQ		32
BAQ-Bethany-08	Iron Worker Foreman	66.07	10	Stockton to BAQ	32	
BAQ-Bethany-08	Mechanic / Welder	12.09	10	Stockton to BAQ	32	
BAQ-Bethany-08	Truck Driver	72.19	10	Stockton to BAQ	32	
BAQ-Bethany-08	Operator G3 BH-1 Loader	24.18	10	Stockton to BAQ	32	
BAQ-Bethany-08	Teamster G2 Hwy	71.91	10	Stockton to BAQ	32	
BAQ-Bethany-08	Surveyor	16	10	Stockton to BAQ	32	
BAQ-Bethany-08	Laborer G1 Vibrator	36	10	Stockton to BAQ	32	
BAQ-Bethany-08 Total						
BAQ-Bethany-09	Electrician	340	20	Stockton to BAQ	32	
BAQ-Bethany-09	Lead Miner	684	20	Stockton to BAQ	32	
BAQ-Bethany-09	Mechanic / Welder	680	20	Stockton to BAQ		32
BAQ-Bethany-09	Miner	3076	20	Stockton to BAQ	32	
BAQ-Bethany-09	Shifter	684	20	Stockton to BAQ	32	

BAQ-Bethany-09	CAT R1300G Operator	1368	20	Stockton to BAQ	32
BAQ-Bethany-09	Master Mechanic	340	20	Stockton to BAQ	32
BAQ-Bethany-09	Roadheader Operator	684	20	Stockton to BAQ	32
BAQ-Bethany-09 Total					
BAQ-Bethany-10	Electrician	5668	20	Stockton to BAQ	32
BAQ-Bethany-10	Lead Miner	11383.6	20	Stockton to BAQ	32
BAQ-Bethany-10	Mechanic / Welder	11336	20	Stockton to BAQ	32
BAQ-Bethany-10	Miner	51202.4	20	Stockton to BAQ	32
BAQ-Bethany-10	Shifter	11383.6	20	Stockton to BAQ	32
BAQ-Bethany-10	CAT R1300G Operator	22723.2	20	Stockton to BAQ	32
BAQ-Bethany-10	Master Mechanic	5668	20	Stockton to BAQ	32
BAQ-Bethany-10	Roadheader Operator	11383.6	20	Stockton to BAQ	32
BAQ-Bethany-10 Total					
BAQ-Bethany-11	Laborer G2 General	5488	10	Stockton to BAQ	32
BAQ-Bethany-11	Carpenter	184	10	Stockton to BAQ	32
BAQ-Bethany-11	Carpenter Foreman	184	10	Stockton to BAQ	32
BAQ-Bethany-11	Concrete Pump Operator	3222	10	Stockton to BAQ	32
BAQ-Bethany-11	Crane Oiler	9656.27	10	Stockton to BAQ	32
BAQ-Bethany-11	Electrician	5974	10	Stockton to BAQ	32
BAQ-Bethany-11	Flat Truck Driver	3081.56	10	Stockton to BAQ	32
BAQ-Bethany-11	General Foreman	11246.54	10	Stockton to BAQ	32
BAQ-Bethany-11	General Laborer	19732.54	10	Stockton to BAQ	32
BAQ-Bethany-11	Hyd Crane Operator	9954.54	10	Stockton to BAQ	32
BAQ-Bethany-11	Mechanic / Welder	9830	10	Stockton to BAQ	32
BAQ-Bethany-11	Miner	4328	10	Stockton to BAQ	32
BAQ-Bethany-11	Pipefitter Apprentice	11760	10	Stockton to BAQ	32
BAQ-Bethany-11	Pipefitter Foreman	3032	10	Stockton to BAQ	32
BAQ-Bethany-11	Pipefitter Journeyman	17640	10	Stockton to BAQ	32
BAQ-Bethany-11	Truck Driver	5728	10	Stockton to BAQ	32
BAQ-Bethany-11	Flagger	1384.54	10	Stockton to BAQ	32
BAQ-Bethany-11	Forklift Operator	3222	10	Stockton to BAQ	32
BAQ-Bethany-11	Grade Setter / Checker	1252.54	10	Stockton to BAQ	32
BAQ-Bethany-11	Operator G3 BH-1 Loader	3044	10	Stockton to BAQ	32
BAQ-Bethany-11	Welder	6360	10	Stockton to BAQ	32
BAQ-Bethany-11	Pilot Car Driver	1432	10	Stockton to BAQ	32
BAQ-Bethany-11	Welder Certified	6360	10	Stockton to BAQ	32
BAQ-Bethany-11	Boilermaker	3088	10	Stockton to BAQ	32
BAQ-Bethany-11	Concrete Finisher	9666	10	Stockton to BAQ	32
BAQ-Bethany-11	Electrician Foreman	180	10	Stockton to BAQ	32
BAQ-Bethany-11	Pipe Carrier Driver	2164	10	Stockton to BAQ	32
BAQ-Bethany-11 Total					
BAQ-Bethany-12	Concrete Pump Operator	168	10	Stockton to BAQ	32
BAQ-Bethany-12	Dozer Operator	1605.04	10	Stockton to BAQ	32
BAQ-Bethany-12	Electrician	84	10	Stockton to BAQ	32
BAQ-Bethany-12	General Foreman	84	10	Stockton to BAQ	32
BAQ-Bethany-12	General Laborer	1170.94	10	Stockton to BAQ	32
BAQ-Bethany-12	Grader Operator	1805.46	10	Stockton to BAQ	32
BAQ-Bethany-12	Mechanic / Welder	886.52	10	Stockton to BAQ	32
BAQ-Bethany-12	Truck Driver	1605.04	10	Stockton to BAQ	32
BAQ-Bethany-12	Compactor Operator	200.42	10	Stockton to BAQ	32
BAQ-Bethany-12	Grade Setter / Checker	802.52	10	Stockton to BAQ	32
BAQ-Bethany-12	Operator G3 BH-1 Loader	1605.04	10	Stockton to BAQ	32
BAQ-Bethany-12	Water Truck Highway	100.21	10	Stockton to BAQ	32
BAQ-Bethany-12	Oiler	84	10	Stockton to BAQ	32
BAQ-Bethany-12 Total					
BAQ-Bethany-13	Laborer G2 General	1584	10	Stockton to BAQ	32
BAQ-Bethany-13	General Laborer	640	10	Stockton to BAQ	32
BAQ-Bethany-13	Hyd Crane Operator	320	10	Stockton to BAQ	32
BAQ-Bethany-13 Total					
BAQ-Bethany-14	Dozer Operator	4344.32	10.0	Stockton to BAQ	32
BAQ-Bethany-14	General Foreman	1971.74	10.0	Stockton to BAQ	32
BAQ-Bethany-14	General Laborer	1971.74	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Hydraulic Excavator to 3.5	1971.74	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Mechanic / Welder	1971.74	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Truck Driver	6316.06	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Compactor Operator	400.83	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Flagger	400.83	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Grade Setter / Checker	2372.57	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Operator G3 BH-1 Loader	400.83	10.0	Stockton to BAQ	32
BAQ-Bethany-14	Water Truck Highway	200.42	10.0	Stockton to BAQ	32
BAQ-Bethany-14 Total					
BAQ-Bethany-15	Concrete Pump Operator	784	10.0	Stockton to BAQ	32

BAQ-Bethany-15	Electrician	392	10.0	Stockton to BAQ	32
BAQ-Bethany-15	General Foreman	392	10	Stockton to BAQ	32
BAQ-Bethany-15	General Laborer	784	10	Stockton to BAQ	32
BAQ-Bethany-15	Mechanic / Welder	392	10	Stockton to BAQ	32
BAQ-Bethany-15	Oiler	392	10	Stockton to BAQ	32
BAQ-Bethany-15 Total					
BAQ-Bethany-16	Concrete Pump Operator	1610.12	10	Stockton to BAQ	32
BAQ-Bethany-16	Electrician	805.06	10	Stockton to BAQ	32
BAQ-Bethany-16	General Foreman	805.06	10	Stockton to BAQ	32
BAQ-Bethany-16	General Laborer	1610.12	10	Stockton to BAQ	32
BAQ-Bethany-16	Mechanic / Welder	805.06	10	Stockton to BAQ	32
BAQ-Bethany-16	Oiler	805.06	10	Stockton to BAQ	32
BAQ-Bethany-16 Total					
BAQ-Bethany-17	Dozer Operator	50.11	10	Stockton to BAQ	32
BAQ-Bethany-17	Compactor Operator	50.11	10	Stockton to BAQ	32
BAQ-Bethany-17	Grade Setter / Checker	50.11	10	Stockton to BAQ	32
BAQ-Bethany-17	Operator G3 BH-1 Loader	50.11	10	Stockton to BAQ	32
BAQ-Bethany-17	Water Truck Highway	50.11	10	Stockton to BAQ	32
BAQ-Bethany-17 Total					
BAQ-Bethany-18	Flat Truck Driver	80	10	Stockton to BAQ	32
BAQ-Bethany-18	General Foreman	80	10	Stockton to BAQ	32
BAQ-Bethany-18	General Laborer	160	10	Stockton to BAQ	32
BAQ-Bethany-18	Hyd Crane Operator	80	10	Stockton to BAQ	32
BAQ-Bethany-18	Mechanic / Welder	80	10	Stockton to BAQ	32

Marine Inventory for Bethany Aqueduct  
Option B2

Code	Dock Site	# of Vessels/Day	Engine Tier	Propulsion Engine (hours/day)	Auxiliary Engine (hours/day)	Propulsion Engine Horsepower	Auxiliary Engine Horsepower	Fuel Type	Fuel (gal/day) (if known)
------	-----------	---------------------	-------------	----------------------------------	---------------------------------	---------------------------------	--------------------------------	-----------	------------------------------

NOT NEEDED

Locomotive Inventory for Bethany Aqueduct  
Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine Horsepower	Operating Hours/Day	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if known)
------	-----------------	------------	-------------	----------------------	------------------------	----------------	-----------	------------------------------

NOT NEEDED



**Helicopter Inventory for Bethany Aqueduct  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover Hours per Day	Fuel (gal/day) (if known)
------	-----------------	-----------	-------------	-------------------------------	------------------------------

NOT NEEDED

Earthmoving/Paving Assumptions for Bethany Aqueduct  
Option B2

Code	Stripping or Grading (acres)	# day	Stripping or Grading (acres/day)	Cut (cy)	Cut (cy/day)	Fill (cy)	Fill (cy/day)	Dredge (cy)	Dredge (cy/day) Intake & Spillway, Only	Paving (sf)	Paving (sf/day)
BAQ-Bethany-03	81	132	1	0	0	0	0	0	0	0	0
BAQ-Bethany-04	0	19	0	2370	125	2015	106	0	0	0	0
BAQ-Bethany-05	0	20	0	2667	133	2267	113	0	0	0	0
BAQ-Bethany-07	0	28	0	523898	18711	0	0	0	0	0	0
BAQ-Bethany-08	0	21	0	2667	127	2267	108	0	0	0	0
BAQ-Bethany-09	0	37	0	9308	252	0	0	0	0	0	0
BAQ-Bethany-10	0	593	0	142605	240	0	0	0	0	0	0
BAQ-Bethany-12	0	481	0	0	0	552984	1150	0	0	0	0
BAQ-Bethany-14	0	289	0	605026	2094	0	0	0	0	0	0
BAQ-Bethany-15	0	151	0	0	0	6528	43	0	0	0	0
BAQ-Bethany-16	0	341	0	0	0	551144	1616	0	0	0	0

**Demolition Assumptions for Bethany Aqueduct  
Option B2**

Code	# of Structures Demolished	# day	Demolition per day (sf)
------	-------------------------------	-------	-------------------------

NOT NEEDED

**Construction Schedule for Bethany Reservoir Discharge Structure  
Option B2**

**NOTE: COLUMNS WITH TITLE BLOCK HIGHLIGHTED IN YELLOW ARE REQUESTED BY ICF. OTHER COLUMNS PROVIDE DATA USED TO CALCULATE THE REQUESTED INFORMATION**

Phase	Code	Start Date	End Date	Working Days	Days/Week	Work Hours/Day
02 - Mobilization Shaft site - Bethany shafts	BR-Bethany-01	10/22/2030	11/12/2030	16	5	10
01 - Contractor Site Management & Facilities - Bethany shafts	BR-Bethany-02	10/22/2030	10/12/2035	1299	5	10
03 - Outlet Cofferdam	BR-Bethany-03	11/13/2030	2/18/2031	70	5	10
04 - Dewater Cofferdam	BR-Bethany-04	2/19/2031	3/12/2031	16	5	10
05 - Shafts-Outlet Excavation	BR-Bethany-05	3/13/2031	4/29/2031	34	5	10
06 - Shaft Excavation	BR-Bethany-06	4/29/2031	8/5/2032	333	5	10
08 - Fit Pipe in Shafts	BR-Bethany-07	9/27/2033	10/19/2033	17	5	10
07 - Mobilize shaft pipe fitting	BR-Bethany-08	9/27/2033	9/30/2033	4	4	10
09 - Backfill Pipes in Bethany outlet Shafts	BR-Bethany-09	5/19/2034	5/24/2034	4	4	10
10 - Mobilization Outlet structure	BR-Bethany-10	5/24/2034	6/15/2034	17	5	10
12 - Outlet structure	BR-Bethany-11	6/15/2034	10/12/2035	347	5	10
11 - Site setup	BR-Bethany-12	6/15/2034	8/16/2034	45	5	10
14 - Backfill Outlet Structue	BR-Bethany-13	9/10/2035	10/24/2035	33	5	10
13 - Bridge Work	BR-Bethany-14	9/10/2035	10/12/2035	25	5	10
<b>Total Area</b>	<b>15 acres</b>					

Offroad Equipment (Fossil Fuel) Inventory for Bethany Reservoir Discharge Structure  
Option B2

Code	Equipment Name	General Equipment Category	Hours	# day	Hours/day/ equipment	Fuel Type	Engine Horsepower (if known)	Load Factor	Fuel Efficiency (gal/day)	Fuel (gal/day) (if known)
BR-Bethany-01	250 CFM Compressor Diesel	Air Compressor	160	16	10	Diesel - Tier 3	75	0.48		
BR-Bethany-01	Hydraulic 9 Ton Crane	Crane	160	16	10	Diesel	85	0.29		
BR-Bethany-01	Telescope RT Forklift 5500	Forklifts	160	16	10	Diesel	63	0.2		
BR-Bethany-01	CAT 906 Loader 1 CY	Rubber Tired Loaders	160	16	10	Diesel	75	0.37		
BR-Bethany-02	Concrete Pump Truck	Off-Highway Truck	2	1299	0.001539646	Diesel	300	0.38		
BR-Bethany-02	Tower Crane	Crane	2	1299	0	Electric	0	0.29		
BR-Bethany-03	250 CFM Compressor Diesel	Air Compressor	80	70	1	Diesel - Tier 3	75	0.48		
BR-Bethany-03	250 CFM Compressor Diesel	Air Compressor	300	70	4	Diesel - Tier 3	75	0.48		
BR-Bethany-03	250 CFM Compressor Diesel	Air Compressor	700	70	10	Diesel - Tier 3	75	0.48		
BR-Bethany-03	Portable 90 Kw Diesel Gen	Generator	80	70	1	Diesel - Tier 4	158	0.74		
BR-Bethany-03	Portable 90 Kw Diesel Gen	Generator	300	70	4	Diesel - Tier 4	158	0.74		
BR-Bethany-03	Portable 90 Kw Diesel Gen	Generator	700	70	10	Diesel - Tier 4	158	0.74		
								0.45		
BR-Bethany-03	Telescope RT Forklift 5500	Forklifts	80	70	1	Diesel	63	0.2		
BR-Bethany-03	Telescope RT Forklift 5500	Forklifts	300	70	4	Diesel	63	0.2		
BR-Bethany-03	Hydraulic Crane 9 Ton	Crane	700	70	10	Diesel	85	0.29		
BR-Bethany-03	Hydraulic 40 Ton Crane	Crane	80	70	1	Diesel	300	0.29		
BR-Bethany-03	Hydraulic 40 Ton Crane	Crane	300	70	4	Diesel	300	0.29		
BR-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	80	70	1	Diesel	760	0.29		
BR-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	300	70	4	Diesel	760	0.29		
BR-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	600	70	9	Diesel	760	0.29		
BR-Bethany-03	Manitowoc 777 200 Ton Crane	Crane	700	70	10	Diesel	760	0.29		
								0.5		
								0.56		
BR-Bethany-04	150 KW Diesel Generator	Generator	160	16	10	Diesel - Tier 4	183	0.74		
BR-Bethany-04	Hydraulic 9 Ton Crane	Crane	160	16	10	Diesel	85	0.29		
BR-Bethany-04	Dewater Pump 6"	Pumps	1280	16	80	Diesel	50	0.74		
BR-Bethany-05	CAT 825H Compactor	Rollers	333	34	10	Diesel	401	0.38		
BR-Bethany-05	621G 44 CY	Scaper	666	34	20	Diesel	330	0.48		
BR-Bethany-05	631G 33 CY	Scaper	666	34	20	Diesel	515	0.48		
BR-Bethany-06	250 CFM Compressor Diesel	Air Compressor	268.55	333	1	Diesel - Tier 3	75	0.48		
BR-Bethany-06	CAT Forklift 5,500 LB	Aerial Lifts	160	333	0	Diesel	63	0.31		
BR-Bethany-06	Hydraulic 9 Ton Crane	Crane	160	333	0.5	Diesel	85	0.29		
BR-Bethany-06	Trailer Shotcrete Pump 45 CY	Pumps	268.55	333	0.8	Diesel	225	0.74		
BR-Bethany-06	AC 4" Hydraulic Track Drill	Bore/Drill Rigs	65.5	333	0.2	Diesel	37	0.5		
BR-Bethany-06	CAT Hyd Excavator 2 CY	Excavator	386.45	333	1	Diesel	300	0.38		
BR-Bethany-06	Hydraulic 40 Ton Crane	Crane	160	333	0	Diesel	300	0.29		
BR-Bethany-06	Manitowoc 777 200 Ton Crane	Crane	655	333	2	Diesel	760	0.29		
BR-Bethany-07	150 KW Diesel Generator	Generator	384	17	23	Diesel - Tier 4	183	0.74		
BR-Bethany-08	Manitowoc 999-275 Ton Crane	Crane	48	4	12	Diesel	900	0.29		
BR-Bethany-09	250 CFM Compressor Diesel	Air Compressor	108	4	27	Diesel - Tier 3	75	0.48		
BR-Bethany-09	Grout Mixer	Cement & Mortar Mix	108	4	27	Diesel	70	0.56		
BR-Bethany-09	Grout Pump	Cement & Mortar Mix	108	4	27	Diesel	500	0.56		
BR-Bethany-10	250 CFM Compressor Diesel	Air Compressor	160	17	9	Diesel - Tier 3	75	0.48		
BR-Bethany-10	Hydraulic 9 Ton Crane	Crane	160	17	9	Diesel	85	0.29		
BR-Bethany-10	Telescope RT Forklift 5500	Forklifts	160	17	9	Diesel	63	0.2		
BR-Bethany-10	CAT 906 Loader 1 CY	Rubber Tired Loaders	160	17	9	Diesel	75	0.37		
BR-Bethany-11	CAT 950 Loader 4.5 CY	Rubber Tired Loaders	18	347	0	Diesel or Hybrid	130	0.36		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	53.75	347	0	Diesel	300	0.38		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	1974	347	6	Diesel	300	0.38		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	1182	347	3	Diesel	300	0.38		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	458	347	1	Diesel	300	0.38		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	62.15	347	0	Diesel	300	0.38		
BR-Bethany-11	Concrete Pump Truck	Off-Highway Truck	24.48	347	0	Diesel	300	0.38		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	1974	347	6	Diesel	85	0.29		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	71.25	347	0	Diesel	85	0.29		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	1182	347	3	Diesel	85	0.29		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	458	347	1	Diesel	85	0.29		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	40.68	347	0	Diesel	85	0.29		
BR-Bethany-11	Hydraulic 9 Ton Crane	Crane	11.52	347	0.033198847	Diesel	85	0.29		
BR-Bethany-11	CAT Grader 12H	Grader	180	347	1	Diesel	173	0.41		
BR-Bethany-11	CAT 906 Loader 1 CY	Rubber Tired Loaders	180	347	1	Diesel	75	0.37		
BR-Bethany-11	CAT D7 Dozer	Crawler Tractor	180	347	1	Diesel	265	0.43		
BR-Bethany-11	CAT Hyd Excavator 1CY	Excavator	180	347	0.518731988	Diesel	138	0.38		
BR-Bethany-11	CAT Hyd Excavator 1CY	Excavator	18	347	0.051873199	Diesel	138	0.38		
BR-Bethany-12	250 CFM Compressor Diesel	Air Compressor	160	45	3.555555556	Diesel - Tier 3	75	0.48		
BR-Bethany-12	CAT D8 Dozer	Crawler Tractor	124	45	2.755555556	Diesel	328	0.43		
BR-Bethany-12	CAT Forklift 5,500 LB	Aerial Lifts	160	45	3.555555556	Diesel	63	0.31		
BR-Bethany-12	Hydraulic 9 Ton Crane	Crane	160	45	3.555555556	Diesel	85	0.29		
BR-Bethany-12	CAT Grader 16H	Grader	124	45	2.755555556	Diesel	285	0.41		
BR-Bethany-12	Telescope RT Forklift 5500	Forklifts	160	45	3.555555556	Diesel	63	0.2		
BR-Bethany-12	CAT CB-634D Vibratory 84"	Rollers	124	45	2.755555556	Diesel	145	0.38		
BR-Bethany-12	Hydraulic 40 Ton Crane	Crane	160	45	3.555555556	Diesel	300	0.29		
BR-Bethany-12	Manitowoc 555 - 150 Ton	Crane	160	45	3.555555556	Diesel	340	0.29		
BR-Bethany-13	CAT D8 Dozer	Crawler Tractor	315	33	9.545454545	Diesel	328	0.43		
BR-Bethany-13	CAT Grader 16H	Grader	315	33	9.545454545	Diesel	285	0.41		
BR-Bethany-13	CAT CB-634D Vibratory 84"	Rollers	315	33	9.545454545	Diesel	145	0.38		
BR-Bethany-14	Concrete Pump Truck	Off-Highway Truck	468	25	18.72	Diesel	300	0.38		
BR-Bethany-14	Hydraulic 9 Ton Crane	Crane	468	25	18.72	Diesel	85	0.29		

Offroad Equipment (Electric) Inventory for Bethany Reservoir Discharge Structure  
Option B2

Code	Equipment Name	Hours	# day	kW	kWh/day / equipment
BR-Bethany-03	Electric Welder, 400 Amp	1400	70		
BR-Bethany-07	Electric Welder, 400 Amp	384	17		

Vehicle Inventory for Bethany Reservoir Discharge Structure  
Option B2

Code	Vehicle	Primary Trip Purpose/Location (within construction footprint vs. offsite)	# day	Vehicle Hours	Hours/Trip	# of Vehicles trip	One-Way Trips/Day	Trip Location (to/from)	Miles per One-Way Trip	Miles per Trip	Fuel Type	Fuel Efficiency (gal/day) (if known)
Vehicle Use on Paved Roads --- and Not on Construction Site												
BR-Bethany-01	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	16	1	1.1	1	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-02	Water Truck 4000 gal	Water from Lodi	1299	0	1.1	0	0	Bethany Reservoir from Lodi	32	64	Diesel	
BR-Bethany-03	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	70	4	1.1	4	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-03	40 Ton Tractor & Trailer	Steel from Tracy	70	13	0.3	40	0.6	Bethany Reservoir from Tracy	10	20	Diesel	
BR-Bethany-03	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	70	1	0.1	11	0	Bethany Reservoir from Bethany Complex Batch Plant	2	4	Diesel	
BR-Bethany-04	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	16	2	1.1	2	0.1	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-06	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	333	209	1.1	196	0.6	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-06	40 Ton Tractor & Trailer	Rebar from Livermore	333	18	0.6	32	0.1	Bethany Reservoir from Livermore	17	34	Diesel	
BR-Bethany-06	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	333	19.2	0.1	288	1	Bethany Reservoir from Bethany Complex Batch Plant	2	4	Diesel	
BR-Bethany-06	Pickup, 1/2T	General Materials from Stockton	333	8.53333333	1.1	8	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-07	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	17	27.73333333	1.1	26	2	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-07	40 Ton Tractor & Trailer	General Materials from Stockton	17	9	1.1	8	0.5	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-07	40 Ton Tractor & Trailer	Steel from Tracy	17	3	0.3	8	0	Bethany Reservoir from Stockton	10	20	Diesel	
BR-Bethany-08	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	4	1	1.1	1	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-09	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	4	1.06666667	1.1	1	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-09	Concrete Transit Mix Truck 12cy	Concrete CLSM from Bethany Aqueduct Plug Mill	4	316	0.1	4746	1187	Bethany Reservoir from Bethany Aqueduct Plug Mill	2	4	Diesel	
BR-Bethany-11	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	347	34	1.1	32	0.1	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-11	20 Ton Flatbed Truck/End Dump	Rip Rap from Vernalis	347	208	0.7	297	0.9	Bethany Reservoir from Vernalis	21	42	Diesel	
BR-Bethany-11	40 Ton Tractor & Trailer	General Materials from Stockton	347	2	1.1	2	0.0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-11	40 Ton Tractor & Trailer	Rebar from Livermore	347	19	0.6	33	0.1	Bethany Reservoir from Livermore	17	34	Diesel	
BR-Bethany-11	40 Ton Tractor & Trailer	Steel from Tracy	347	3	0.3	9	0	Bethany Reservoir from Tracy	10	20	Diesel	
BR-Bethany-11	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	347	174.1	0.1	2611	8	Bethany Reservoir from Bethany Complex Batch Plant	2	4	Diesel	
BR-Bethany-14	20 Ton Flatbed Truck/End Dump	General Materials from Stockton	25	1.1	1.1	1	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-14	40 Ton Tractor & Trailer	General Materials from Stockton	25	2	1.1	2	0	Bethany Reservoir from Stockton	32	64	Diesel	
BR-Bethany-14	Concrete Transit Mix Truck 12cy	Concrete from Bethany Complex Batch Plant	25	7	0.1	107	4.3	Bethany Reservoir from Bethany Complex Batch Plant	2	4	Diesel	
Vehicle Use on Unpaved/Dirt Surface (no access roads at park and ride lots) --- on the Construction Site												
BR-Bethany-01	Highway Flatbed 10 Ton	Off-Highway Truck	16	160	not applicable	not applicable	not applicable	in-site: assume 5 miles/hour	not applicable	800	Diesel	
BR-Bethany-01	Truck Flatbed 4 Ton	Off-Highway Truck	16	160	not applicable	not applicable	not applicable	in-site: assume 5 miles/hour	not applicable	800	Diesel	
BR-Bethany-03	Mechanic Maintenance Truck	Off-Highway Truck	70	380	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	1900	Diesel	
BR-Bethany-06	Highway Flatbed 10 Ton	Off-Highway Truck	333	160	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	800	Diesel	
BR-Bethany-07	Highway Flatbed 10 Ton	Off-Highway Truck	17	16	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	80	Diesel	
BR-Bethany-10	Highway Flatbed 10 Ton	Off-Highway Truck	17	160	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	800	Diesel	
BR-Bethany-10	Truck Flatbed 4 Ton	Off-Highway Truck	17	160	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	800	Diesel	
BR-Bethany-12	Highway Flatbed 10 Ton	Off-Highway Truck	45	320	not applicable	not applicable	not applicable	on-site: assume 5 miles/hour	not applicable	1600	Diesel	
BR-Bethany-12	Truck Flatbed 4 Ton	Off-Highway Truck	45	160	not applicable	not applicable	not applicable	in-site: assume 5 miles/hour	not applicable	800	Diesel	

Employees Required to Bethany Reservoir Discharge Structure  
Option B2

Code	Employee Type	Hours	# WorkDay	Trip Location (to/from)	Commute Miles/ One-way Trip/Day
BR-Bethany-01	Carpenter Foreman	160	10	Stockton to BR	32
BR-Bethany-01	Carpenter	640	10	Stockton to BR	32
BR-Bethany-01	Flat Truck Driver	320	10	Stockton to BR	32
BR-Bethany-01	General Laborer	320	10	Stockton to BR	32
BR-Bethany-01	Hyd Crane Operator	160	10	Stockton to BR	32
BR-Bethany-01	Lead Miner	160	10	Stockton to BR	32
BR-Bethany-01	Miner	480	10	Stockton to BR	32
BR-Bethany-01	Shifter	160	10	Stockton to BR	32
BR-Bethany-01	Forklift Operator	160	10	Stockton to BR	32
BR-Bethany-01 Total					
BR-Bethany-02	Accountant	12	10	Stockton to BR	32
BR-Bethany-02	Concrete Superintendent	24	10	Stockton to BR	32
BR-Bethany-02	Cost Engineer	12	10	Stockton to BR	32
BR-Bethany-02	Electrical Superintendent	12	10	Stockton to BR	32
BR-Bethany-02	Environmental Manager	12	10	Stockton to BR	32
BR-Bethany-02	Equipment Superintendent	12	10	Stockton to BR	32
BR-Bethany-02	Field Engineer	24	10	Stockton to BR	32
BR-Bethany-02	General Superintendent	24	10	Stockton to BR	32
BR-Bethany-02	Geotechnical Manager	12	10	Stockton to BR	32
BR-Bethany-02	Office Manager	24	10	Stockton to BR	32
BR-Bethany-02	Payroll Clerk	24	10	Stockton to BR	32
BR-Bethany-02	Project Engineer	24	10	Stockton to BR	32
BR-Bethany-02	Project Manager	24	10	Stockton to BR	32
BR-Bethany-02	Purchasing Agent	24	10	Stockton to BR	32
BR-Bethany-02	QC Manager	12	10	Stockton to BR	32
BR-Bethany-02	QC Technician	12	10	Stockton to BR	32
BR-Bethany-02	Runner	24	10	Stockton to BR	32
BR-Bethany-02	Safety Engineer	24	10	Stockton to BR	32
BR-Bethany-02	Safety Manager	24	10	Stockton to BR	32
BR-Bethany-02	Schedule Engineer	12	10	Stockton to BR	32
BR-Bethany-02	Shift Engineers	24	10	Stockton to BR	32
BR-Bethany-02	Survey Party Chief	24	10	Stockton to BR	32
BR-Bethany-02	Survey Rod Man	24	10	Stockton to BR	32
BR-Bethany-02 Total					
BR-Bethany-03	Crane Oiler	1680	10	Stockton to BR	128
BR-Bethany-03	Electrician	380	10	Stockton to BR	64
BR-Bethany-03	Hyd Crane Operator	1080	10	Stockton to BR	96
BR-Bethany-03	Welder	2300	10	Stockton to BR	96
BR-Bethany-03	Crane Operator 100 Ton +	1680	10	Stockton to BR	128
BR-Bethany-03	Foreman Operator	1680	10	Stockton to BR	128
BR-Bethany-03	Heavy Duty Mechanic Welder	1600	10	Stockton to BR	96
BR-Bethany-03	Pile Driver	3900	10	Stockton to BR	64
BR-Bethany-03	Pile Driver Foreman	1300	10	Stockton to BR	64
BR-Bethany-03	Shaft Crane Operator	380	10	Stockton to BR	64
BR-Bethany-03 Total					
BR-Bethany-04	Electrician	160	10	Stockton to BR	32
BR-Bethany-04	Hyd Crane Operator	160	10	Stockton to BR	32
BR-Bethany-04	Mechanic Welder	160	10	Stockton to BR	32
BR-Bethany-04	Water Pump Operator	640	10	Stockton to BR	32
BR-Bethany-04 Total					
BR-Bethany-05	Grade Setter / Checker	333	10	Stockton to BR	32
BR-Bethany-05	Compactor	333	10	Stockton to BR	32
BR-Bethany-05	Scraper 13 CY +	1332	10	Stockton to BR	32
BR-Bethany-05	Water Tanker Off road	333	10	Stockton to BR	32
BR-Bethany-05 Total					
BR-Bethany-06	Crane Oiler	2620	10	Stockton to BR	128
BR-Bethany-06	Excavator Operator	2620	10	Stockton to BR	128
BR-Bethany-06	Flat Truck Driver	160	10	Stockton to BR	32
BR-Bethany-06	Hyd Crane Operator	320	10	Stockton to BR	32
BR-Bethany-06	Lead Miner	2620	10	Stockton to BR	128
BR-Bethany-06	Mechanic / Welder	160	10	Stockton to BR	32
BR-Bethany-06	Shifter	2620	10	Stockton to BR	128
BR-Bethany-06	Shotcrete Pump Operator	2620	10	Stockton to BR	128



BR-Bethany-06	Bottomlander	2620	10	Stockton to BR	128	
BR-Bethany-06	Bullgang Foreman	160	10	Stockton to BR	32	
BR-Bethany-06	Bullgang Laborer	320	10	Stockton to BR	32	
BR-Bethany-06	Mechanic Welder	2620	10	Stockton to BR	128	
BR-Bethany-06	Shaft Crane Operator	2620	10	Stockton to BR	128	
BR-Bethany-06	Toplander	2620	10	Stockton to BR	128	
BR-Bethany-06 Total						
BR-Bethany-07	Laborer G2 General	384	10	Stockton to BR	32	
BR-Bethany-07	Electrician	256	10	Stockton to BR	64	
BR-Bethany-07	Flat Truck Driver	16	10	Stockton to BR	32	
BR-Bethany-07	General Foreman	256	10	Stockton to BR	64	
BR-Bethany-07	Mechanic / Welder	64	10	Stockton to BR	32	
BR-Bethany-07	Miner	512	10	Stockton to BR	64	
BR-Bethany-07	Flagger	64	10	Stockton to BR	32	
BR-Bethany-07	Pipefitter Apprentice	256	10	Stockton to BR	32	
BR-Bethany-07	Pipefitter Foreman	64	10	Stockton to BR		32
BR-Bethany-07	Pipefitter Journeyman	384	10	Stockton to BR		32
BR-Bethany-07	Welder	384	10	Stockton to BR	32	
BR-Bethany-07	Welder Certified	384	10	Stockton to BR	32	
BR-Bethany-07	Pipe Carrier Driver	256	10	Stockton to BR	64	
BR-Bethany-07 Total						
BR-Bethany-08	Crane Oiler	48	10	Stockton to BR		32
BR-Bethany-08	Electrician	48	10	Stockton to BR		32
BR-Bethany-08	General Foreman	48	10	Stockton to BR	32	
BR-Bethany-08	General Laborer	96	10	Stockton to BR	32	
BR-Bethany-08	Hyd Crane Operator	48	10	Stockton to BR	32	
BR-Bethany-08	Mechanic / Welder	48	10	Stockton to BR	32	
BR-Bethany-08	Miner	96	10	Stockton to BR	32	
BR-Bethany-08	Boilermaker	48	10	Stockton to BR	32	
BR-Bethany-08	Pipe Carrier Driver	48	10	Stockton to BR	32	
BR-Bethany-08 Total						
BR-Bethany-09	Concrete Pump Operator	108	10	Stockton to BR	32	
BR-Bethany-09	Electrician	54	10	Stockton to BR		32
BR-Bethany-09	General Foreman	54	10	Stockton to BR		32
BR-Bethany-09	General Laborer	108	10	Stockton to BR	32	
BR-Bethany-09	Mechanic / Welder	54	10	Stockton to BR	32	
BR-Bethany-09	Miner	108	10	Stockton to BR	32	
BR-Bethany-09	Water Truck Highway	54	10	Stockton to BR	32	
BR-Bethany-09	Oiler	54	10	Stockton to BR		32
BR-Bethany-09 Total						
BR-Bethany-10	Carpenter Foreman	160	10	Stockton to BR	32	
BR-Bethany-10	Carpenter	640	10	Stockton to BR	32	
BR-Bethany-10	Flat Truck Driver	320	10	Stockton to BR	32	
BR-Bethany-10	General Laborer	320	10	Stockton to BR	32	
BR-Bethany-10	Hyd Crane Operator	160	10	Stockton to BR	32	
BR-Bethany-10	Lead Miner	160	10	Stockton to BR	32	
BR-Bethany-10	Miner	480	10	Stockton to BR	32	
BR-Bethany-10	Shifter	160	10	Stockton to BR	32	
BR-Bethany-10	Forklift Operator	160	10	Stockton to BR	32	
BR-Bethany-10 Total						
BR-Bethany-11	Carpenter Foreman	2081	10	Stockton to BR		192
BR-Bethany-11	Carpenter	12700	10	Stockton to BR	192	
BR-Bethany-11	Dozer Operator	180	10	Stockton to BR	32	
BR-Bethany-11	Excavator Operator	198	10	Stockton to BR	64	
BR-Bethany-11	General Foreman	198	10	Stockton to BR	64	
BR-Bethany-11	General Laborer	5972	10	Stockton to BR	320	
BR-Bethany-11	Grader Operator	180	10	Stockton to BR	32	
BR-Bethany-11	Hyd Crane Operator	3888	10	Stockton to BR	192	
BR-Bethany-11	Iron Worker	13960	10	Stockton to BR		64
BR-Bethany-11	Iron Worker Foreman	1396	10	Stockton to BR	64	
BR-Bethany-11	Compactor Operator	180	10	Stockton to BR	32	
BR-Bethany-11	Concrete Pump Truck Operator	4162	10	Stockton to BR	192	
BR-Bethany-11	Loader Operator	198	10	Stockton to BR	64	
BR-Bethany-11 Total						
BR-Bethany-12	Carpenter Foreman	160	10	Stockton to BR	32	
BR-Bethany-12	Carpenter	640	10	Stockton to BR	32	
BR-Bethany-12	Crane Oiler	160	10	Stockton to BR	32	
BR-Bethany-12	Electrician	160	10	Stockton to BR	32	
BR-Bethany-12	Flat Truck Driver	480	10	Stockton to BR	64	
BR-Bethany-12	General Laborer	320	10	Stockton to BR		32
BR-Bethany-12	Hyd Crane Operator	480	10	Stockton to BR	64	
BR-Bethany-12	Iron Worker	640	10	Stockton to BR	32	

BR-Bethany-12	Iron Worker Foreman	160	10	Stockton to BR	32	
BR-Bethany-12	Mechanic / Welder	160	10	Stockton to BR	32	
BR-Bethany-12	Grade Setter / Checker	124	10	Stockton to BR	32	
BR-Bethany-12	Water Truck Highway	124	10	Stockton to BR	32	
BR-Bethany-12	Forklift Operator	160	10	Stockton to BR		32
BR-Bethany-12	Grader / Blade	124	10	Stockton to BR		32
BR-Bethany-12	Bullgang Foreman	160	10	Stockton to BR	32	
BR-Bethany-12	Bullgang Laborer	320	10	Stockton to BR	32	
BR-Bethany-12	Crane Operator 100 Ton +	160	10	Stockton to BR	32	
BR-Bethany-12	Mechanic Welder	160	10	Stockton to BR	32	
BR-Bethany-12	Roller Operator	124	10	Stockton to BR	32	
BR-Bethany-12 Total						
BR-Bethany-13	Grade Setter / Checker	315	10	Stockton to BR	32	
BR-Bethany-13	Water Truck Highway	315	10	Stockton to BR		32
BR-Bethany-13	Grader / Blade	315	10	Stockton to BR	32	
BR-Bethany-13	Roller Operator	315	10	Stockton to BR	32	
BR-Bethany-13 Total						
BR-Bethany-14	Carpenter Foreman	234	10	Stockton to BR	32	
BR-Bethany-14	Carpenter	1872	10	Stockton to BR	32	
BR-Bethany-14	General Laborer	468	10	Stockton to BR	32	
BR-Bethany-14	Hyd Crane Operator	468	10	Stockton to BR		32
BR-Bethany-14	Concrete Pump Truck Operator	468	10	Stockton to BR	32	

Marine Inventory for Bethany Reservoir Discharge Structure  
Option B2

Code	Dock Site	# of Vessels/Day	Engine Tier	Propulsion Engine (hours/day)	Auxiliary Engine (hours/day)	Propulsion Engine Horsepower	Auxiliary Engine Horsepower	Fuel Type	Fuel (gal/day) (if known)
------	-----------	---------------------	-------------	----------------------------------	---------------------------------	---------------------------------	--------------------------------	-----------	------------------------------

NOT NEEDED

Locomotive Inventory for Bethany Reservoir Discharge Structure  
Option B2

Code	Locomotive Type	Depot Site	Engine Tier	Engine Horsepower	Operating Hours/Day	Idle Hours/Day	Miles/Day	Fuel (gal/day) (if known)
------	-----------------	------------	-------------	----------------------	------------------------	----------------	-----------	------------------------------

NOT NEEDED

**Helicopter Inventory for Bethany Reservoir Discharge Structure  
Option B2**

Code	Helicopter Type	Fuel Type	LTO per day	Cruise/Hover Hours per Day	Fuel (gal/day) (if known)
------	-----------------	-----------	-------------	-------------------------------	------------------------------

NOT NEEDED

Earthmov  
Option B2

[illegible]

**Demolition Assumptions for Bethany Reservoir Discharge Structure  
Option B2**

Code	# of Structures Demolished	# day	Demolition per day (sf)
------	-------------------------------	-------	-------------------------

NOT NEEDED

## **APPENDIX E – ATTACHMENT 2**

### **Stockpile Information, Concrete Batch Production, and Power Demands for Bethany Reservoir Alternative**

FINAL DRAFT



## Input Template for Material Moved Via Conveyors

Conveyance of RTM at Launch Shaft and Southern Complex

*Emissions per day = pounds per CY per transfer \* # transfers \* CY handled per day*

Options	Code	Feature Category	Feature	Start Date	End Date	Working Days	RTM Moved Via Conveyor (cy/day)	Number of transfer points where RTM "drops" between elevations (and therefore, creates dust)
Option B2	Twin Cities - Tunnelling Reach 1	Shafts	Twin Cities	11/6/2030	5/8/2036	1853	2,440	4
Option B2	Twin Cities - Tunnelling Reach 2	Shafts	Twin Cities	6/6/2030	12/4/2036	2064	2,440	4
Option B2	LRI-Bethany: Tunneling Reach 3	Shafts	Lower Roberts	4/16/2031	2/11/2036	1259	2,440	4
Option B2	LRI-Bethany: Tunneling Reach 4	Shafts	Lower Roberts	10/2/2030	8/17/2037	1794	2,440	4

**Input Template for Material Put into Trucks or Rail Cars for Transport - including on-site**

Truck/Rail Car Loading

*Emissions per day = pounds per CY loaded \* CY loaded per day*

Option	Code	Feature Category	Feature	Start Date	End Date	Working Days	RTM Loaded in Truck/Rail Car (cy/day)
Option B2	Twin Cities - Tunnelling Reach 1	Shafts	Twin Cities	11/6/2030	1/8/2035	1089	0
Option B2	Twin Cities - Tunnelling Reach 2	Shafts	Twin Cities	1/14/2030	5/8/2036	1649	0
Option B2	LRI-Bethany: Tunneling Reach 3	Shafts	Lower Roberts	4/16/2031	2/11/2036	1259	0
Option B2	LRI-Bethany: Tunneling Reach 4	Shafts	Lower Roberts	10/2/2030	8/17/2037	1794	0
Option B2	Bethany Complex	Aqueduct	Bethany Complex	8/10/2028	5/29/2035	1774	1621

Dust Emissions from RTM Stockpiles

Stockpile Location	Stockpile Location	County	MAX Pile Size (acres)	MAX Pile Height (feet)	Days per year the stockpile is actively used														Max Pile Acres by Year (if less than Site Max)														Max Pile Height (ft) by Year (if less than Site Max)													
					2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039						
Option B2	Twin Cities Complex - North	Sacramento	196	6.7	0	0	40	256	257	255	255	6	0	0	0	0	0	0	196	196	196	196	196	196	0	0	0	0	0	0	0.4	2.0	3.6	5.2	6.7	6.7	6.7	0.0	0.0	0.0						
Option B2	Twin Cities Complex - South	Sacramento	196	15.0	0	0	252	256	257	255	255	256	93	0	0	0	0	0	0	196	196	196	196	196	196	214	0	0	0	0	1.6	3.3	4.9	6.5	8.2	9.8	8.8	15.0	0.0	0.0						
Option B2	Lower Roberts Island - North	San Joaquin	196	7.3	0	0	0	186	257	255	255	256	30	0	0	0	0	0	0	0	196	196	196	196	196	0	0	0	0	0	0	1	2	4	6	7	7	0	0	0						
Option B2	Lower Roberts Island - South	San Joaquin	196	11.1	0	0	65	256	257	255	255	256	257	163	0	0	0	0	0	0	196	196	196	196	196	196	196	0	0	0	0	0	0	1	3	5	7	8	10	11	0	0				
Option B2	Bethany Complex	San Joaquin	59	31.7	102	256	256	256	257	255	255	107	0	0	0	0	59	59	59	59	59	59	59	59	0	0	0	0	0.4	2	3	12	20	31	31	32	0	0	0	0						

		TBM Start	TBM Finish	1/1/2028	1/1/2029	1/1/2030	1/1/2031	1/1/2032	1/1/2033	1/1/2034	1/1/2035	1/1/2036	1/1/2037	1/1/2038	1/1/2039
Option B2	Reach 1	6 Nov 30	8 Jan 35			40	256	257	255	255	6				
Option B2	Reach 2	14 Jan 30	8 May 36			252	256	257	255	255	256	93			
Option B2	Reach 3	16 Apr 31	11 Feb 36				186	257	255	255	256	30			
Option B2	Reach 4	2 Oct 30	17 Aug 37			65	256	257	255	255	256	257	163		
Option B2	Bethany Complex	10 Aug 28	29 May 35	102	256	256	256	257	255	255	107				

Assumptions

- 1 Borrow pit will be equally split between north and south RTM sites
- 2 RTM will first fill in the borrow pit, then all remaining RTM will go into onsite stockpile
- 3 Full acreage of stockpile will be utilized each year
- 4 The stockpile will be hydroseeded at end of last year of RTM generation
- 5 All values in CCY
- 6 5% contingency applied to calculated stockpile heights

Excavated volume - North	2,325,799 cy
Excavated volume - South	3,525,421 cy
Stockpile Contingency	5%

< surplus + borrow volume from RTM calcs  
< surplus + borrow volume from RTM calcs

			2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
B2	Lower Roberts - North		RTM Generated	-	349,151	482,430	478,675	478,675	480,552	56,315	-	-
			Borrow pit to be filled - beginning of year (cy)	-	127,054	-	-	-	-	-	-	-
			Borrow pit to be filled - end of year (cy)	-	-	-	-	-	-	-	-	-
			Excess from pit filling (cy)	-	222,097	482,430	478,675	478,675	480,552	56,315	-	-
	Dia (ft)	36		-	222,097	482,430	478,675	478,675	480,552	56,315	-	-
	Stockpile Area (ac.)	196		-	222,097	704,527	1,183,202	1,661,878	2,142,430	2,198,745	2,198,745	2,198,745
	Borrow pit volume (CCY)	127,054		-	0.7	2.3	3.9	5.5	7.1	7.3	-	-
			Stockpile Height (ft)	-	0.7	2.3	3.9	5.5	7.1	7.3	-	-
	Lower Roberts - South		RTM Generated	129,905	511,626	513,624	509,627	509,627	511,626	513,624	325,762	-
			Borrow pit to be filled - beginning of year (cy)	192,587	62,682	-	-	-	-	-	-	-
			Borrow pit to be filled - end of year (cy)	62,682	-	-	-	-	-	-	-	-
			Excess from pit filling (cy)	-	448,944	513,624	509,627	509,627	511,626	513,624	325,762	-
	Dia (ft)	36		-	448,944	513,624	509,627	509,627	511,626	513,624	325,762	-
	Stockpile Area (ac.)	196		-	448,944	962,568	1,472,195	1,981,822	2,493,448	3,007,072	3,332,834	3,332,834
	Borrow pit volume (CCY)	192,587		-	1.5	3.2	4.9	6.6	8.3	10.0	11.1	-
			Stockpile Height (ft)	-	1.5	3.2	4.9	6.6	8.3	10.0	11.1	-

< adjust rows if first year of RTM generation changes

< borrow pit volume from RTM calcs

< borrow pit volume from RTM calcs

Assumptions

- 1 BRPP stockpiles also include surplus excavated material from aqueduct construction
- 2 Full acreage of stockpile will be utilized each year
- 3 The stockpile will be hydroseeded at end of last year of material generation
- 4 All values in CCY
- 5 Option B10 stockpile at BRPP includes material excavated for Jones Connection (east side only)
- 6 Acreage shown for BRPP is combined acreage of four separate stockpiles
- 7 5% contingency applied to calculated stockpile heights

Stockpile Contingency	5%
-----------------------	----

B2	BRPP													
	Total Material Stockpile Volume (cumulative) (cy)		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
	Stockpile Height (ft)		39,399	179,814	230,502	1,047,797	1,848,820	2,819,680	2,797,639	2,876,387	2,876,387	2,876,387	2,876,387	2,876,387
			0.4	2	3	12	20	31	31	32	-	-	-	-
	Dia (ft)		36											
Stockpile Area (ac.)		59												

< from soil balance calcs  
< adjust rows if first year of RTM generation changes

- Assumptions
- 1. RTM generated from North tunnel goes to SF (and Bacon and Mandeville for Central option).
  - 2. RTM generated from South tunnel goes to filling in borrow pit (on the south side of Dierssen Road)
  - 3. All values are CCY unless otherwise noted
  - 4. The stockpiles will be combined into one permanent stockpile the year after completion of the South tunnel. This stockpile will be location South of Dierssen Road

Twin Cities Option 2B - Eastern

North Stockpile Area (ac.)		196
South Stockpile Area (ac.)		196
Borrow pit volume (CCY)		-

  

FINAL STOCKPILE AREA (ac.)		214
FINAL STOCKPILE VOLUME (CCY)		4,661,719
RING LEVEE DEGRADE VOLUME (CCY)		262,896
TOTAL STOCKPILE VOLUME (CCY)		4,924,615
FINAL STOCKPILE HEIGHT (FT)		14.3
HEIGHT WITH 5%		15.0

North Tunnel

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
RTM Gen at TC - North Tunnel	120,055	480,220	480,220	480,220	444,368	-	-	-	-	-
Yearly Reusable RTM Deficit	-	-	-	-	-	-	-	-	-	-
Yearly Reusable RTM Surplus (to stockpile)	120,055	480,220	480,220	480,220	444,368	-	-	-	-	-
Cumulative Reusable RTM Stockpile Volume	120,055	600,275	1,080,495	1,560,715	2,005,084	2,005,084	2,005,084	2,005,084	2,005,084	2,005,084
Stockpile Height (including unsuitable material) (ft)	0.4	2.0	3.6	5.2	6.7	6.7	6.7	6.7	6.7	6.7

South Tunnel

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
RTM Gen at TC - South Tunnel	491,749	491,749	491,749	491,749	491,749	491,749	156,282	-	-	-
Borrow Pit filling	-	-	-	-	-	-	450,142	-	-	-
RTM Export Shortage (from N Tunnel)	-	-	-	-	-	-	-	-	-	-
Borrow pit to be filled - beginning of year	-	-	-	-	-	-	-	-	-	-
Borrow pit to be filled - end of year	-	-	-	-	-	-	(450,142)	-	-	-
Yearly Reusable RTM Surplus (to stockpile)	491,749	491,749	491,749	491,749	491,749	491,749	(293,860)	-	-	-
Cumulative Reusable RTM Stockpile Volume	491,749	983,499	1,475,248	1,966,997	2,458,747	2,950,496	2,656,636	2,656,636	2,656,636	2,656,636
Yearly Material Deficit after South Tunnel Stockpile Consumed	-	-	-	-	-	-	-	-	-	-
Stockpile Height (including unsuitable material) (ft)	1.6	3.3	4.9	6.5	8.2	9.8	8.8	15.0	-	-

218668.2758

RTM stockpile seeded with grasses

## **APPENDIX F - Preliminary Operations and Maintenance Information for EIR Air Quality and Traffic Analyses for the Bethany Reservoir Alternative**

FINAL DRAFT

## **APPENDIX F - Preliminary Operations and Maintenance Information for EIR Air Quality and Traffic Analyses for the Bethany Reservoir Alternative**

This appendix provides preliminary operations and maintenance information for the Bethany Reservoir Alternative related to quantities of equipment and vehicle use and employee travel needs to develop air quality and traffic analyses in the EIR.

FINAL DRAFT



Operations and Maintenance Activities (Draft)

Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021  
This tab summarizes daily O&M activities for Delta Conveyance.

			Occurrence				Employees		Light Duty Trucks			Heavy Duty Trucks				Other Equipment						Excavation (cy / day)	Generators					Responsible Party	Notes
Site	County	Structure / Equipment	Activity	Frequency	Season	Duration	Number per day	Round trip miles per day	Activity days	Round trips per day	Round trip miles	Type	Activity days	Round trips per day	Round trip miles	Type	Horsepower	Activity Days	Utilisation	Operating Hours per day	Miles/day (assumed 5mph average)		No. of generators	Horsepower	Engine Tier	Daily Hours / Generator	Annual Hours / Generator		
Intake 3	Sac	Whole site	Inspection / security check	Daily	All	4 hrs	2	42																			DWR		
Intake 5	Sac	Whole site	Inspection / security check	Daily	All	4 hrs	2	44																			DWR		
Twin Cities Launch Shaft	Sac	Whole site	Inspection / security check	Daily	All	1 hr	2	64																			DWR		
New Hope Maintenance Shaft (Eastern)	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	72																			DWR		
Canal Ranch Maintenance Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	78																			DWR		
Terminus Tract Reception Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	90																			DWR		
King Island Maintenance Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	96																			DWR		
Lower Roberts Island Launch and Reception Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	52																			DWR		
Upper Jones Tract Maintenance Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	74																			DWR		
Union Island Maintenance Shaft	SI	Whole site	Inspection / security check	Daily	All	1 hr	2	40																			DWR		
Surge Basin Reception Shaft	Ala	Whole site	Inspection / security check	Daily	All	1 hr	2	6																			DWR		
Bethany Reservoir Pumping Plant	Ala	Whole site	Inspection / security check	Daily	All	2 hrs	2	6																			DWR	Including electrical substation and surge basin	
Bethany Reservoir Aqueduct	Ala	Whole site	Inspection / security check	Daily	All	1 day	2	6																			DWR		
Sacramento Control Centre	Sac	Whole system	Operations oversight	Daily	All	1 day	3	10																			DWR		
Delta Field Division Control Centre	Ala	Whole system	Operations oversight	Daily	All	1 day	3	30																			DWR	3 x 8hr shifts in 24hrs	

## Operations and Maintenance Activities (Draft)

*Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021*

**This tab summarizes weekly and bi-weekly O&M activities for Delta Conveyance**

[illegible]

Operations and Maintenance Activities (Draft)

Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021  
This tab summarizes monthly O&M activities for Delta Conveyance.

			Occurrence					Employees		Light Duty Trucks			Heavy Duty Trucks					Other Equipment							Generators					Responsible Party	Notes
Site	County	Structure / Equipment	Activity	Frequency	Season	Duration	Number per day	Round trip miles per day	Activity days	Round trips per day	Round trip miles	Type	Activity days	Round trips per day	Round trip miles	Type	Horsepower	Activity Days	Utilisation	Operating Hours per day	Miles/day (assumed 5mph average)	Excavation (cy / day)	No. of generators	Horsepower	Engine Tier	Daily Hours / Generator	Annual Hours / Generator				
Intake 3	Sac	Intake screens	Test operability	Monthly	All	1 day	2	42																				DWR	x2 generators tested for 1/2hr each every month. Tier assumed.		
Intake 3	Sac	Standby generators	Test operability	Monthly	All	1 hr	2	42															2	50	4	1	6	DWR			
Intake 5	Sac	Intake screens	Test operability	Monthly	All	1 day	2	44																				DWR			
Bethany Reservoir Surge Basin	Ala	Standby generators	Test operability	Monthly	All	1 hr	2	44																2	50	4	1	6	DWR	x2 generators tested for 1/2hr each every month. Tier assumed.	
Bethany Reservoir Surge Basin	Ala	Sluice Gates	Test operability	Monthly	All	4 hrs	2	6																				DWR			
Bethany Reservoir Surge Basin	Ala	Sluice Gate Standby Generators	Test operability	Monthly	All	1 hr	2	98															1	50	4	1	12	Contractor			
Bethany Reservoir Surge Basin	Ala	Dewatering Pumps	Test operability	Monthly	All	4 hrs	2	6																				DWR	Assumed hp and runtime. Tier assumed.		
Bethany Reservoir Surge Basin	Ala	Dewatering Pumps Standby Generators	Test operability	Monthly	All	1 hr	2	98																				Contractor			
Bethany Reservoir Pumping Plant	Ala	Medium Voltage Transformers (Electrical Building)	Inspection	Monthly	All	2 days	2	6															1	50	4	1	12	Contractor			
Bethany Reservoir Pumping Plant	Ala	Cooling Tower	General maintenance	Monthly	All	16 hrs	2	6																				DWR	2No. Cooling towers, 8 hrs each 14No. Pumps, x2 per day 14No. Pumps, x1 per day		
Bethany Reservoir Pumping Plant	Ala	Main Pumps (Pumping Plant Building)	Inspection	Monthly	All	7 days	2	6																				DWR			
Bethany Reservoir Pumping Plant	Ala	Main Pumps (Pumping Plant Building)	General maintenance	Monthly	All	14 days	2	6																				DWR			
Bethany Reservoir Pumping Plant	Ala	Electric generator (Generator Building)	General maintenance and testing	Monthly	All	8 hrs	2	6																				DWR	Assumed hp and runtime. Tier assumed.		
Bethany Reservoir Pumping Plant	Ala	Check valves	Inspection and maintenance	Monthly	All	1 day	2	6																				DWR			
Bethany Reservoir Discharge Structure	Ala	Generator	Test operability and inspection	Monthly	All	1 hr	2	98															1	50	4	1	12	Contractor			

Operations and Maintenance Activities (Draft)  
Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021  
This tab summarizes quarterly O&M activities for Delta Conveyance.

			Occurrence				Employees		Light Duty Trucks			Heavy Duty Trucks				Other Equipment							Excavation	Generators					Responsible Party	Notes
Site	County	Structure / Equipment	Activity	Frequency	Season	Duration	Number per day	Round trip miles per day	Activity days	Round trips per day	Round trip miles	Type	Activity days	Round trips per day	Round trip miles	Type	Horsepower	Activity Days	Utilisation	Operating Hours per day	Miles/day (assumed 5mph average)	(cy / day)	No. of generators	Horsepower	Engine Tier	Daily Hours / Generator	Annual Hours / Generator			
Bethany Reservoir Surge Basin	Ala	Surge Basin	Weed management/herbicide application	Quarterly	All	1 day	2	6																				DWR	5No. DX Air Handlers, x1 day each	
Bethany Reservoir Surge Basin	Ala	Surge Basin Walls	Movement monitoring survey	Quarterly	All	1 day	2	98																				Contractor		
Bethany Reservoir Surge Basin	Ala	Sluice Gates	Lubrication	Quarterly	All	1 day	2	6																				DWR		
Bethany Reservoir Pumping Plant	Ala	DX Air Handler (Electrical Building)	General maintenance	Quarterly	All	5 days	2	6																				DWR		
Bethany Reservoir Pumping Plant	Ala	Ventilation Equipment (Generator Building)	General maintenance	Quarterly	All	4 hrs	2	6																				DWR		
Bethany Reservoir Pumping Plant	Ala	HVAC Equipment (Mechanical Storage Building)	General maintenance	Quarterly	All	8 hrs	2	6																				DWR		
Bethany Reservoir Pumping Plant	Ala	HVAC Equipment (Mechanical Storage Building)	Maintenance	Quarterly	All	8 hrs	2	6																				DWR		

5No. DX Air Handlers, x1 day each

**Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021**  
**This tab summarizes bi-annual O&M activities for Delta Conveyance.**

Bethany Reservoir Aqueduct	Ala	Cathodic protection	Regular monitoring	Bi-annually	Apr/Oct	4 days	2	6				DWR	4No. Pipelines
----------------------------	-----	---------------------	--------------------	-------------	---------	--------	---	---	--	--	--	-----	----------------

**Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021**  
**This tab summarizes annual O&M activities for Delta Conveyance.**

			Occurrence				Employees		Light Duty Trucks			Heavy Duty Trucks				Other Equipment							Excavation (cy / day)	Generators					Responsible Party	Notes
Site	County	Structure / Equipment	Activity	Frequency	Season	Duration	Number per day	Round trip miles per day	Activity days	Round trips per day	Round trip miles	Type	Activity days	Round trips per day	Round trip miles	Type	Horsepower	Activity Days	Utilisation	Operating Hours per day	Miles/day (assumed 5mph average)	No. of generators		Horsepower	Engine Tier	Daily Hours / Generator	Annual Hours / Generator			
Intake 3	Sac	Intake screens	Refurbish	Annually	Aug	6 days	1	42				Low loader	0	0	0	Forklift	74	6	20%	2							Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 3	Sac	Intake screens	Refurbish	Annually	Aug	6 days	1	42				Flat bed truck	0	0	0												Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 3	Sac	Intake screens	Refurbish	Annually	Aug	6 days	2	42				Boom truck	0	0	0	Boom truck	300	6	80%	8							Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 3	Sac	Intake	Dive inspection	Annually	Any	2 days	2	42	2	1	50					Dive boat	150	2	20%	2							Contractor	1 dive boat pilot + 1 diver + 2 others. Boat and pickup truck stored at Intake 3, driven to Clarksburg Boat Ramp to be launched.		
Intake 3	Sac	Roller gates	Refurbish - Install isolation gates	Annually	May-Sept	1 day	2	42				Boom truck	0	0	0	Boom truck	300	1	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Roller gates	Refurbish - Install isolation gates	Annually	May-Sept	1 day	2	42				Flat bed truck	0	0	0	Flat bed truck	380	1	80%	8	40						DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Roller gates	Refurbish - Remove and replace roller gates	Annually	May-Sept	9 days	2	42				Boom truck	0	0	0	Boom truck	300	9	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Roller gates	Refurbish - Remove and replace roller gates	Annually	May-Sept	9 days	2	42				Flat bed truck	0	0	0	Flat bed truck											DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Roller gates	Refurbish - Reinstall isolation gates	Annually	May-Sept	1 day	2	42				Boom truck	0	0	0	Boom truck	300	1	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Roller gates	Refurbish - Reinstall isolation gates	Annually	May-Sept	1 day	2	42				Flat bed truck	0	0	0	Flat bed truck	380	1	50%	5	25						DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 3	Sac	Any	Unforeseen maintenance	Annually	Any	10 days	4	42																			DWR	Contingency		
Intake 3	Sac	Control system	Verification testing	Annually	Any	1 day	2	42																			DWR			
Intake 3	Sac	Flow meters and other instrumentation	Calibrate instrumentation	Annually	Any	10 days	2	42																			DWR			
Intake 3	Sac	Site roads	General maintenance	Annually	Apr-May	5 days	1	42				Low loader	2	1	42	Motor grader	139	5	80%	8							DWR			
Intake 3	Sac	Site roads	General maintenance	Annually	Apr-May	5 days	1	42				Low loader	2	1	42	Gradall	215	5	80%	8							DWR			
Intake 3	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	2	42				Boom truck	0	0	0	Boom truck	300	1	50%	5							DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 3	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	1	42				Flat bed truck	0	0	0	Flat bed truck	380	1	50%	5	25						DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 3	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	1	42				Low loader	0	0	0	Forklift	74	1	10%	1							DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 3	Sac	Radial gates (+ sluice gate)	Lubrication	Annually	May-Sept	1 day	2	42																			DWR			
Intake 3	Sac	Sediment jetting pump and system	Test operability	Annually	May-Sept	4 days	2	42																			DWR			
Intake 3	Sac	Sediment Basin	Sediment removal - Install pumps	Annually	May-Jul	1 day	1	42				Boom truck	0	0	0	Boom truck	300	1	20%	2							Contractor			
Intake 3	Sac	Sediment Basin	Sediment removal - Test operability	Annually	May-Jul	2 days	2	42								Dredge	400	6	100%	10							Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Pump out water / dredge	Annually	May-Jul	6 days	2	42																			Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Drain water	Annually	May-Jul	3 days	2	42																			Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Disc sediment	Annually	May-Jul	6 days	1	42				Low loader	2	1	42	Tractor	90	6	100%	10							Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Remove sediment from basin	Annually	May-Jul	9 days	1	42				Low loader	2	1	42	Wheel loader (small)	168	9	100%	10							Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Remove sediment from basin	Annually	May-Jul	9 days	1	42				Low loader	2	2	42	Dump trucks (small) (x2)	74	9	100%	10							Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Haul sediment to landfill	Annually	May-Jul	9 days	1	42				Haul truck	9	33	48												Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Jet wash / clean underdrains	Annually	May-Jul	4 days	2	42				Sewer jet truck	2	0.5	42	Sewer jet truck	300	4	100%	10	50						Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 3	Sac	Sediment Basin	Sediment removal - Remove pumps	Annually	May-Jul	1 day	2	42																			Contractor	1 day/basin x 4 basins		
Intake 3	Sac	Sediment Basin	Sediment removal - Jet wash basins and final clear out	Annually	May-Jul	1 day	2	42								Pressure washer	14	1	80%	8							Contractor			
Intake 3	Sac	Sediment Basin	Sediment removal - Jet wash basins and final clear out	Annually	May-Jul	1 day	2	42								Wheel loader (small)	168	1	80%	8							Contractor			
Intake 3	Sac	Sediment Basin	Sediment removal - Demobilisation inc. cleaning and st	Annually	May-Jul	4 days	1	42				Low loader	2	1	42	Wheel loader (small)	168	4	80%	8							Contractor			
Intake 3	Sac	Sediment Basin	Sediment removal - Supervision	Annually	May-Jul	15 days	1	42																			Contractor	Full duration of activity		
Intake 3	Sac	Wet Well	Sediment removal - Excavate sediment	Annually	May-Jul	3 days	5	42				Low loader	2	1	42	Boom truck	300	3	50%	5							Contractor			
Intake 3	Sac	Wet Well	Sediment removal - Haul sediment to landfill	Annually	May-Jul	1 day	2	42				Haul truck	1	4	384												Contractor	Assume 2No. Trucks x 4 trips/truck/day		
Intake 3	Sac	Wet Well	Sediment removal - Inspect wet well	Annually	May-Jul	1 day	2	42																			Contractor			
Intake 3	Sac	Gantry Crane	Inspection and testing	Annually	Any	1 day	2	42																			Contractor			
Intake 3	Sac	Embankments	Survey	Annually	Apr-Oct	3 days	2	42																			Contractor			
Intake 5	Sac	Intake screens	Refurbish	Annually	Aug	6 days	1	44				Low loader	2	1	4	Forklift	74	6	20%	2							Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 5	Sac	Intake screens	Refurbish	Annually	Aug	6 days	1	44				Flat bed truck	2	0.5	44												Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 5	Sac	Intake screens	Refurbish	Annually	Aug	6 days	2	44				Boom truck	2	0.5	4	Boom truck	300	6	80%	8							Contractor	Assume 1 screen/day, 6 screens/yr. All screens every 5yrs. Includes maintenance of motors, seals etc.		
Intake 5	Sac	Intake	Dive inspection	Annually	Any	2 days	2	44	2	1	56					Dive boat	150	2	20%	2							Contractor	1 dive boat pilot + 1 diver + 2 others. Boat and pickup truck stored at Intake 3, driven to Clarksburg Boat Ramp to be launched.		
Intake 5	Sac	Roller gates	Refurbish - Install isolation gates	Annually	May-Sept	1 day	2	44				Boom truck	1	1	4	Boom truck	300	1	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Roller gates	Refurbish - Install isolation gates	Annually	May-Sept	1 day	2	44				Flat bed truck	1	1	4	Flat bed truck	380	1	80%	8	40						DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Roller gates	Refurbish - Remove and replace roller gates	Annually	May-Sept	9 days	2	44				Boom truck	2	0.5	4	Boom truck	300	9	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Roller gates	Refurbish - Remove and replace roller gates	Annually	May-Sept	9 days	2	44				Flat bed truck	2	0.5	4	Flat bed truck											DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Roller gates	Refurbish - Reinstall isolation gates	Annually	May-Sept	1 day	2	44				Boom truck	1	1	4	Boom truck	300	1	80%	8							DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Roller gates	Refurbish - Reinstall isolation gates	Annually	May-Sept	1 day	2	44				Flat bed truck	1	1	4	Flat bed truck	380	1	50%	5	25						DWR	90 roller gates over 5 years = 18 gates/year, 1 day/gate. Includes lubrication, actuator replacement, coating and cathodic protection.		
Intake 5	Sac	Any	Unforeseen maintenance	Annually	Any	10 days	4	44																			DWR	Contingency		
Intake 5	Sac	Control system	Verification testing	Annually	Any	1 day	2	44																			DWR			
Intake 5	Sac	Flow meters and other instrumentation	Calibrate instrumentation	Annually	Any	10 days	2	44																			DWR			
Intake 5	Sac	Site roads	General maintenance	Annually	Apr-May	5 days	1	44				Low loader	2	1	44	Motor grader	139	5	80%	8							DWR			
Intake 5	Sac	Site roads	General maintenance	Annually	Apr-May	5 days	1	44				Low loader	2	1	44	Gradall	215	5	80%	8							DWR			
Intake 5	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	2	44				Boom truck	1	1	4	Boom truck	300	1	50%	5							DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 5	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	1	44				Flat bed truck	1	1	4	Flat bed truck	380	1	50%	5	25						DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 5	Sac	Radial gates (+ sluice gate)	Test operability	Annually	May-Sept	1 day	1	44				Low loader	1	1	4	Forklift	74	1	10%	1							DWR	4 radial gates + 1 sluice gate. Install bulkheads, test gates, remove bulkheads.		
Intake 5	Sac	Radial gates (+ sluice gate)	Lubrication	Annually	May-Sept	1 day	2	44																			DWR			
Intake 5	Sac	Sediment jetting pump and system	Test operability	Annually	May-Sept	4 days	2	44																			DWR			
Intake 5	Sac	Sediment Basin	Sediment removal - Install pumps	Annually	Jun-Aug	1 day	1	44				Boom truck	1	1	4	Boom truck	300	1	20%	2							Contractor			
Intake 5	Sac	Sediment Basin	Sediment removal - Test operability	Annually	Jun-Aug	2 days	2	44																			Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 5	Sac	Sediment Basin	Sediment removal - Pump out water / dredge	Annually	Jun-Aug	6 days	2	44								Dredge	400	6	100%	10							Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 5	Sac	Sediment Basin	Sediment removal - Pump out water / dredge	Annually	Jun-Aug	6 days	1	44																			Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 5	Sac	Sediment Basin	Sediment removal - Drain water	Annually	Jun-Aug	3 days	2	44																			Contractor	From CalSim data. Assume 6 day overlap between successive activities.		
Intake 5	Sac	Sediment Basin	Sediment removal - Disc sediment	Annually	Jun-Aug	6 days	1	44				Low loader	2	1	44	Tractor	90	6	100%	10										

Bethany Reservoir Surge Basin	Ala	Concrete walls/floor	Pressure wash	Annually	Jul-Aug	5 days	3	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</
-------------------------------	-----	----------------------	---------------	----------	---------	--------	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----



Operations and Maintenance Activities (Draft)

Bethany Reservoir Alternative 6,000 cfs Project Design Capacity (DWR EIR Alternative 5) - Draft 06/29/2021  
This tab summarizes long term O&M activities for Delta Conveyance.

			Occurrence					Employees		Light Duty Trucks			Heavy Duty Trucks				Other Equipment					Excavation (cy / day)	Generators					Responsible Party	Notes	
Site	County	Structure / Equipment	Activity	Frequency	Season	Duration	Number per day	Round trip miles per day	Activity days	Round trips per day	Round trip miles	Type	Activity days	Round trips per day	Round trip miles	Type	Horsepower	Activity Days	Utilisation	Operating Hours per day	Miles/day (assumed 5mph average)		No. of generators	Horsepower	Engine Tier	Daily Hours / Generator	Annual Hours / Generator			
Intake 3	Sac	Site roads	Sealing and coating	Every 2 years	Apr-Oct	40 hrs	4	50																				Contractor		
Intake 3	Sac	Site roads	Striping	Every 2 years	Apr-Oct	16 hrs	2	50																				Contractor		
Intake 3	Sac	Domestic WW/Septic System/Leachfield	Clearing/cleaning	Every 5 years	Apr-Oct	8 hrs	2	50																				Contractor		
Intake 3	Sac	Electrical substation	Specialist testing	Every 4 years	Apr-Oct	1 day	2	50																				Contractor		
Intake 3	Sac	Gantry Crane	Recertification	Every 4 years	Apr-Oct	2 days	4	50																				Contractor	Per CA OSHA	
Intake 3	Sac	Radial gates	Hoist cable rebalancing	Every 2 years	Apr-Oct	2 days	2	50				Boom truck	0	0	0	Boom truck	300	2	50%	5								Contractor	4 radial gates, assume 1/2 day / gate	
Intake 3	Sac	Radial gates	Hoist cable and motor replacement	Every 15 years	Apr-Oct	4 days	2	50				Boom truck	0	0	0	Boom truck	300	4	50%	5								Contractor	4 radial gates, assume 1 day / gate	
Intake 3	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	2	50				Boom truck	4	1	50	Boom truck	300	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 3	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	1	50				Flat bed truck	4	1	50	Flat bed truck	380	4	80%	8	40							Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 3	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	1	50				Low loader	4	1	50	Forklift	74	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 3	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	3	50				Truck mounted crane	4	1	50	Truck mounted crane	175	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Assume 1 day / gate to swap out	
Intake 3	Sac	Site roads	Repaving - Plane surface	Every 15 years	Apr-Oct	3 days	3	50				Low loader	2	1	50	Planer	801	3	100%	10								Contractor	12,714 LF	
Intake 3	Sac	Site roads	Repaving - Haul away from site	Every 15 years	Apr-Oct	3 days	1	50				Haul truck	3	102	48													Contractor	2,825 yd3, 5,531 tons @18 tons/truck	
Intake 3	Sac	Site roads	Repaving - Deliver asphalt	Every 15 years	Apr-Oct	3 days	1	50				Asphalt delivery truck	3	102	50													Contractor	2,825 yd3, 5,531 tons @18 tons/truck	
Intake 3	Sac	Site roads	Repaving - Lay paving	Every 15 years	Apr-Oct	3 days	3	50				Low loader	2	1	50													Contractor		
Intake 3	Sac	Site roads	Repaving - Compact paving	Every 15 years	Apr-Oct	3 days	2	50				Low loader	2	1	50	Compactor	131	3	100%	10								Contractor		
Intake 5	Sac	Site roads	Sealing and coating	Every 2 years	Apr-Oct	40 hrs	4	56																				Contractor		
Intake 5	Sac	Site roads	Striping	Every 2 years	Apr-Oct	16 hrs	2	56																				Contractor		
Intake 5	Sac	Domestic WW/Septic System/Leachfield	Clearing/cleaning	Every 5 years	Apr-Oct	8 hrs	2	56																				Contractor		
Intake 5	Sac	Electrical substation	Specialist testing	Every 4 years	Apr-Oct	1 day	2	56																				Contractor		
Intake 5	Sac	Gantry Crane	Recertification	Every 4 years	Apr-Oct	2 days	4	56																				Contractor	Per CA OSHA	
Intake 5	Sac	Radial gates	Hoist cable rebalancing	Every 2 years	Apr-Oct	2 days	2	56				Boom truck	2	0.5	4	Boom truck	300	2	50%	5								Contractor	4 radial gates, assume 1/2 day / gate	
Intake 5	Sac	Radial gates	Hoist cable and motor replacement	Every 15 years	Apr-Oct	4 days	2	56				Boom truck	2	0.5	4	Boom truck	300	4	50%	5								Contractor	4 radial gates, assume 1 day / gate	
Intake 5	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	2	56				Boom truck	4	1	56	Boom truck	300	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 5	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	1	56				Flat bed truck	4	1	56	Flat bed truck	380	4	80%	8	40							Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 5	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	1	56				Low loader	4	1	56	Forklift	74	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Install and remove bulkheads.	
Intake 5	Sac	Radial gates	Refurbishment, recoat and cathodic protection	Every 30 years	Apr-Oct	84 days	3	56				Truck mounted crane	4	1	56	Truck mounted crane	175	4	80%	8								Contractor	4 radial gates x 1mth (21 days) / gate. Assume 1 day / gate to swap out	
Intake 5	Sac	Site roads	Repaving - Plane surface	Every 15 years	Apr-Oct	3 days	3	56				Low loader	2	1	56	Planer	801	3	100%	10								Contractor	12,877 LF	
Intake 5	Sac	Site roads	Repaving - Haul away from site	Every 15 years	Apr-Oct	3 days	1	56				Haul truck	3	104	52													Contractor	2,864 yd3, 5,606 tons @18 tons/truck	
Intake 5	Sac	Site roads	Repaving - Deliver asphalt	Every 15 years	Apr-Oct	3 days	1	56				Asphalt delivery truck	3	104	56													Contractor	2,864 yd3, 5,606 tons @18 tons/truck	
Intake 5	Sac	Site roads	Repaving - Lay paving	Every 15 years	Apr-Oct	3 days	3	56				Low loader	2	1	56	Paver	225	3	100%	10								Contractor		
Intake 5	Sac	Site roads	Repaving - Compact paving	Every 15 years	Apr-Oct	3 days	2	56				Low loader	2	1	56	Compactor	131	3	100%	10								Contractor		
Tunnels	All	Structure	Inspection	Every 2 years	Apr-Oct	40 days	2	56				Flat bed truck	2	0.5	56	Flat bed truck	380	40	10%	1	5		1	50	4	10	200	Contractor	Electrical powered remotely operated vehicle with diesel generator support	
Tunnels	All	Structure	Inspection	Every 2 years	Apr-Oct	40 days	2	56				Truck mounted crane	2	0.5	56	Truck mounted crane	175	40	25%	2.5								Contractor		
Tunnels	All	Structure	Dewatering and inspection - install stop logs	Every 10 years	Jul-Sept	1 day	2	56				Flat bed truck	1	1	56	Flat bed truck	380	1	20%	2	10								Contractor	1 day to install stop logs
Tunnels	All	Structure	Dewatering and inspection - install stop logs	Every 10 years	Jul-Sept	1 day	2	56				Boom truck	1	1	56	Boom truck	300	1	50%	5									Contractor	1 day to install stop logs
Tunnels	All	Structure	Dewatering and inspection - install drain pumps and dr	Every 10 years	Jul-Sept	3 days	2	56				Flat bed truck	2	0.5	56	Flat bed truck	380	3	20%	2	10								Contractor	3 days
Tunnels	All	Structure	Dewatering and inspection - lower and install equipme	Every 10 years	Jul-Sept	20 days	2	56				Truck mounted crane	20	0.5	56	Truck mounted crane	175	20	50%	5									Contractor	2 days x10 shaft sites, includes vehicle, lighting, ventilation etc.
Tunnels	All	Structure	Dewatering and inspection - lower and install equipme	Every 10 years	Jul-Sept	20 days	2	56				Flat bed truck	20	0.5	56	Flat bed truck	380	20	20%	2	10								Contractor	2 days x10 shaft sites, includes vehicle, lighting, ventilation etc.
Tunnels	All	Structure	Dewatering and inspection - inspection	Every 10 years	Jul-Sept	40 days	2	56																				Contractor		
Tunnels	All	Structure	Dewatering and inspection - remove equipment	Every 10 years	Jul-Sept	20 days	2	56	</																					



[illegible]