

FY17–21 Maintenance Work Plan



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FY2017-2021 Maintenance Work Plan

Water Utility Enterprise District-Wide Asset Management Program

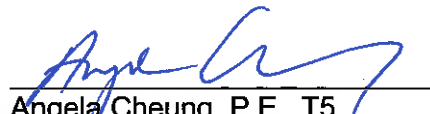
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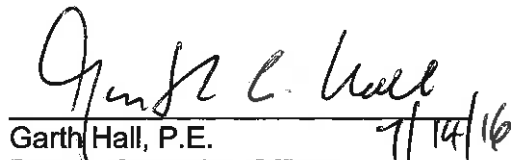
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I. Introduction and Purpose

The Annual Maintenance Work Plan (AMWP) has been relabeled the Maintenance Work Plan (MWP) which now spans a five-year timeframe. This endeavor was undertaken at the request of management and staff in an effort to plan and schedule projects, look for efficiencies, and to provide a better five-year forecast for project plans, the District budget, and the Capital Improvement Program (CIP). The work lists in the first year of the five-year rolling plan will be fixed, while future years may be adjusted based on changing conditions. The plan will continue to be updated annually.

The MWP is a product of the district-wide asset management program that identifies high value water utility infrastructure improvements and inspection projects for implementation during each fiscal year. The MWP includes a planned work project list that is finalized through a collaboration process with Water Utility Operations & Maintenance, Water Utility Technical Support and Water Supply Divisions.

Planned work (PW) is maintenance work that is neither routine preventative maintenance work (PM) or corrective maintenance work (CM). Planned work consists of the intermittent rehabilitation or overhaul of an existing asset, or replacement of an asset that has reached the end of its useful life. Planned work can also be classified as minor (Small Caps) or major capital projects (CIP), depending on the effort involved and the extent to which it must be performed by supplemental contractors and major materials expenditures. PM work is proactively undertaken in order to keep District assets performing to their required level of service, as opposed to CM work, which is undertaken to repair a deficiency in an asset.

The PW projects are selected to optimize asset performance, maintain or improve reliability within an acceptable risk tolerance, and to minimize asset life-cycle costs. Maintenance history, equipment failure rates, maintenance cost over the previous year, asset condition, replacement and overhaul schedules, and risk are taken into consideration during the process of developing the PW projects for the MWP.

The PW projects are identified in the MWP with estimated costs that are intended to support the district's operations and long term capital budgeting processes. Execution of the planned work projects is predominately performed through the Treatment Plant Maintenance Unit (555) and the Raw Water Field Operations and Pipeline Maintenance Unit (585); with additional technical support from the Utility Maintenance Engineering Unit (435), the Operations Planning and Analysis Unit (455), the Utility Electrical and Control Systems Engineering Unit (545), and other district units including watershed field operations units. Other outside contractors are used as needed. Thus, the MWP is a support document provided to these units to help focus maintenance efforts.

Copies of this document are available on the District intranet on the asset management web site at <http://www.aqua.gov/annual-maintenance-work-plans-amwp>.

II. Maintenance Work Plan Development Methodology

Each year, the water utility asset management program develops a list of planned work (PW) activities for the utility to complete the following fiscal year. This list of equipment replacement, overhaul, and inspection projects is developed systematically, with operations, maintenance, and engineering input; and is provided to the maintenance units for input to the Long Term

Funding Forecast Model (LTFM). This helps ensure asset management needs are included in the upcoming fiscal year's budget.

This year, a draft FY17 PW project list was completed in July 2015, prior to the first pass budget submission and review by the budget committee, in order to contribute to, and be a foundation for, the budget process. The intent of the draft PW project list was to provide the necessary background and justification for the water utility maintenance budget for the upcoming fiscal year. The PW project list for the AMWP takes into account several data streams in order to best reflect the asset management needs of the water utility. The information sources that feed into the analysis are:

- Long term replacement, overhaul, and inspection plans contained in the Infrastructure Capital Asset Management Toolkit (ICAM) database
- Condition assessment and risk data (BRE)
- Maintenance histories including equipment failure rate and maintenance cost over the previous year contained in the Computerized Maintenance Management System (CMMS), Maximo
- Interviews with operations, maintenance, and engineering management and staff
- Other inputs as appropriate

The development of the MWP starts with a review of the water utility's long term funding forecast database called the Infrastructure Capital Asset Management Toolkit (ICAM). ICAM contains an extensive list of replacement, overhaul, and inspection projects that are uniquely assigned to individual assets and scheduled out through 2040. Each project has a cost and a scheduled year for execution resulting in an ability to sum up all anticipated asset replacement, overhaul, and inspection needs by fiscal year. The projects identified in ICAM for the next fiscal year are evaluated for completeness and accuracy of cost estimates, taking into consideration cost data from the utility's most recent maintenance activities.

After reviewing and updating the data, a 15 year projection of ICAM generated projects commencing in the upcoming fiscal year is provided to the maintenance and engineering unit managers for inclusion in their project plans, and the associated LTFM maintained by the District's financial planning program for budget and rate development purposes. The 15 year look ahead is one of the foundational inputs in the process of setting rates and building the upcoming fiscal year budget for the maintenance units.

The graphics in Section VII depict a high level view of the funding demand captured in the ICAM model for the next 15 years. The graphs represent the set of assets residing in the ICAM model, and do not represent a complete picture of all the assets of the water utility¹. Recharge facilities, most dam and reservoir assets, new plant assets, and assets at new facilities such as the Silicon Valley Advanced Water Purification Center, are not included in the 15 year funding needs forecast shown in Section VII.

The data presented in the 15 year forecast is intended to provide a snapshot of the anticipated investment needs, represented as services and supplies funding for known asset replacement, refurbishment, and inspection. The data included in the graphics are raw, un-analyzed data from

¹ Not all utility assets are included in the ICAM model. The model mainly contains mechanical assets located at the water treatment plants as well as pipeline assets. The model does not contain water supply field facilities such as recharge ponds, dam related assets, or many electrical, control systems, and civil assets at the water treatment plants.

the ICAM application. Additionally, the funding demands reflected are not full cost projections, and in most cases include only the cost of the equipment and materials, not labor.

The ICAM output of projects from the first five-years of the 15 year look ahead is the starting point and one of the initial inputs into the MWP analysis process. The second input is the water utility's condition assessment and risk analysis data. The water utility assesses condition of assets and assigns condition ratings of 1 through 5 (5 being worst condition). Condition ratings contribute to risk scores, which consider the probability of failure and the consequence of failure or impact to levels of service should the asset fail.

Maintenance history data from Maximo, the District's CMMS, supplements the ICAM and risk data. Maximo data helps identify those assets with high failure rates and high maintenance cost compared to replacement value. Finally, District operations, maintenance, and engineering management and staff provide input on the assets and projects included in the PW list for the MWP.

Once an initial PW list has been developed, projects are placed into one of three categories:

- Projects may be recommended as a Capital Improvement Project (CIP), in which case a new capital project is requested and submitted to the Capital Program Services Division. Some Capital Projects including pipeline rehabilitation projects are managed by the Technical Support Division.
- Projects may be rescheduled to a future year if it appears to be unnecessary based on condition, risk, and maintenance history data.
- Projects may be scheduled in the MWP as either maintenance or a small capital project (Small Caps); these are listed in the PW tables on pages 5-19.

The PW project list underwent several iterations from February 2015 to June 2015 based on input from maintenance units. From an initial list of assets and projects developed from the ICAM model, meetings were held with maintenance and engineering staff, who recommended additional projects for inclusion in the MWP as well as projects to be delayed to future years.

In July 2015, a final list of projects was prepared. This list of projects is found in this report, and was included in the budget request of the maintenance units.

Changes and improvements to the MWP process over the past are discussed in Section VIII. Some major proposed changes to next years' MWP process and report are discussed below:

- Beginning next year, the MWP lists will be generated on the newly implemented CMMS, the Asset Management Planning Tool (AMPT). This tool supports our goal of continuous improvement, in that it contains an updated register of assets including water supply facilities, dam related assets, many electrical, control systems, and civil assets at the water treatment plants, and the new advanced water purification center. None of these assets are currently included in the ICAM model. Furthermore, the AMPT includes equipment, material, and labor costs while the ICAM model included only equipment and material costs. Therefore, next year's MWP project lists and costs will vary from this plan due to the updated register of assets and costs.
- In order to better plan resources and funding, all PW activities will identify the necessary support needs (engineering, maintenance, craft, etc.) in order to complete the work in

year one of the five-year MWP. The long-term goal of this effort is to resource load all five-years of the MWP in order to better estimate the total resources required to maintain assets at an established level of service. This will enable units to better plan and schedule projects, and will provide a better five-year forecast for project plans, the District's budget, and the Capital Improvement Program (CIP).

- Maximo work orders that require the assistance of the watershed field operations unit will reference the Access Valley Water (AVW) number within the Maximo work order in an effort to capture the total cost of performing the maintenance activities for Water Utility assets and document in the Annual Maintenance Work Plan Review Report authored by the Asset Management Unit.

III. Fiscal Year 2017 Planned Work

The core of the MWP is the list of planned work (PW) to be conducted over the upcoming fiscal year.

Tables 1 through 12 summarize the PW, pipeline rehabilitation projects, and small capital projects to be completed in FY 2017. Small capital projects are differentiated from PW within these tables by being represented in a **dark red** font color. Large capital projects are listed in Section V. The project costs provided in the tables include services and supply costs, but do not include labor costs. Work order numbers are provided, and are used for tracking all work associated with the projects as explained in Section V.

Tables 1 through 3, which represent the water treatment facilities, include information identifying the necessary staff support needs (engineering, maintenance, craft, etc.) for FY17, as detailed within the cells on the right. As mentioned in Section II, in future MWPs, all PW activities will identify the necessary support staff needed (engineering, maintenance, craft, etc.) to complete the work in year one of the five-year MWP as part of continuous improvement and to better understand the resources needed to maintain assets at an established level of service.

Table 1. Penitencia Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
1	E10021	PWT_15PMP10021	Alum Pump 1	Replace Pump	\$ 7,500	Order pump & motor together	WPL1000801	93231099	6626	9		2	2			5	5		
2	E10022	PWT_15MTR10022	Alum Pump Motor 1	Replace Motor	\$ 750		WPL1000802	93231099	6626				2						
3	E10025	PWT_15MTR10025	Alum Pump Motor 2	Replace Motor	\$ 750	If changing to different pump manufacturer on pump 1, the same should be done on pump 2 and budget in a new pump.	WPL1000803	93231099	6626	9		2	2						
4	E10023	PWT_15EDR10023	Alum Pump Motor Var Freq Drive 1	Replace VFD	\$ 3,000		WPL1000804	93231099	6626		5	5	2				5		
5	E10026	PWT_15EDR10026	Alum Pump Motor Var Freq Drive 2	Replace VFD	\$ 3,000		WPL1000805	93231099	6626		5	5	2				5		
6	E10061	PWT_47PMP10061	Belt Press Feed Pump	Rehab Rebuild Pump	\$ 3,792		WPL1000806	93231099	6626	5	5	5	2						
7	E10063	PWT_47MIS10063	BP Conveyor Belt	Replace Pans	\$ 50,000	Small Cap Project	WPL1000807	93764004	6626										
8	E10063	PWT_47MIS10063	BP Conveyor Belt	Replace BFP	\$ 225,000		WPL1000808	93764004	6626								5		
9	E10101	PWT_17PMP10101	Carbon Feed Pump 1	Replace Pump	\$ 7,500	Due to infrequent use, replace parts until new filters are online.	WPL1000809	93231099	6626										
10	E10104	PWT_17PMP10104	Carbon Feed Pump 2	Replace Pump	\$ 7,500		WPL1000810	93231099	6626										
11	E10102	PWT_17MTR10102	Carbon Feed Pump Motor 1	Replace Motor	\$ 750		WPL1000811	93231099	6626										
12	E10105	PWT_17MTR10105	Carbon Feed Pump Motor 2	Replace Motor	\$ 750		WPL1000812	93231099	6626										
13	E10103	PWT_17EDR10103	Carbon Feed Pump Var Freq Drive 1	Replace VFD	\$ 3,000		WPL1000813	93231099	6626										
14	E10106	PWT_17EDR10106	Carbon Feed Pump Var Freq Drive 2	Replace VFD	\$ 3,000		WPL1000814	93231099	6626										
15	E10107	PWT_17PMP10107	Carbon Recirculation Pump	Replace Pump	\$ 18,000		WPL1000815	93231099	6626										
16	E10108	PWT_17MTR10108	Carbon Recirculation Pump Motor	Replace Motor	\$ 750		WPL1000816	93231099	6626										

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
17	E10091	PWT_17TNK10091	Carbon Tank 1	Rehab Re-coat	\$ 25,000	Due to infrequent use, replace parts until new filters are online.	WPL1000817	93231099	6169										
18	E10094	PWT_17TNK10094	Carbon Tank 2	Rehab Re-coat	\$ 25,000		WPL1000818	93231099	6169										
19	E10092	PWT_17MIX10092	Carbon Tank Mixer #1	Overhaul mixer	\$ 12,000		WPL1000819	93231099	6626										
20	E10095	PWT_17MIX10095	Carbon Tank Mixer #2	Overhaul mixer	\$ 12,000		WPL1000820	93231099	6626										
21	E10668	PWT_18INS10668	Caustic Pump Control Panel POHPCP	Replace panel	\$ 33,000	Replace components only	WPL1000821	93231099	6626		18	18	9				6		
22	E10666	PWT_18INS10666	Caustic Tank Control Panel POHTCP	Replace panel	\$ 33,000		WPL1000822	93231099	6626		18	18					6		
23	E10111	PWT_18MIS10111	Caustic Tank Heater	Replace HVAC	\$ 2,250		WPL1000823	93231099	6626	18		2	2						
24	E10115	PWT_18INS54362	Caustic Tank Level Inst LIT-200	Replace instrument	\$ 2,500		WPL1000824	93231099	6626		5								
25			Electrical System Testing	Electrical testing	\$ 12,000		WPL1000825	93231099	6626			180	9				50		
26	E10458	PWT_28STR10458	Entrance Doors	Replace PWTP PERMANGANATE FEED ROOM ENTRANCE DOORS	\$ 1,000	Facilities work	WPL1000826	93231099											
27	E10434	PWT_54INS10434	Filter 1 Turbidmeter	Replace I&C	\$ 3,750		WPL1000827	93231099	6626		5	2	2						
28	E10435	PWT_54INS10435	Filter 2 Turbidmeter	Replace I&C	\$ 3,750		WPL1000828	93231099	6626		5	2	2						
29	E10436	PWT_54INS10436	Filter 3 Turbidmeter	Replace I&C	\$ 3,750		WPL1000829	93231099	6626		5	2	2						
30	E10437	PWT_54INS10437	Filter 4 Turbidmeter	Replace I&C	\$ 3,750		WPL1000830	93231099	6626		5	2	2						
31	E10438	PWT_54INS10438	Filter 5 Turbidmeter	Replace I&C	\$ 3,750		WPL1000831	93231099	6626		5	2	2						
32	E10439	PWT_54INS10439	Filter 6 Turbidmeter	Replace I&C	\$ 3,750		WPL1000832	93231099	6626		5	2	2						
33	E10433	PWT_54INS10433	Finished Water Turbidimeter	Replace I&C	\$ 3,750		WPL1000833	93231099	6626		5	2	2						
34	E10460	PWT_28PIP10460	Fire Sprinkler System	Replace PWTP PERMANGANATE FEED ROOM FIRE SPRINKLER SYSTEM	\$ 2,000	Facilities work	WPL1000834	93231099											

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs
35	E10300	PWT_33MTR54343	Non Ionic Poly Mixer Motor 301	Replace Motor	\$ 750		WPL1000835	93231099	6626	5		2							
36	E10305	PWT_33MTR54344	Non Ionic Poly Mixer Motor 401	Replace Motor	\$ 750		WPL1000836	93231099	6626	5		2							
37	E10462	PWT_28ELC10462	Permanganate Outdoor Lighting	Replace	\$ 10,000		WPL1000837	93231099	6626			18							
38	E46731	PWT_26MIS46731	Ozone Generator Shell #1 (POZOG01)	Clean shell & dielectrics	\$ 20,000	To be combined with like work at other plants.	WPL1000838	93231099	6169			2							
39	E46732	PWT_26MIS46732	Ozone Generator Shell #2 (POZOG02)	Clean shell & dielectrics	\$ 20,000		WPL1000839	93231099	6169			2							
40	E46733	PWT_26MIS46733	Ozone Generator Shell #3 (POZOG03)	Clean shell & dielectrics	\$ 20,000		WPL1000840	93231099	6169			2							
41			Particle Counter Calibration		\$ 5,000	Setup at the same time as STWP	WPL1000841	93231099	6169										
42	E10555	PWT_32PMP10555	Phosphoric Acid Feed Pump	Replace pump	\$ 6,000	Order pump & motor together	WPL1000842	93231099	6626	9		2							
43	E10553	PWT_32MTR10553	Phosphoric Acid Feed Pump Motor	Replace Motor	\$ 750		WPL1000843	93231099	6626	9		2							
44	E10554	PWT_32EDR10554	Phosphoric Acid Feed Pump VFD	Replace VFD	\$ 3,000		WPL1000844	93231099	6626		5	2					5		
45	E10463	PWT_28STR10463	Roll Up Doors	Replace PWTP PERMANGANATE FEED ROOM ROLL UP DOORS	\$ 20,000	Facilities work	WPL1000845	93231099											
46	E10431	PWT_54INS10431	Settled Water Turbidimeter	Replace I&C	\$ 3,750		WPL1000846	93231099	6626		5	2	2						
47	E10174	PWT_74MCC10174	MCC-US in utility building	Replace	\$ 150,000	Work requires a plant shutdown. Small Cap Project.	WPL1001737	93231099	6626										
48	E10179	PWT_74MCC10179	MCC-UN in utility building	Replace	\$ 80,000		WPL1001738	93231099	6626										
49	E10177	PWT_74MCC10177	MCC-CS in ops. building	Replace	\$ 100,000		WPL1001739	93231099	6626										
			FY17 PWTP Sub-Total = \$ 356,042						Labor Totals	69	101	287	48	0	0	5	87	0	0
			FY17 PWTP Small Cap Sub-Total = \$ 605,000																
			FY 17 PWTP TOTAL = \$ 961,042																

Planned work items #9-20 pertain to the carbon system. A cost benefit analysis of this system at PWTP and SWTP is currently underway and may lead to a recommendation to maintain or decommission the assets in this system. If the accepted recommendation is to maintain the asset, PW work orders will be developed in Maximo for completion in FY17. If the accepted recommendation is to decommission the system, no PW work orders will be created and the assets will be decommissioned in Maximo.

Table 2. Riconada Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs
1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$12,000	Inspections to be combined with other plants in the same year	WPL1001741	93291099	6169	3			2		5	2			
2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$12,000		WPL1001742	93291099	6169	3			2		5	2			
3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$12,000		WPL1001743	93291099	6169	3			2		5	2			
4			Electrical System Testing	Electrical Testing	\$22,000		WPL1001744	93291099	6633			108	9				36		
5	E21044	RWT_57MTR21044	MAPS Unit 3 Motor (40HP)	Inspect and repair motor	\$6,500	Motor & Pump bid together. Contract work out.	WPL1001745	93764004	6626			9	2						
6	E21039	RWT_57PMP21039	MAPS Unit 3 Pump	Rebuild pump	\$20,000		WPL1001746	93764004	6626	108			9	12		5		8	
7	E45338	RWT_57MTR45338	MAPS Unit 4 Motor (40HP)	Inspect and repair motor	\$6,500		WPL1001747	93764004	6626			9	2						
8	E45337	RWT_57PMP45337	MAPS Unit 4 Pump	Rebuild pump	\$20,000		WPL1001748	93764004	6626	108			9	12		5		8	
9	E52074	RWT_74ELC52074	Raw Water UPS	Replace batteries	\$2,633		WPL1001749	93291099	6626			18	9						
10	E52073	RWT_74ELC52073	Treated Water UPS	Replace batteries	\$2,633		WPL1001750	93291099	6626			18	9						
11	E50744	RWT_32TNK50744	Phosphoric Acid Tank #1	Clean, inspect and paint	\$13,000	Inspections to be combined with other plants in the same year	WPL1001751	93291099	6169	2			2		6	2			
12	E50745	RWT_32TNK50745	Phosphoric Acid Tank #2	Clean, inspect and paint	\$13,000		WPL1001754	93291099	6169	2			2		6	2			
			FY 17 RWTP Sub-Total =		\$89,266				Labor Totals	229	0	162	59	24	27	20	36	16	0
			FY17 RWTP Small Cap Sub-Total =		\$53,00														
			FY17 RWTP TOTAL =		\$142,266														

Table 3. Santa Teresa Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs
										Hrs	Hrs	Hrs	Hrs						
1	E30003	SWT_15TNK30003	Alum Tank 2 - T5 Ferric Chloride	Inspect & clean 004	\$14,000	Inspections to be combined with other plants in same year	WPL1001755	93281099	6169	2			2		7	5		72	
2	E30056	SWT_16INS30056	Ammonia Leak Detector	Replace STWTP AMMONIA LEAK DETECTOR 2875 2014	\$5,000		WPL1001756	93281099	6626		18		2						
3	E45066	SWT_24INS45066	Ambient O2 Analyzer (AIT-717)	Replace O2 analyzer 001	\$5,000		WPL1001757	93281099	6626		27		1						
4	E45084	SWT_24INS45084	Ambient O2 Analyzer (AIT-727-West)	Replace O2 analyzer 001	\$5,000		WPL1001758	93281099	6626		27		1						
5	E45085	SWT_24INS45085	Ambient O2 Analyzer (AIT-726-West)	Replace O2 analyzer 001	\$5,000		WPL1001759	93281099	6626		27		1						
6	E45053	SWT_26INS45053	OGB Ambient O2 (AIT-716-OZS)	Replace O2 analyzer 001	\$5,000		WPL1001760	93281099	6626		27		1						
7	E30620	SWT_32PMP30620	Zinc Phosphate Pump 2	Replace Pump 001	\$6,000		WPL1001761	93281099	6626	5		2	3						
8	E54392	SWT_33PMP54392	Nonionic Poly Blend Pump #2	Replace Pump 001	\$9,000		WPL1001762	93281099	6626	9		2	3						
9	E30238	SWT_49VOP30238	Filter 4E Washwater Vlv V-F-51 Act	Replace Operator 001	\$9,000		WPL1001763	93281099	6626	12		2	2						
10	E30248	SWT_49VOP30248	Filter 5E Washwater Vlv V-F-52 Act	Replace Operator 001	\$9,000		WPL1001764	93281099	6626	12		2	2						
11	E30258	SWT_49VOP30258	Filter 6E Washwater Vlv V-F-53 Act	Replace Operator 001	\$9,000		WPL1001765	93281099	6626	12		2	2						
12	E30415	SWT_52CMP30415	Plant Water Tank Air Compressor	Replace Blower 001	\$6,000	Purchase compressor & motor together	WPL1001766	93281099	6626	36			9			2			
13	E30416	SWT_52MTR30416	Plant Water Tank Air Comp Motor	Replace Motor 001			WPL1001767	93281099	6626			2					2		

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
14	E30148	SWT_25MTR30148	OCL Meter Pump 1 Motor	Replace STWTP OCL METER PUMP MOTOR #1 2977 2036	\$750		WPL1001768	93281099	6626										
15	E30154	SWT_25MTR30154	OCL Meter Pump 3 Motor	Replace STWTP OCL METER PUMP MOTOR #3 2979 2016	\$750		WPL1001769	93281099	6626										
16	E30151	SWT_25MTR30151	OCL Meter Pump 2 Motor	Replace STWTP OCL METER PUMP MOTOR #2 2978 2016	\$750		WPL1001772	93281099	6626										
17	E30147	SWT_25PMP30147	OCL Meter Pump 1	Replace STWTP OCL METER PUMP #1 2965 2016	\$7,500		WPL1001771	93281099	6626										
18	E30150	SWT_25PMP30150	OCL Meter Pump 2	Replace STWTP OCL METER PUMP #2 2966 2016	\$7,500		WPL1001773	93281099	6626										
19	E30153	SWT_25PMP30153	OCL Meter Pump 3	Replace STWTP OCL METER PUMP #3 2967 2016	\$7,500		WPL1001774	93281099	6626										
20	E30183	SWT_74MCC30183	MCC - West Filter Deck DP-2A	Replace STWTP OPERATIONS BLDG - ELECTRICAL LINEUP MCC-1M 3001 2019	\$110,000	Work requires a plant shutdown. Small Cap Project.	WPL1001775	93764004	6626			54							
21	E30188	SWT_74MCC30188	MCC - East Filter Deck DP2	Replace STWTP MOTOR CONTROL CENTER EAST FILTER GALLERY MCC-DP2 3006 2019	\$110,000		WPL1001776	93764004	6626			54							
22	E30196	SWT_74MCC30196	MCC - West Filter Deck DP-1A	Replace STWTP MOTOR CONTROL CENTER WEST FILTER GALLERY MCC-DP1 3014 2019	\$110,000		WPL1001777	93764004	6626			54							
23	E30152	SWT_25EDR30152	OCL Meter Pump 2 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #2	\$3,000		WPL1001778	93281099	6626		9	9	1						
24	E30149	SWT_25EDR30149	OCL Meter Pump 1 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #1 2971 2026	\$3,000		WPL1001779	93281099	6626		9	9	1						

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
25	E30155	SWT_25EDR30155	OCL Meter Pump 3 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #3 2973 2011	\$3,000		WPL1001780	93281099	6626		9	9	1						
26	E30158	SWT_25EDR30158	OCL Meter Pump 4 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #4 2974 2011	\$3,000		WPL1001781	93281099	6626		9	9	1						
27	E30161	SWT_25EDR30161	OCL Meter Pump 5 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #5 2975 2011	\$3,000		WPL1001782	93281099	6626		9	9	1						
28	E30469	SWT_25EDR30469	OCL Meter Pump 6 VFD	Replace VFD 001	\$3,000		WPL1001783	93281099	6626		9	9	1						
									Labor Hours	88	180	228	35	0	7	7	2	72	0
					FY17 STWTP Sub-Total = \$129,750														
					FY STWTP Small Cap Sub-Total = \$330,000														
					FY STWTP TOTAL = \$459,750														

Table 4. Silicon Valley Advanced Water Purification Center Planned Work Project

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000		WPL1001784	91281008	6169
2	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000		WPL1001785	91281008	6169
3	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000		WPL1001786	91281008	6633
4	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing			WPL1001787	91281008	6633
5	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing			WPL1001788	91281008	6633
6	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing			WPL1001789	91281008	6633
7	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing			WPL1001790	91281008	6633
8	E52602	SVA_60ELC52602	Transformer	Electrical Testing			WPL1001793	91281008	6633
9	E73432	SVA_65ELC73432	Transformer	Electrical Testing			WPL1001794	91281008	6633
10	E73300	SVA_64ELC73300	Transformer	Electrical Testing			WPL1001795	91281008	6633
11	E53082	SVA_16ELC53082	Transformer	Electrical Testing			WPL1001796	91281008	6633
FY17 SVAWPC Sub-Total =					\$54,000				
FY17 SVAWPC Small Cap Sub-Total =					\$0				
FY17 SVAWPC TOTAL =					\$54,000				

Table 5. Treated Water Transmission and Distribution Planned Work Projects

All proposed FY2017 Treated Water Transmission and Distribution Planned Work have been rescheduled to future years.

Table 6. Raw Water Transmission and Distribution Planned Work Projects

All proposed FY2017 Raw Water Transmission and Distribution Planned Work have been rescheduled for FY2018.

Table 7. Gilroy Reclamation Line Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E66534	GRL_04PIP66534	Gilroy Reclamation Line - 12"	Inspection, video 001	\$198,500		201703028	92761008	6165
					FY17 GRL Sub-Total = \$198,500				
					FY17 GRL Small Cap Sub-Total = \$0				
					FY17 GRL TOTAL = \$198,500				

Table 8. Vasona Pumping Plant Facility Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1				Biennial Electrical Testing	\$8,000		201703030	92261099	6633
2			Upgrade control systems including PLC, RTU and control cabinets	Upgrade control systems including PLC, RTU and control cabinets	\$30,000		201703032	92261099	6633
					FY17 VPP Sub-Total = \$38,000				
					FY17 VPP Small Cap Sub-Total = \$0				
					FY17 VPP TOTAL = \$38,000				

Table 9. Anderson Hydroelectric Facility Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1			Electrical Testing	Electrical testing	\$12,000		201703033		
2	E41006	AHY_01ELC41006	Anderson Hydro UPS	Replace UPS batteries	\$1,000		201703035		
					FY17 AHY Sub-Total = \$13,000				
					FY17 AHY Small Cap Sub-Total = \$0				
					FY17 AHY TOTAL = \$13,000				

Table 10. San Felipe Division Planned Work Projects

Item	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	
1	San Felipe Division Reach 1	PPP	E41473	PPP_75PMP41473	Fire Pump	Replace PACHECO PUMP FIRE PUMP 2112 2017	\$50,000		201703093	91211099	6219
2		PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 007	\$40,000		201703094	91211099	6229
3		PPP			Electrical Testing	Electrical testing 004	\$12,000		201703095	91211099	6633
		Pump Unit 2 Rebuild									
4		PPP	E42003	PPP_02MTR42003	Pump Unit 2 Motor	Refurbish motor windings and bearings	\$40,000	Purchase from 1 vendor (UNICO) contractor	201703096	91214010	6219
5		PPP	E42004	PPP_02PMP42004	Pump Unit 2 Pump	Rebuild pump with new coupling & nuts. Rebuild pump and rehab shafting.	\$700,000		201703097		
6		PPP	E42005	PPP_02VLV42005	Pump Unit 2 Pump Alr Release Valve	Replace PACHECO PUMP UNIT #2 PUMP AIR RELEASE VALVE 2135 2012	\$600		201703099		
7		PPP	E42007	PPP_02VOP42007	Pump Unit 2 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #2 PUMP DISCH VALVE HYD OP	\$1,500		201703100		
8		PPP	E42006	PPP_02VLV42006	Pump Unit 2 Pump Discharge Valve	Replace bushings	\$5,000		201703101		
		Pump Unit 4 Rebuild									
9		PPP	E42029	PPP_02MTR42029	Pump Unit 4 Motor	Refurbish motor windings and bearings	\$40,000	Purchase from 1 vendor (UNICO) contractor	201703102	91214010	6219
10		PPP	E42030	PPP_02PMP42030	Pump Unit 4 Pump	Rebuild pump with new couplings & nuts. Rebuild pump and shafting	\$700,000		201703103		
11		PPP	E42031	PPP_02VLV42031	Pump Unit 4 Pump Alr Release Valve	Replace PACHECO PUMP UNIT #4 PUMP AIR RELEASE VALVE 2147 2012	\$600		201703104		
12		PPP	E42033	PPP_02VOP42033	Pump Unit 4 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #4 PUMP DISCH VALVE HYD OP	\$1,500		201703105		
13		PPP	E42032	PPP_02VLV42032	Pump Unit 4 Pump Discharge Valve	Replace bushings	\$5,000		201703107		
14		PPP				Installation of fall protection on the 60-ton overhead crane (fixed access ladder is recommended).	\$25,000	Per USBR 2008-2-I; photos S-1 & S-2	201703108	91211099	6229
15		PPP				Clean the rusted valve in the utility room next to the office room		Per USBR 2014-3-J, pg 10; photo S-13	201703109	91211099	6229
16		PPP				Repair the metal guard railing posts on top of the CMP drainage culver (inlet & outlet) located near the main entrance to the facility.		Per USBR 2014-3-R; Photos S-21 & S-22	201703110	91211099	6229
17		PPP				The PRV's have been tested on all pressure vessels and new ones have been order for installation		Per USBR 2014-2-F	201703111	91211099	6229
18		PPP				Clean and recoat the guard valve casings, particularly around the bonnet flange.		Per USBR; 2014-3-E	201703112	91211099	6229
19		PPP				The hydraulic actuator oil need to be replaced		Per USBR 2014-3-F	201703114	91211099	6229
20	PPP				Replace the Cathodic protection wiring box located at the top of the tunnel intake structure.		Per USBR 2014-3-P; Photo S-25	201703115	91211099	6229	
21	PPP				Electrical equipment needs to be adjusted to allow for attaching personnel protective grounds.	\$5,000	Per USBR 2014-2-C	201703116	91211099	6229	
22	SFD R2	SCC				Seal cracks at the SC tunnel	\$700,000	Per Brown & Caldwell	201703117	91224010	6219
23	SFD R3	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 007	\$40,000		201703118	91224010	6219
24	SFD R3	CPP	E42509	CVY_06VOP42509	Discharge Valve Op	Replace COYOTE PUMP DISCHARGE VALVE OPERATOR 4861 2017	\$9,000		201703130	91231099	6219

Item	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
25	CPP	E42516	CDL_06FLO42516	Discharge Line - Flowmeter	Replace COYOTE DISCHARGE LINE - FLOWMETER 2075 2017	\$45,000			91231099	6626
26		E42492	CPP_06VOP42492	Pump Iso Vlv Str Cont Vlv 1 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #1 2063 2017	\$6,750			91231099	6219
27		E42494	CPP_06VOP42494	Pump Iso Vlv Str Cont Vlv 2 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #2 2065 2017	\$6,750			91231099	6219
28		E42496	CPP_06VOP42496	Pump Iso Vlv Str Cont Vlv 3 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #3 2066 2017	\$6,750			91231099	6219
29		E42498	CPP_06VOP42498	Pump Iso Vlv Str Cont Vlv 4 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #4 2067 2017	\$6,750			91231099	6219
30		E42500	CPP_06VOP42500	Pump Iso Vlv Str Main Line Vlv - Op	Replace COYOTE PUMP ISOLATION VALVE MAIN LINE VALVE OPERATOR 2069 2017	\$6,750			91231099	6216
31		CPP		Electrical Testing	Electrical testing 004	\$9,000			91231099	6633
32		CPP	E42447	CPP Unit #4 Pump Motor ASD	Maintenance and testing (MT)	\$5,000	Performed by independent testing company	201703140		
33		CPP	E42454	CPP Unit #5 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703141		
34		CPP	E42461	CPP Unit #6 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703142		
35		CPP	E42433	CPP Unit #2 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703144		
36		CPP	E42426	CPP Unit #1 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703145		
37		CPP	E42440	CPP Unit #3 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703147		
38		CPP			Relocate or repair the leaking water problem that is going into the electrical conduit located in the vault.	\$30,000	Per USBR 2014-2-H		91231099	6169
39		CPP			Mitigate all corrosion in the isolation valve structure, investigating the cause of the corrosion at the bolt on the flange to the 43-inch BFV.		Per USBR 2014-2-O		91231099	6169
40		CPP			Retire all older versions of the SOP and replace with the newer official SOP; provide Reclamation with a copy of new SOP		Per USBR 2014-2-A		91231099	6169
41		CPP			Replace road sign warning of the overhead power lines on locations where traffic passes under the power lines		Per USBR 2014-2-I		91231099	6169

FY17 SFD R1 Sub-Total =	\$132,000
FY17 SFD R1 Small Cap Sub-Total =	\$1,494,200
FY17 SFD R1 TOTAL =	\$1,626,200

FY17 SFD R2 Sub-Total =	\$ 0
FY17 SFD R2 Small Cap Sub-Total =	\$700,000
FY17 SFD R2 TOTAL =	\$ 700,000

FY17 SFD R3 Sub-Total =	\$ 196,750
FY17 SFD R3 Small Cap Sub-Total =	\$0
FY17 SFD R3 TOTAL =	\$ 196,750

FY17 San Felipe Division TOTAL =	\$2,522,950
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Table 11. Water Supply Management System (Maintenance) Planned Work Projects

Item	Asset #	Asset Name	Type	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000		201703036	92761010	
2	E65095	Helmsley Pipeline	Inspection	Video inspection	\$4,800	Contractor	201703042	92761010	
3	E65095	Helmsley Pipeline	Replace	Valve replacement	\$21,430		201703043	92761010	
4	E65159	City Park Pond	Replace	Replace drain valve	\$21,430		201703044	92761010	
5	E65217	Alamitos Diversion Facility	Repair/replace	Replace dam. Replace valve from creek to pond. Minor maintenance	\$16,400		201703045	92761010	
6	E65246	Alamitos Ponds	Replace	Install new replacement flowmeter	\$15,000		201703046	92761010	
7	E65266	Alamitos Pipeline	Inspection	Video inspection	\$1,820	Contractor	201703047	92761010	
8	E65266	Alamitos Pipeline	Repair/replace	Replace inlet valve from pond #11. Address root issues	\$21,500		201703048	92761010	
9	E65324	Kooser Pipeline	Inspection	Video inspection	\$4,000	Contractor	201703049	92761010	
10	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000		201703050	92761010	
11	E65346	Los Capitancillos Ponds	Replace	Replace valve and pipe #8-9	\$41,430		201703051	92761010	
12	E65396	Almaden-Calero Canal	Inspection	Video inspection of Siphons #1, #2 and #3	\$6,150	Contractor	201703052	92761010	
13	E65396	Almaden-Calero Canal	Repair	Perform repairs as needed	\$25,000		201703053	92761010	
14	E10777	Budd Avenue Ponds	Repair/replace	Replace flowmeter. Embankment repair	\$135,000		201703054	92761010	
15	E65526	Page Ditch	Inspection	Video inspection of pipe reaches	\$10,600	Contractor	201703055	92761010	
16	E65526	Page Ditch	Repair/replace	Replace Page Ditch Desilt Basin drain valve. Perform repairs.	\$25,000		201703056	92761010	
17	E10792	Sunnyoaks Ponds	Repair/replace	Replace all valves. Erosion repairs	\$64,290		201703063	92761010	
18	E65683	Kirk Diversion Facility	Replace	Replace Page local valve and Kirk local valve	\$42,860		201703064	92761010	
19	E65746	Kirk Dist. System - Vasona Chemical Storage	Replace	Replace storage tanks	\$30,000		201703065	92761010	
20	E65860	Coyote Canal	Replace	Replace inlet valves (L and R) and Blow off valves	\$107,150		201703068	92761010	
21	E65954	Coyote-Alamitos Canal	Inspection	Video inspection and roots removal	\$25,000		201703069	92761010	
22	E65954	Coyote-Alamitos Canal	Repair	As needed repairs / Sediment / Vegetation removal	\$79,000		201703070	92761010	
23	E66105	Ford Road Percolation Facility	Repair	Remove old fish ladder channels	\$15,000		201703073	92761010	
24	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000		201703075	92761010	
25	E66216	Madrone Pipeline	Inspection	Video inspection	\$9,000	Inspect in 2017 or 2018; contractor	201703076	92761010	
26	E66216	Madrone Pipeline	Repair	Address any root issues	\$25,000		201703078	92761010	
27	E66221	Madrone Channel Percolation Facility	Repair	Facility Repairs	\$25,000		201703079	92761010	
28	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000		201703080	92761010	
					FY17 WS Maint. Sub-Total = \$1,041,860				
					FY17 WS Maint. Small Cap Sub-Total = \$0				
					FY17 WS Maint. TOTAL = \$1,041,860				

Table 12. Water Supply Management Systems (Operations) Planned Work Projects

Item	Asset #	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$55,580		201703083	92761009	
2	E10791	Page Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$139,915		201703085	92761009	
3	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$154,153		201703086	92761009	
4	E66166	San Pedro Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$298,869		201703087	92761009	
5	E65526	Page Ditch	Pond grooming/Cleaning/Capacity restoration projects	\$100,000	Drain and clean	201703088	92761009	
6	E65541	Page Ditch Desilting Basin	Pond grooming/Cleaning/Capacity restoration projects	\$80,000		201703090	92761009	
				FY17 WS Ops. Sub-Total = \$828,517				
				FY17 WS Ops. Small Cap Sub-Total = \$0				
				FY WS Ops. TOTAL = \$828,517				

IV. Fiscal Year 2018-21 Planned Work Summary

This section provides a high level summary of the planned work (PW) activities for year two through five of the five-year MWP; the detailed project lists can be found in Appendix A. Figures 1 through 12 summarize the projected PW, small and large capital projects to be completed in FY 2018-2021. The project costs provided in the figures include equipment and material costs, but do not include labor costs.

Expanding the MWP horizon from a single year to five-years allows staff to review the work load by year and see trends and peaks either in work load, asset class, or by facility. This also provides staff with an opportunity to look for efficiencies and balance the work between the years. Future MWP work lists will be based on the new Asset Management Planning Tool (AMPT), which contains an updated asset registry list in addition to equipment, material and labor costs. Therefore, costs will change in the next MWP report as the tool includes comprehensive data on District assets.

Figure 1. Penitencia Water Treatment Plan (PWTP) FY18-21 Projected Planned Work

PWTP FY18-21 Projected Planned Work Total Value = \$3.5M

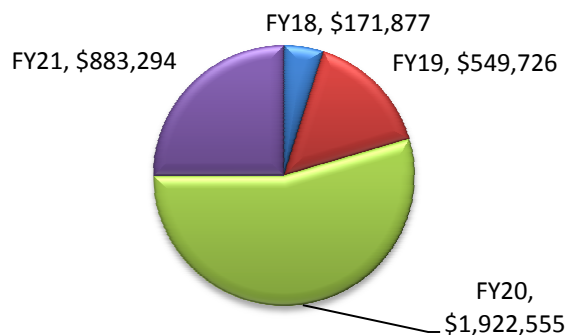


Figure 2. Rinconada Water Treatment Plant (RWTP) FY18-21 Projected Planned Work

RWTP FY18-21 Projected Planned Work Total Value = \$873K

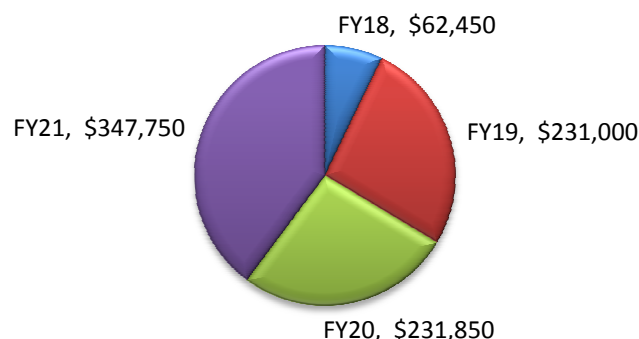


Figure 3. Santa Teresa Water Treatment Plant (STWTP) FY18-21 Projected Planned Work

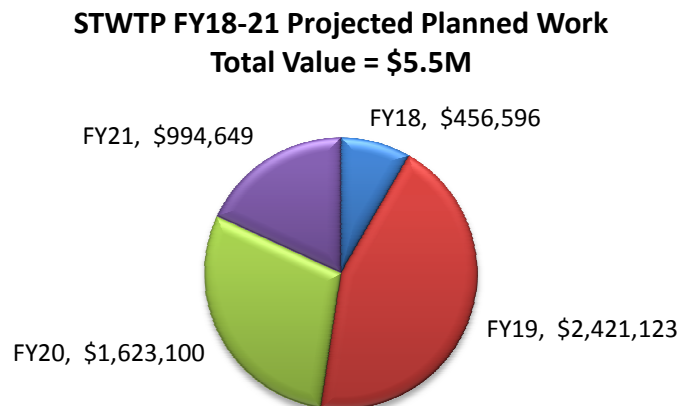


Figure 4. Silicon Valley Advanced Water Purification Center (SVAWPC) FY18-21 Projected Planned Work

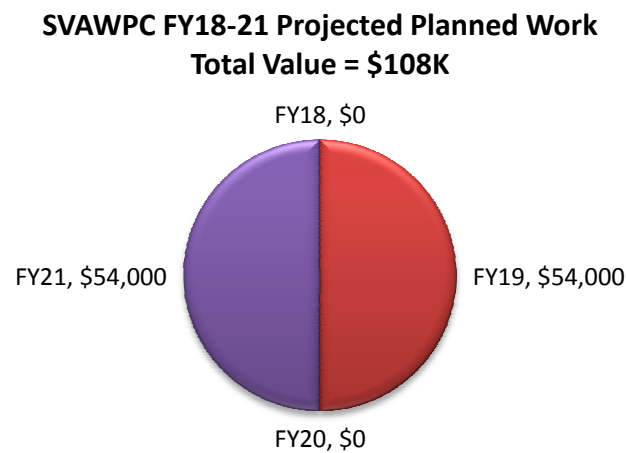


Figure 5. Treated Water Transmission and Distribution FY18-21 Planned Work Projects

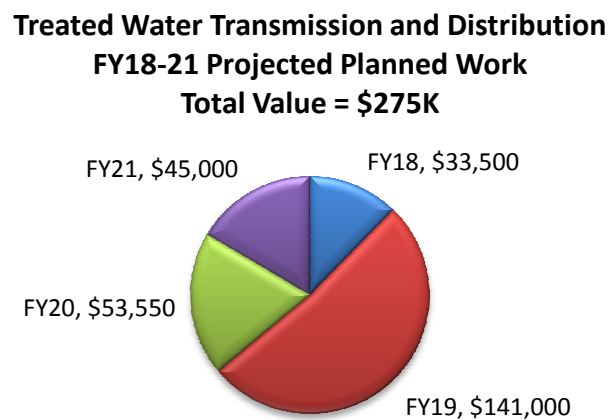


Figure 6. Raw Water Transmission and Distribution FY18-21 Planned Work Projects

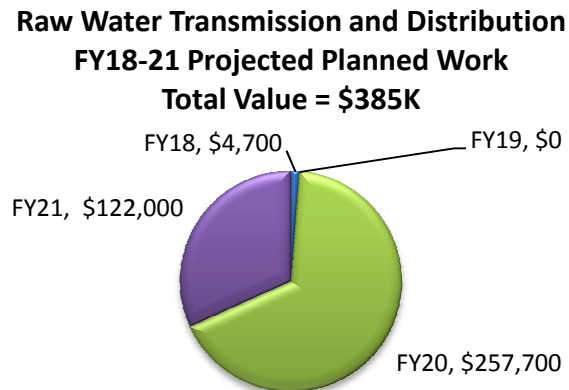


Figure 7. Gilroy Reclamation Line (GRL) FY18-21 Planned Work Projects

There is no planned work for the GRL during years FY18-21.

Figure 8. Vasona Pumping Plant (CPP) Facility FY18-21 Planned Work Projects

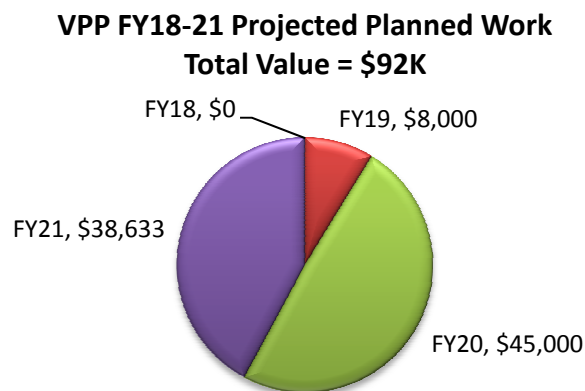


Figure 9. Anderson Hydroelectric (AHY) Facility FY18-21 Planned Work Projects

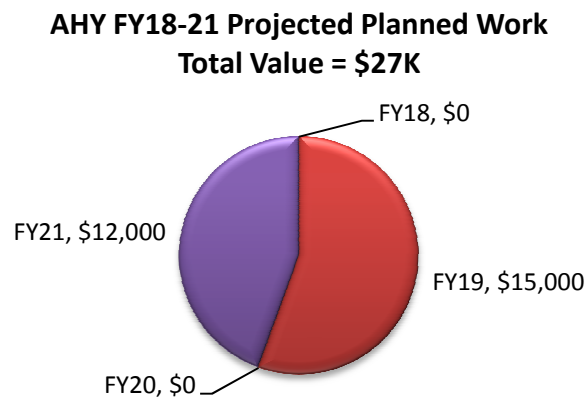


Figure 10. San Felipe Division (SFD) FY18-21 Planned Work Projects

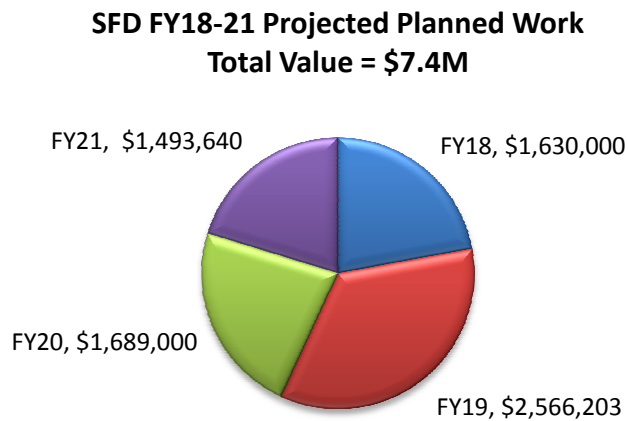


Figure 11. Water Supply Management System (Maintenance) FY18-21 Planned Work Projects

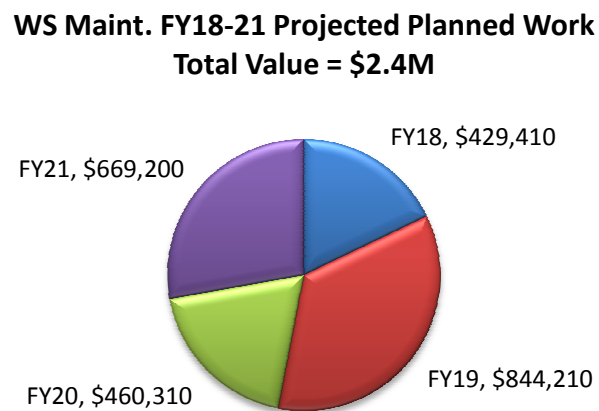
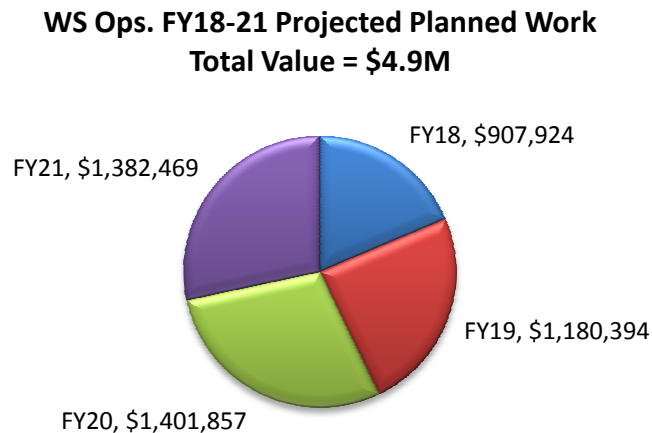


Figure 12. Water Supply Management System (Operations) FY18-21 Planned Work Projects



V. Capital Improvement Plan (CIP) Project Recommendations

The MWP recommends some activities for execution as formal capital projects. As the capabilities of the District's asset management program improves with new planning models and software, the identification of future capital projects to address existing asset failure modes will become a critical output of the program.

Capital projects represent major work efforts that are beyond the capabilities of the maintenance units to perform, requiring relatively large budget commitments (greater than \$50K), technical complexity, or are likely to require multi-year planning and extensive design efforts.

During the FY17 MWP development process 2 infrastructure projects were recommended by staff and management for consideration and possible inclusion into the Capital Improvement Program (CIP). The MWP recommends the following individual capital projects for FY 2017:

- **Pacheco Conduit (PAC) Rehabilitation Project:** The project covers the inspection, rehabilitation, and repair of the 7.9 miles of 120" diameter PAC (raw water transmission). The project includes the following:
 - Perform visual, sounding, and electromagnetic inspections
 - Replacing two sectionalizing valves
 - Modifying bypass piping at valves and installing supports
 - Replacing pipeline appurtenance assemblies and piping
 - Performing internal maintenance and repair activities, as required
 - Performing internal pipeline structural lining, as required
 - Installing a new line valve to facilitate future maintenance
 - Installing a new pump system to facilitate future pipeline dewatering
 - Upgrading facilities to allow future unmanned inspections
 - Performing transient flow analysis
 - Upgrade Cathodic Protection
- **Cathodic Protection (CP):** The project covers the installation, rehabilitation, or replacement of rectifiers with RMUs and CP signage throughout the San Felipe Division.

In addition, staff and management recommended funding and providing resources for the following two projects, which were submitted to the Capital Improvement Program in previous years:

- **Coyote Pumping Plant ASD:** To improve plant operation and reliability while reducing operation and maintenance cost, this project would replace the existing adjustable speed drives (ASDs) and associated electrical power distribution equipment at the Coyote Pumping Plant. Many of the assets that will be replaced in the ASD project are due for replacement in the next few years. To incorporate lessons learned from the Pacheco Pumping Plant ASD project, it is recommended that the 4160 volt DZ1A and DZ2A unit-sub assemblies, 4160 volt overhead buss way, and new switchgear(s) to replace existing motor control equipment (MCEs) be incorporated into this project.
- **PWT Residuals Management:** To extend the useful life of the treatment plant, improve efficiency, minimize risk of discharge violations, and improve the reliability of the PWT plant. This project would perform an analysis, plan, and construct modifications to the PWT residuals management process.

Small Capital Projects recommended include:

- PWT - Conveyor Belt Replacement
- PWT - MCC Replacement
- SWT - MCC Replacement
- PPP - Rebuild pump unit #2 and #4

The following pipeline rehabilitation and repair projects listed are part of the five-year Pipeline Rehabilitation Project (CIP), which includes the following facility for FY2017:

- Santa Clara Tunnel (SCT) – inspection and lining (raw water transmission)

VI. Execution and Measuring Performance/Completion of the AMWP

Actual scheduling, execution, and reporting on the projects in the plan are the responsibility of the units assigned the work in the Maximo work order system. The Asset Management Unit prepares an Annual Maintenance Work Plan Review Report at the close of each fiscal year to assess what work was completed. In order to prepare an accurate review report, planned work (PW) must be tracked accurately.

More importantly, it is critical to track PW because if work is not completed as planned, risk of asset failure increases. Tracking PW ensures that projects that could not be completed are rescheduled to a future year. Tracking PW also ensures the District is capturing accurate asset life-cycle costs. In order to enable accurate PW tracking, the Asset Management Unit provides the following recommendations:

- Ensure that staff uses the work order numbers provided in this report for each project. If additional work orders are needed to complete a single work list item, a child work order should be established in Maximo and linked to the work order listed in this plan to enable complete and accurate cost tracking. This includes work performed by watershed field operations units under the Access Valley Water (AVW) tool, by referencing the AVW tracking number within the work order number listed in this plan.
- Ensure staff appropriately changes work order status in Maximo, particularly upon completion of work. During development of the FY15 Annual Maintenance Work Plan Review Report, staff found that several projects had been completed, but work orders had not been closed. Completion percentages for planned work will not be accurate if the correct status is not provided in Maximo.
- Work list items that involve the replacement of an asset (piece of equipment) must also include processing the change in Maximo. This is accomplished using the new 'Asset Replaced' feature in Maximo. The Asset Management Unit then downloads the "replacement" list from Maximo and ensures the old asset was properly decommissioned and the new asset has been properly added to Maximo and ICAM/AMPT.

VII. Financial Forecasts

Future forecasts for asset renewal and replacement work from ICAM are provided in the figures below. The ICAM-generated funding demand is related to the level of effort and the magnitude of future MWP work. The dark blue portions of the graphics represent operating budget demand. The light blue portions represent formal capital work. Where future work is identified

that has a high likelihood of being executed under a formal Capital Improvement Project (CIP) due to scope, required expertise, or cost; the funding demand has been included in ICAM and classified as “capital” in the database. In all probability, the magnitude of those capital investments will be several times the magnitude shown in the charts as the charts generally identify only the equipment/asset costs, and not the planning, design, and engineering costs associated with formal capital projects.

To provide greater clarity of the District’s financial commitments to maintenance activities, the funding demand for a single year, five-years, and 15 years is provided in the figures below. The first figure of the series shows the funding demand for all the assets included in ICAM. The following three figures of the series show a subset of funding demand for different asset types: water treatment plants, San Felipe Division, and the pipelines. In future years these charts will come from the new AMPT model.

A. One Year

Figure 13. Water Utility Operations Division Funding Demand²

Funding Demand for Water Utility Operations Division Scenario: Do Everything

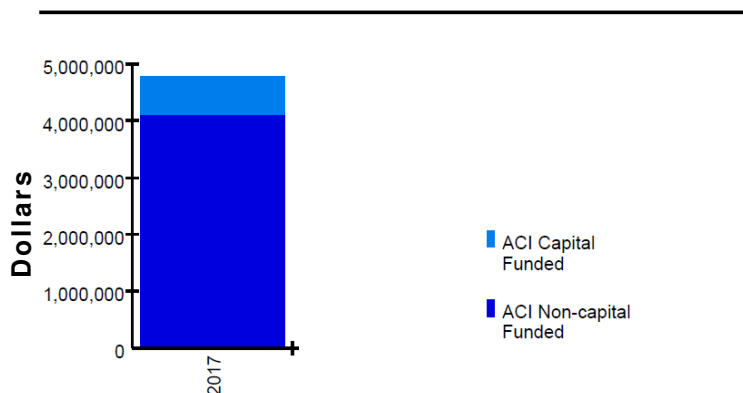


Figure 14. Treatment Plant Funding Demand

Funding Demand for Treatment Plants Scenario: Do Everything

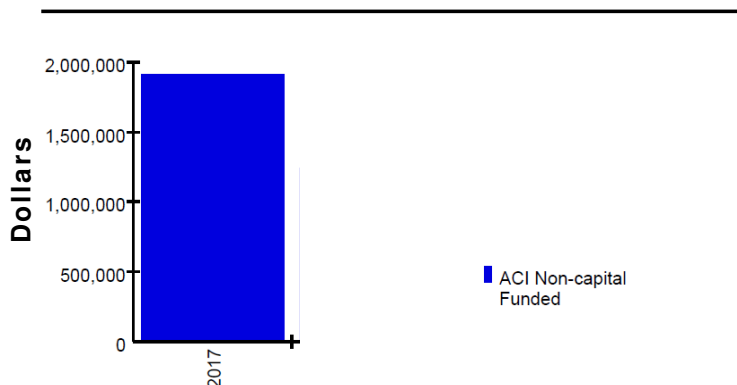


Figure 15. San Felipe Division Funding Demand

² This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plants.

Funding Demand for San Felipe Division Scenario: Do Everything

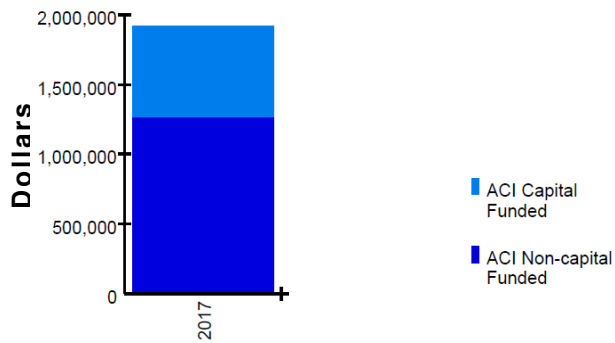
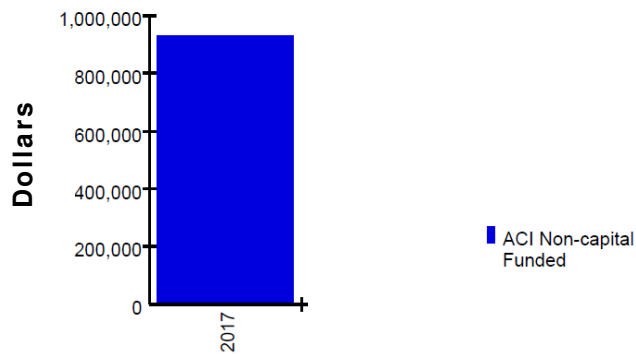


Figure 16. Pipeline Funding Demand

Funding Demand for Pipelines Scenario: Do Everything



B. Five-year

Figure 17. Water Utility Operations Division Funding Demand³

Funding Demand for Water Utility Operations Division Scenario: Do Everything

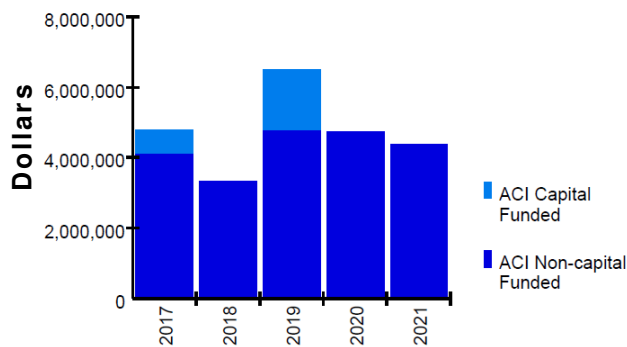


Figure 18. Treatment Plant Funding Demand

³ This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plans.

Funding Demand for Treatment Plants Scenario: Do Everything

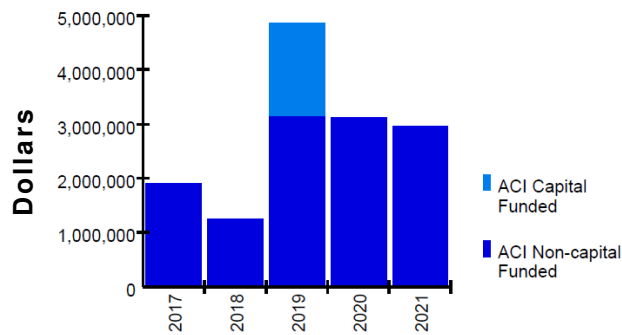


Figure 19. San Felipe Division Funding Demand

Funding Demand for San Felipe Division Scenario: Do Everything

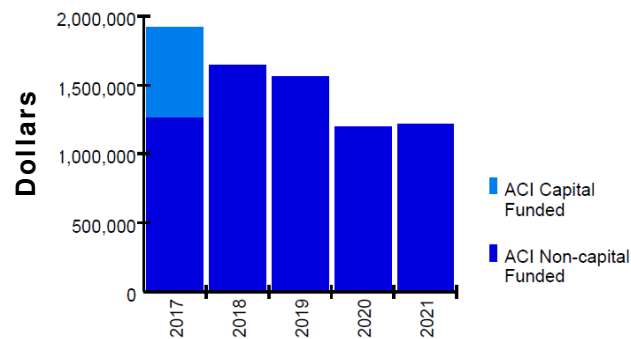
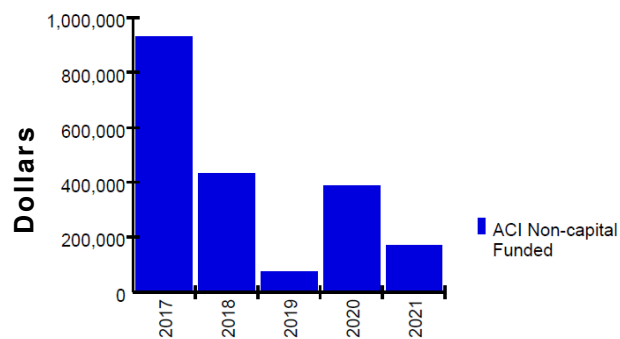


Figure 20. Pipeline Funding Demand

Funding Demand for Pipelines Scenario: Do Everything



C. 15 Year

Figure 21. Water Utility Operations Division Funding Demand⁴

Funding Demand for Water Utility Operations Division Scenario: Do Everything

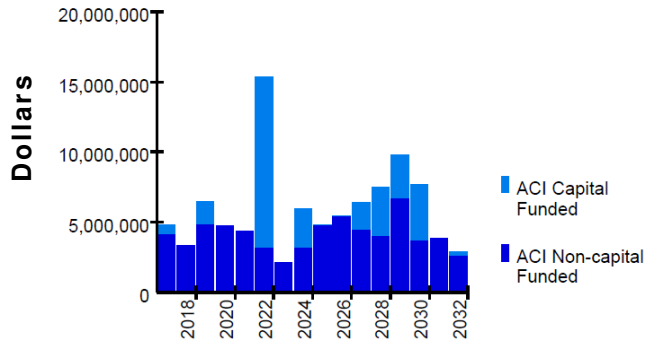


Figure 22. Treatment Plant Funding Demand

Funding Demand for Treatment Plants Scenario: Do Everything

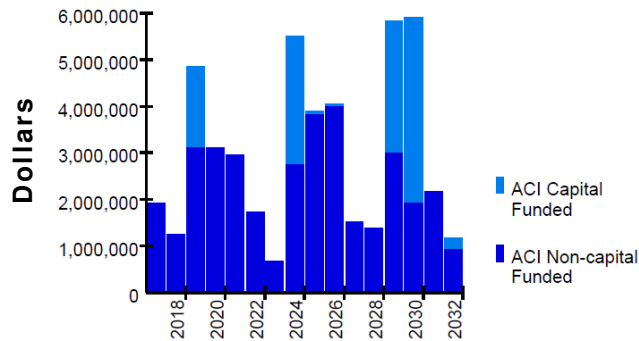
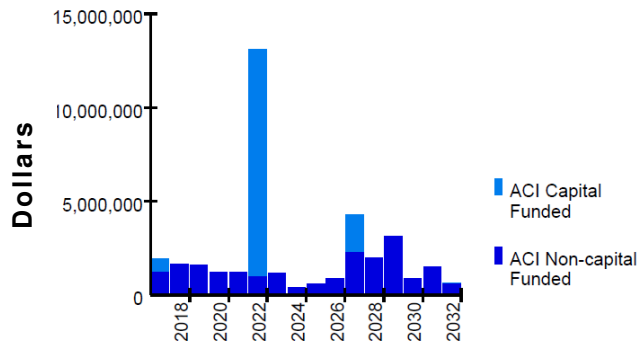


Figure 23. San Felipe Division Funding Demand

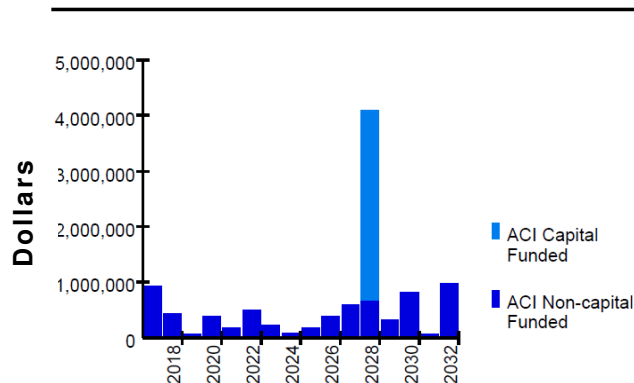
Funding Demand for San Felipe Division Scenario: Do Everything



⁴ This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plans.

Figure 24. Pipeline Funding Demand

Funding Demand for Pipelines Scenario: Do Everything



VIII. Modifications, Improvements, and Efficiencies

Based on experience gained through previous MWP development efforts, input from management and staff, and survey data; certain modifications and improvements to the MWP document and development process have been implemented as a means of continual improvement. Improvements and changes identified and recently implemented in the MWP are summarized below.

- The Annual Maintenance Work Plan (AMWP) has been relabeled the Maintenance Work Plan (MWP) which spans a five-year timeframe. This was at the request of management and staff in an effort to plan and schedule projects, look for efficiencies, and provide a better five-year forecast for project plans, the District budget, and the Capital Improvement Program (CIP). The work lists in the first year of the five-year rolling plan will be fixed, while future years may be adjusted based on changing conditions.
- The MWP planned work list has been restructured to include project numbers, account numbers, and work order numbers for each work item in order to facilitate reporting and fiscal accountability.
- Management and staff have requested starting the AMWP development process earlier in the year, prior to preparation of project plans and long term funding proposals. Now the process begins in January of each year in order to have the work lists prepared prior to the first pass budget in September of that same year.
- The Scope of the MWP has been expanded by the addition of the planned work projects on the recharge and raw water facilities (RRWF), which are overseen by the Water Supply Operations Planning and Analysis Unit (455) as well as the Silicon Valley Advanced Water Purification Center (SVAWPC), which is overseen by the North Water Treatment Operations Unit (565).
- Although the preventative maintenance (PM) work on the District's dams and reservoirs is ongoing and critical to their functioning, there is not an equivalent set of planned work projects performed at the dams that would be considered maintenance activities, and

therefore, candidates for inclusion in this report. The work that is planned for the dams is major capital work, and is outlined in the District's Capital Improvement Plan (CIP).

- In previous years, all work scheduled in the previous AMWP that had not been completed by the end of the fiscal year was carried forward on the work list as "work carried forward". Because this AMWP is being published prior to the end of the fiscal year, it does not include incomplete work, this information can be found in the annual review reports.
- During the budget review process, management requested increased detail and linkage of work items and cost estimates to account numbers within operating projects. In response, the FY 2010 through FY 2015 AMWP included Project Work Sheets in an effort to bring greater clarity to the budget development and review processes, and to provide supporting documentation on scope of work and rationale for the work activity. As improvements have been incorporated into the planned work list over time, the Project Work Sheets and planned work lists contained duplicate information. Therefore, upon consultation and with the support of the operations, maintenance, and engineering units the Project Work Sheets have been discontinued beginning with the FY 2016 AMWP.

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APPENDIX A: FY 2018-2021 Planned Work Lists

Table 1 through Table 12 summarizes the planned work and small capital projects to be completed in FY18 - 21. Small capital projects are differentiated from planned work within these tables by being represented in a **dark red** font color. Large capital projects are listed in Section V. The project costs provided in the tables include services and supply costs, but do not include labor costs. Work order numbers are provided, and are used for tracking all work associated with the projects as explained in Section V.

Table 1. Penitencia Water Treatment Plant Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E10033	PWT_16PMP10033	Aqua NH4 Meter Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2018	E10034	PWT_16MTR10034	Aqua NH4 Meter Pump Motor 1	Replace Motor	\$ 750	
2018	E10035	PWT_16PMP10035	Aqua NH4 Meter Pump 2	Replace Pump	\$ 7,500	
2018	E10036	PWT_16MTR10036	Aqua NH4 Meter Pump Motor 2	Replace Motor	\$ 750	
2018	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect tank thickness	\$ 3,000	Contractor Work
2018	E50428	PWT_47INS50428	Blend Tank Turbidity Meter	Replace instrument	\$ 3,000	
2018	E10056	PWT_47MIX10056	BP Blend Tank Mixer	Rehab Rebuild Gearbox	\$ 3,377	Replace vs. rehab
2018	E10429	PWT_54INS10429	Combined Filtered Water pH Meter	Replace I&C	\$ 2,700	
2018	E10432	PWT_54INS10432	Combined Water Turbidimeter	Replace I&C	\$ 3,750	
2018	E10426	PWT_54INS10426	CW Free Chlorine Analyzer pH & Temp	Replace I&C	\$ 4,050	
2018	E10658	PWT_54INS10658	CW pH Meter (CW Bypass Vault)	Replace Instrument	\$ 2,700	
2018	E10500	DPF_02FLO10500	Dutard Turnout Flowmeter	Replace I&C	\$ 10,500	
2018	E10191	PWT_49VOP10191	Filter 1 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX, contractor install
2018	E10193	PWT_49VOP10193	Filter 1 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2018	E10195	PWT_49VOP10195	Filter 1 Gullet Valve Operator	Replace actuator	\$ 7,000	
2018	E10197	PWT_49VOP10197	Filter 1 Inlet Valve Operator	Replace actuator	\$ 7,000	
2018	E10234	PWT_49VOP10234	Filter 4 Effluent Valve Operator	Replace actuator	\$ 7,000	
2018	E10236	PWT_49VOP10236	Filter 4 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2018	E10238	PWT_49VOP10238	Filter 4 Gullet Valve Operator	Replace actuator	\$ 7,000	
2018	E10240	PWT_49VOP10240	Filter 4 Inlet Valve Operator	Replace actuator	\$ 7,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E10430	PWT_54INS10430	Finished Water pH Meter (EPL Vault)	Replace I&C	\$ 2,700	
2018	E10485	PWT_85MTR10485	Irrigation Pump Motor	Replace Motor	\$ 750	
2018	E10600	PWT_54INS10600	Lab Combined pH Meter	Replace Instrument	\$ 2,700	
2018	E10428	PWT_54INS10428	Lab Settled Water pH Meter	Replace I&C	\$ 2,700	
2018	E10427	PWT_54INS10427	Lab Unsettled Water pH Meter	Replace I&C	\$ 2,700	
2018	E10127	PWT_25TNK10127	OCL Storage Tank 1	Inspect lining	\$ 10,000	
2018	E10131	PWT_25TNK10131	OCL Storage Tank 2	Inspect lining	\$ 10,000	
2018	E10134	PWT_25TNK10134	OCL Storage Tank 3	Inspect lining	\$ 10,000	
2018		PWT_29TNK	SA Spill Tank	Inspect tank	\$ 15,000	Contract Work
2018	E49987	PWT_29TNK49987	SA Storage Tank (PSAT01)	Inspect tank	\$ 10,000	
2019	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect Rehab Tank	\$ 15,000	This work requires a plant shutdown. Contract Work
2019	E10038	PWT_46PMP10038	Backwash Pump	Rehab Rebuild Pump	\$ 45,000	
2019	E10039	PWT_46MTR10039	Backwash Pump Motor	Rehab Rewind motor	\$ 15,000	
2019	E10074	PWT_56TNK10074	BP Blended Poly Mixing Tank 1	Rehab Paint	\$ 8,523	
2019	E10077	PWT_56TNK10077	BP Blended Poly Mixing Tank 2	Rehab Paint	\$ 8,523	
2019	E10160	PWT_48VLV10160	Bypass Vault Air Relief Valve	Replace Valve	\$ 2,250	
2019	E10285	PWT_19TNK10285	Cationic Batch Tank 101	Rehab Paint	\$ 1,730	
2019	E10288	PWT_19TNK0003	Cationic Batch Tank 201	Rehab Paint	\$ 1,730	
2019	E10116	PWT_18PMP10116	Caustic Feed Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10117	PWT_18MTR10117	Caustic Feed Pump 1 Motor	Replace Motor	\$ 750	
2019	E10118	PWT_18EDR10118	Caustic Feed Pump 1 VFD	Replace VFD	\$ 3,000	
2019	E10120	PWT_18PMP10120	Caustic Feed Pump 2	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10121	PWT_18MTR10121	Caustic Feed Pump 2 Motor	Replace Motor	\$ 750	
2019	E10122	PWT_18EDR10122	Caustic Feed Pump 2 VFD	Replace VFD	\$ 3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10128	PWT_25PMP10128	OCL Transfer Pump 1	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10132	PWT_25PMP10132	OCL Transfer Pump 2	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10135	PWT_25PMP10135	OCL Transfer Pump 3	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10110	PWT_18TNK10110	Caustic Tank	clean, inspect and repair tank	\$ 10,000	Contract Work
2019			Electrical System Testing	Electrical testing	\$ 12,000	
2019	E10188	PWT_49STR10188	Filter 1	Rehab Re-coat	\$ 50,000	
2019	E10220	PWT_49VOP10220	Filter 3 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX; Contract Work
2019	E10222	PWT_49VOP10222	Filter 3 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2019	E10224	PWT_49VOP10224	Filter 3 Gullet Valve Operator	Replace actuator	\$ 7,000	
2019	E10225	PWT_49VLV10225	Filter 3 Inlet Valve Operator	Replace VOP	\$ 6,750	
2019	E10231	PWT_49STR10231	Filter 4	Rehab recoat filter	\$ 50,000	
2019	E10262	PWT_49VOP10262	Filter 6 Effluent Valve Operator	Replace valve actuator	\$ 7,000	Replace with LimitorqueMX; Contract Work
2019	E10264	PWT_49VOP10264	Filter 6 Filter to Waste Valve Op	Replace valve actuator	\$ 7,000	
2019	E10266	PWT_49VOP10266	Filter 6 Gullet Valve Operator	Replace valve actuator	\$ 7,000	
2019	E10268	PWT_49VOP10268	Filter 6 Inlet Valve Operator	Replace valve actuator	\$ 7,000	
2019	E10641	PWT_79INS10641	Floc 1, 2, and 3 Streaming Current	Replace instrument	\$ 4,000	
2019	E42737	PWT_85ELC0001	Grounds - Electrical	Replace	\$ 5,000	
2019	E10171	PWT_73PMP10171	Hot Water Circulation Pump	Replace Pump	\$ 600	Coordinate this work with heater replacement
2019	E10483	PWT_85PIP10483	Irrigation Pipe	Replace	\$ 20,000	
2019	E10484	PWT_85PMP10484	Irrigation Pump	Replace Pump	\$ 1,200	
2019	E20608	PWT_74ELC20608	Lighting Systems	Replace	\$ 50,000	
2019	E50402	PWT_33INS50402	Non Ionic Batch Tk 1 Level LIT-221	Replace level instrument	\$ 2,550	
2019	E50552	PWT_33INS50552	Non Ionic Neat Tk Level LIT-220	Replace level instrument	\$ 2,550	
2019	E10294	PWT_33PMP10294	Non-Ionic Poly Pump 301	Replace Pump	\$ 7,500	Order pump & motor together

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10295	PWT_33MTR10295	Non-Ionic Poly Pump Motor 301	Replace motor	\$ 750	
2019			Non-Ionic Poly Pump 302	Replace Pump	\$ 7,500	
2019	E10295	PWT_33MTR10295	Non-Ionic Poly Pump Motor 302	Replace Motor	\$ 750	
2019	E10301	PWT_33PMP10301	Non-Ionic Poly Pump 401	Replace Pump	\$ 7,500	
2019	E10302	PWT_33MTR10302	Non-Ionic Poly Pump Motor 401	Replace Motor	\$ 750	
2019	E10296	PWT_33PMP10296	Non-Ionic Poly Pump 501	Replace Pump	\$ 7,500	
2019	E10297	PWT_33MTR10297	Non-Ionic Poly Pump Motor 501	Replace Motor	\$ 750	
2019	E10291	PWT_33TNK10291	Non-Ionic Poly Tank	Rehab Paint	\$ 1,730	
2019	E10139	PWT_25PMP10139	OCL Meter Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10140	PWT_25MTR10140	OCL Meter Pump 1 Motor	Replace Motor	\$ 750	
2019	E10141	PWT_25PMP10141	OCL Meter Pump 2	Replace Pump	\$ 7,500	
2019	E10142	PWT_25MTR10142	OCL Meter Pump 2 Motor	Replace Motor	\$ 750	
2019	E10143	PWT_25PMP10143	OCL Meter Pump 3	Replace Pump	\$ 7,500	
2019	E10144	PWT_25MTR10144	OCL Meter Pump 3 Motor	Replace Motor	\$ 750	
2019	E10145	PWT_25PMP10145	OCL Meter Pump 4	Replace Pump	\$ 7,500	
2019	E10146	PWT_25MTR10146	OCL Meter Pump 4 Motor	Replace Motor	\$ 750	
2019	E10147	PWT_25PMP10147	OCL Meter Pump 5	Replace Pump	\$ 7,500	
2019	E10148	PWT_25MTR10148	OCL Meter Pump 5 Motor	Replace Motor	\$ 750	
2019			Particle Counter Calibration	Calibrate instrument	\$ 500	Setup at the same time as STWP
2019	E10552	PWT_32TNK10552	Phosphoric Acid Tank	Rehab Paint	\$ 8,523	
2019	E10495	DPF_02PMP10495	Pump 1	Rehab Rebuild Pump	\$ 18,000	Contract Work
2019	E10497	DPF_02PMP10497	Pump 2	Rehab Rebuild Pump	\$ 12,000	
2019	E10496	DPF_02MTR10496	Pump Motor 1	Rewind motor	\$ 2,800	
2019	E10498	DPF_02MTR10498	Pump Motor 2	Rewind motor	\$ 2,800	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10440	PWT_54INS10440	Raw Water Scatter Turbidmeter	Replace I&C	\$ 3,750	
2019	E10448	PWT_79INS10448	SBA Tank Level Gauge	Replace I&C	\$ 2,550	
2019	E10327	PWT_50ELC10327	Sed Basin 1 Rake Controller	Replace	\$ 5,000	
2019	E10359	PWT_50ELC10359	Sed Basin 2 Rake Controller	Replace	\$ 5,000	
2019	E10388	PWT_50ELC10388	Sed Basin 3 Rake Controller	Replace	\$ 5,000	
2019	E10537	PWT_53PMP10537	Sludge Dewatering Pump 2	Rehab Packing Replacement	\$ 258	
2019	E46530	PWT_29PMP46530	Sulfuric Acid Pump #1 (PSAP-01)	Replace Pump	\$ 6,000	
2019	E46531	PWT_29PMP46531	Sulfuric Acid Pump #2 (PSAP-02)	Replace Pump	\$ 6,000	
2019	E10441	PWT_54INS10441	Washwater Scatter Turbidmeter	Replace I&C	\$ 3,750	
2019	E10510	PWT_51PMP10510	Washwater Underflow Pump	Rehab Packing Replacement	\$ 258	
2020	E10165	PWT_72CMP10165	Air Compressor 2	Replace Blower	\$ 30,000	
2020	E10164	PWT_72MTR10164	Air Compressor Motor 1	Replace Motor	\$ 1,200	
2020	E10166	PWT_72MTR10166	Air Compressor Motor 2	Replace Motor	\$ 1,200	
2020	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect tank thickness	\$ 3,000	Contract Work
2020	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Replace Tank	\$ 120,000	
2020	E10058	PWT_47MIS10058	Belt Press	Replace BFP	\$ 700,000	
2020	E10070	PWT_55PMP10070	BP Anionic Neat Poly Pump (P-P-3)	Replace Pump	\$ 6,000	
2020	E10055	PWT_47TNK10055	BP Blend Tank	Replace Tank	\$ 75,000	Contract Work
2020	E10055	PWT_47TNK10055	BP Blend Tank	Clean, Inspect & ReportPWTP BP	\$ 25,000	
2020	E10081	PWT_56VLV10086	BP Blended Poly Feed Pump 1	Replace Pump	\$ 2,250	Order pump & motor together
2020	E10082	PWT_56MTR10082	BP Blended Poly Feed Pump Motor 1	Replace Motor	\$ 750	
2020	E10083	PWT_56PMP10083	BP Blended Poly Feed Pump 2	Replace Pump	\$ 2,250	
2020	E10084	PWT_56MTR10084	BP Blended Poly Feed Pump Motor 2	Replace Motor	\$ 750	
2020	E10075	PWT_56MIX10075	BP Blended Poly Mixer 1	Replace Mechanical	\$ 15,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
				Drive		
2020	E10078	PWT_56MIX10078	BP Blended Poly Mixer 2	Replace Mechanical Drive	\$ 15,000	
2020	E10065	PWT_47PMP10065	BP Filtrate Recycle Pump	Replace Pump	\$ 50,000	
2020	E10068	PWT_55MIX10068	BP Neat Poly Mixer	Replace Mechanical Drive	\$ 15,000	
2020	E10283	PWT_19PMP10283	Cationic Poly Pump 201	Replace Pump	\$ 15,000	Order pump & motor together
2020	E10284	PWT_19MTR10284	Cationic Poly Pump Motor 201	Replace Motor	\$ 750	
2020	E10281	PWT_19PMP10281	Cationic Poly Pump 101	Replace Pump	\$ 15,000	
2020	E10280	PWT_19TNK10280	Cationic Poly Tank	Clean, Inspect, & Report Condi	\$ 10,000	Contract Work
2020	E10280	PWT_19TNK10280	Cationic Poly Tank	Replace Tank	\$ 90,000	
2020	E10189	PWT_49INS10189	Filter 1 Controls	Replace	\$ 16,500	
2020	E10201	PWT_49INS10201	Filter 1 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10203	PWT_49INS10203	Filter 2 Controls	Replace	\$ 16,500	
2020	E10205	PWT_49VOP10205	Filter 2 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX; Contract Work
2020	E10207	PWT_49VOP10207	Filter 2 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2020	E10210	PWT_49VOP10210	Filter 2 Gullet Valve Operator	Replace actuator	\$ 7,000	
2020	E10212	PWT_49VOP10212	Filter 2 Inlet Valve Operator	Replace VOP	\$ 6,750	
2020	E10216	PWT_49INS10216	Filter 2 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10217	PWT_49STR10217	Filter 3	Rehab Re-coat	\$ 50,000	
2020	E10218	PWT_49INS10218	Filter 3 Controls	Replace	\$ 16,500	
2020	E10230	PWT_49INS10230	Filter 3 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10232	PWT_49INS10232	Filter 4 Controls	Replace	\$ 16,500	
2020	E10244	PWT_49INS10244	Filter 4 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E10246	PWT_49INS10246	Filter 5 Controls	Replace	\$ 16,500	
2020	E10248	PWT_49VOP10248	Filter 5 Effluent Valve Operator	Replace valve	\$ 7,000	Replace with LimitorqueMX; Contract Work
2020	E10250	PWT_49VOP10250	Filter 5 Filter to Waste Valve Op	Replace valve actuator	\$ 7,000	
2020	E10252	PWT_49VOP10252	Filter 5 Gullet Valve Operator	Replace valve actuator	\$ 7,000	
2020	E10254	PWT_49VOP10254	Filter 5 Inlet Valve Operator	Replace valve actuator	\$ 7,000	
2020	E10258	PWT_49INS10258	Filter 5 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10259	PWT_49STR10259	Filter 6	Rehab Re-coat	\$ 50,000	
2020	E10260	PWT_49INS10260	Filter 6 Controls	Replace	\$ 16,500	
2020	E10272	PWT_49INS10272	Filter 6 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10273	PWT_49STR10273	Filter Control House 1	Replace Building	\$ 33,000	Contract Work
2020	E10274	PWT_49STR10274	Filter Control House 2	Replace Building	\$ 33,000	
2020	E10278	PWT_49STR10278	Filter Control House 3	Replace Building	\$ 33,000	
2020	E10307	PWT_50MDR10307	Floc 1 Unit A Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together
2020	E10308	PWT_50MTR10308	Floc 1 Unit A Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10310	PWT_50MDR10310	Floc 1 Unit B Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10311	PWT_50MTR10311	Floc 1 Unit B Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10313	PWT_50MDR10313	Floc 1 Unit C Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together. Motor should be replaced if rehab cost is more than 1/2 of new
2020	E10314	PWT_50MTR10314	Floc 1 Unit C Mech. Drive Motor	Rehab Motor	\$ 733	
2020	E10316	PWT_50MDR10316	Floc 1 Unit D Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10317	PWT_50MTR10317	Floc 1 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10336	PWT_50MDR10336	Floc 2 Unit A Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together. Contractor to install.
2020	E10337	PWT_50MTR10337	Floc 2 Unit A Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10339	PWT_50MDR10339	Floc 2 Unit B Mech.	Replace Mech.	\$ 15,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
			Drive	drive		
2020	E10340	PWT_50MTR10340	Floc 2 Unit B Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10342	PWT_50MDR10342	Floc 2 Unit C Mech. Drive	Replace Mech. drive	\$ 15,000	
2020	E10343	PWT_50MTR10343	Floc 2 Unit C Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10347	PWT_50MDR10347	Floc 2 Unit D Mech. Drive	Replace Mech drive	\$ 15,000	
2020	E10346	PWT_50MTR10346	Floc 2 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10372	PWT_50MTR10372	Floc 3 Drive Unit B Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10372	PWT_50MTR10372	Floc 3 Unit B Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10370	PWT_50EDR10370	Floc 3 Unit A Mech. Drive	Replace Mech. Drive	\$ 15,000	
2020	E10369	PWT_50MTR10369	Floc 3 Unit A Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10374	PWT_50MDR10374	Floc 3 Unit C Mech. Drive	Replace Drive	\$ 15,000	
2020	E10375	PWT_50MTR10375	Floc 3 Unit C Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10377	PWT_50MDR10377	Floc 3 Unit D Mech. Drive	Replace drive	\$ 15,000	
2020	E10378	PWT_50MTR10378	Floc 3 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10607	PWT_50MIX10607	Flocculator 1 Flash Mixer Motor	Replace motor	\$ 1,200	
2020	E10350	PWT_50MTR10350	Flocculator 2 Flash Mixer Motor	Replace Motor	\$ 1,200	
2020	E10380	PWT_50MIX10380	Flocculator 3 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2020	E10608	PWT_50MTR10608	Flocculator 3 Flash Mixer Motor	Replace motor	\$ 1,200	
2020	E10298	PWT_33TNK10298	Non Ionic Poly Batch Tank 301	Replace Tank	\$ 4,000	
2020	E10303	PWT_33TNK10303	Non Ionic Poly Batch Tank 401	Replace Tank	\$ 4,000	
2020	E10299	PWT_33MIX10299	Non Ionic Poly Mixer 301	Replace Mechanical Drive	\$ 2,250	
2020	E10304	PWT_33MIX10304	Non Ionic Poly Mixer 401	Replace Mechanical Drive	\$ 2,250	
2020	E10292	PWT_33MIX10292	Non-Ionic Poly Mixer	Rehab Rebuild Gearbox	\$ 3,377	
2020	E10129	PWT_25MTR10129	OCL Transfer Pump Motor 1	Replace Motor	\$ 750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E10133	PWT_25MTR10133	OCL Transfer Pump Motor 2	Replace Motor	\$ 750	
2020	E10136	PWT_25MTR10136	OCL Transfer Pump Motor 3	Replace Motor	\$ 750	
2020			Permanganate Building SCADA-PLC Sys	Replace SCADA	\$ 33,000	
2020	E10552	PWT_32TNK10552	Phosphoric Acid Tank	Clean and Inspect Tank	\$ 8,500	Contract Work
2020	E10151	PWT_48TNK10151	PWTP Clearwell	Inspect clearwell	\$ 25,000	
2020			Sed Basin 1 Drive Chains	Replace drive chains	\$ 700	
2020	E10328	PWT_50MDR10328	Sed Basin 1 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2020			Sed Basin 2 Drive Chains	Replace drive chains	\$ 700	
2020			Sed Basin 2 Rake Chains	Replace flight chains	\$ 13,684	
2020			Sed Basin 2 Rake Drive Sprockets	Replace drive sprockets	\$ 24,000	
2020	E10362	PWT_50MIS10362	Sed Basin 2 Rake Flights	Replace rake flights	\$ 13,530	
2020	E10360	PWT_50MDR10360	Sed Basin 2 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2020			Sed Basin 3 Drive Chains	Replace drive chains	\$ 700	
2020	E10389	PWT_50MDR10389	Sed Basin 3 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2021	E49920	PWT_75INS49920	10" BFV B/P Sensor 483	Replace sensor	\$ 500	
2021	E49922	PWT_75INS49922	10" BFV B/P Sensor 484	Replace sensor	\$ 500	
2021	E46602	PWT_23VLV46602	1-1/4" Ball Valve (HP-2)	Replace valve	\$ 3,100	
2021	E46604	PWT_23VLV46604	2" Ball Valve (HP-12)	Replace valve	\$ 3,100	
2021	E10659	PWT_15INS10659	Alum Pump Control Panel	Replace Panel	\$ 33,000	
2021	E10017	PWT_15TNK10017	Alum Tank 1	Clean, inspect and repair tank	\$ 8,523	Contract Work
2021	E50340	PWT_15INS50340	Alum Tank 1 Level (PFC/LA-LIT-201)	Replace Level Instrument	\$ 2,500	
2021	E10018	PWT_15TNK10018	Alum Tank 2	Clean and inspect tank	\$ 8,523	
2021	E50343	PWT_15INS50343	Alum Tank 2 Level (PFC/LA-LIT-202)	Replace level instrument	\$ 2,500	
2021	E10019	PWT_15TNK10019	Alum Tank 3	Clean and inspect	\$ 8,523	Contract Work
2021	E50346	PWT_15INS50346	Alum Tank 3 Level (PFC/LA-LIT-203)	Replace level instrument	\$ 2,500	
2021	E10584	PWT_15PMP10584	Alum Transfer Pump	Rehab Rebuild Pump (Wetted P	\$ 2,634	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E10664	PWT_15INS10664	Alum Truck Unloading Panel (PFCTUP)	Replace Panel	\$ 33,000	
2021	E52050	PWT_74TNK52050	Backup Generator Buried Fuel Tank	Inspect Tank	\$ 15,000	
2021	E50370	PWT_17FLO50370	Basin 1 B/P Carbon Flow Mtr FIT307	Replace flow meter	\$ 8,000	
2021	E50366	PWT_17FLO50366	Basin 1 Carbon Flow Meter FIT303	Replace flow meter	\$ 8,000	
2021	E50371	PWT_17FLO50371	Basin 2 B/P Carbon Flow Mtr FIT308	Replace flow meter	\$ 8,000	
2021	E50372	PWT_17FLO50372	Basin 3 B/P Carbon Flow Mtr FIT309	Replace flow meter	\$ 8,000	
2021	E50357	PWT_17INS50357	Carbon Bldg Truck Unloading Panel	Replace panel	\$ 33,000	
2021	E50365	PWT_17FLO50365	Carbon Feed Rm Plt Wtr Flow Totaliz	Replace flow totalizer	\$ 2,050	
2021	E50361	PWT_17INS50361	Carbon Tk 1 Level Inst PPAC-LIT201	Replace level instrument	\$ 2,500	
2021	E50364	PWT_17INS50364	Carbon Tk 2 Level Inst PPAC-LIT202	Replace level instrument	\$ 2,500	
2021	E50405	PWT_19INS50405	Cat Poly Batch Tk 1 Level CPLI-231	Replace instrument	\$ 2,500	
2021	E50406	PWT_19INS50406	Cat Poly Batch Tk 2 Level CPLI-232	Replace instrument	\$ 2,500	
2021	E50398	PWT_19INS50398	Cat Poly Control PLC/IO Panel	Replace Panel	\$ 33,000	
2021	E10616	PWT_19FLO10616	Cat Poly Flow Meter FIT301	Replace flow meter	\$ 8,000	
2021	E10568	PWT_19INS10568	Cat Poly Tank Level Inst	Replace level instrument	\$ 2,500	
2021	E10280	PWT_19TNK10280	Cationic Poly Tank	Rehab Paint	\$ 8,523	
2021			Electrical System Testing	Electrical testing	\$ 12,000	
2021	E50331	PWT_79ELC50331	Filter Gallery IO Panel 11UPS	Replace UPS	\$ 3,000	
2021	E50329	PWT_79ELC50329	Filter Gallery IO Panel 7&8 UPS	Replace UPS	\$ 3,000	
2021	E10319	PWT_50MIX10319	Flocculator 1 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2021	E10348	PWT_50MIX10348	Flocculator 2 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2021	E46599	PWT_23PMP46599	HP Meter Pump #1 (PHPP-01)	Replace Pump	\$ 1,300	
2021	E46600	PWT_23PMP46600	HP Meter Pump #2 (PHPP-02)	Replace Pump	\$ 1,300	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46601	PWT_23PMP46601	HP Meter Pump #3 (PHPP-03)	Replace Pump	\$ 1,300	
2021	E50009	PWT_23INS50009	HP Tank Level Inst. (HP-LIT-242)	Replace level instrument	\$ 2,550	
2021	E50008	PWT_23INS50008	HP Tank Temp. Inst. (TIT-586)	Replace temp instrument	\$ 2,100	
2021	E46625	PWT_24VLV46625	LOX 3" Ball Valve (OX-04)	Replace valve	\$ 3,100	Combine with like work at other plants/Contracted work
2021	E46626	PWT_24VLV46626	LOX 3" Ball Valve (OX-05)	Replace valve	\$ 3,100	
2021	E46627	PWT_24VLV46627	LOX 3" Ball Valve (OX-06)	Replace valve	\$ 3,100	
2021	E50012	PWT_24VLV50012	LOX Emergency Shut Off Vlv. (OX-7)	Replace valve	\$ 3,100	
2021	E50017	PWT_24INS50017	LOX Press. Instrument (OX-PIT-103)	Replace press. instrument	\$ 2,550	
2021	E46522	PWT_24TNK46522	LOX Tank #1 (PLOX01)	Paint LOX tank	\$ 10,000	
2021	E46524	PWT_24INS46524	LOX Tank #1 Pressure Transmitter	Replace pressure instr.	\$ 2,550	
2021	E46523	PWT_24TNK46523	LOX Tank #2 (PLOX02)	Paint LOX tank	\$ 10,000	
2021	E46525	PWT_24INS46525	LOX Tank #2 Pressure Transmitter	Replace pressure instr.	\$ 2,550	
2021	E50015	PWT_24INS50015	LOX Temp Instrument (TE-501)	Replace temp. instrument	\$ 2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46513	PWT_24FLO46513	Mass Flow Meter (OX-FIT-305)	Replace flow meter	\$ 5,000	
2021	E46514	PWT_24FLO46514	Mass Flow Meter (OX-FIT-306)	Replace flow meter	\$ 5,000	
2021	E46515	PWT_24FLO46515	Mass Flow Meter (OX-FIT-307)	Replace flow meter	\$ 5,000	
2021	E49834	PWT_36INS49834	OCW Temp. Instrument	Replace temp. instrument	\$ 2,100	
2021	E46498	PWT_27INS46498	OD D/P Instrument #1 (OD-PDIT-136)	Replace D/P instr.	\$ 2,550	
2021	E46499	PWT_27INS46499	OD D/P Instrument #2 (OD-PDIT-137)	Replace D/P instr.	\$ 2,550	
2021	E46552	PWT_27INS46552	OD Temp. Inst. #1 (OD-TE/TIT-534)	Replace Temp. instr.	\$ 2,100	
2021	E46553	PWT_27INS46553	OD Temp. Inst. #2 (OD-TE/TIT-536)	Replace Temp. instr.	\$ 2,100	
2021	E46519	PWT_27INS46519	OD Temp. Inst. (OD-TIT-531)	Replace Temp. instr.	\$ 2,100	
2021	E46610	PWT_27BLW46610	Off Gas Blower #1 (POGB01)	Replace blower	\$ 15,000	
2021	E49972	PWT_27MTR49972	Off Gas Blower #1 Motor	Replace motor	\$ 750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46611	PWT_27BLW46611	Off Gas Blower #2 (POGB02)	Replace blower	\$ 15,000	
2021	E49973	PWT_27MTR49973	Off Gas Blower #2 Motor	Replace motor	\$ 750	
2021	E49979	PWT_26INS49979	Off Gas Press Inst. (OG-PIT-125)	Replace pressure instr.	\$ 2,550	
2021	E49980	PWT_26INS49980	Off Gas Press Inst. (OG-PIT-131)	Replace pressure instr.	\$ 2,550	
2021	E46596	PWT_26VLV46596	Off Gas Vacuum Valve (OG-4)	Replace valve	\$ 6,300	
2021	E46597	PWT_26VLV46597	Off Gas Vacuum Valve (OG-5)	Replace valve	\$ 6,300	
2021	E46598	PWT_26VLV46598	Off Gas Vacuum Valve (OG-6)	Replace valve	\$ 6,300	
2021	E49978	PWT_26VLV49978	Off Gas Vacuum Valve (OG-7)	Replace valve	\$ 6,300	
2021	E48104	PWT_24VLV48104	OZ Gen. #1 LOX Ball Valve (OX-12)	Replace valve	\$ 3,100	
2021	E48105	PWT_24VLV48105	OZ Gen. #2 LOX Ball Valve (OX-13)	Replace valve	\$ 3,100	
2021	E48106	PWT_24VLV48106	OZ Gen. #3 LOX Ball Valve (OX-14)	Replace valve	\$ 3,100	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45058	PWT_86PMP45058	Ozonated H2O Sample Drain (POCSP01)	Replace pump	\$ 24,000	
2021	E45059	PWT_86PMP45059	Ozonated H2O Sample Drain (POCSP02)	Replace pump	\$ 24,000	
2021			Particle Counter Calibration	Calibrate instrument	\$ 500	Setup at same time as STWP
2021	E10670	PWT_32INS10670	Phosphoric Acid Control Panel PZNCP	Replace panel	\$ 33,000	
2021	E10476	PWT_52PMP10476	Plant Water Pump 2 (PPWP02)	Rehab Rebuild Pump	\$ 17,000	Contract Work
2021	E49914	PWT_52EDR49914	Plant Water Pump 2 VFD	Replace VFD	\$ 20,000	
2021	E10478	PWT_52PMP10478	Plant Water Pump 3 (PPWP03)	Rehab Rebuild Pump	\$ 17,000	Contract Work
2021	E49916	PWT_52EDR49916	Plant Water Pump 3 VFD	Replace VFD	\$ 20,000	
2021	E10477	PWT_52MTR10477	Plant Water Pump Motor 2	Rehab Rewind motor	\$ 1,634	
2021	E10479	PWT_52MTR10479	Plant Water Pump Motor 3	Rehab Rewind Unit	\$ 1,634	
2021	E49840	PWT_52INS49840	PW Pressure Inst. (PW-PIT-188)	Replace pressure instr.	\$ 2,550	
2021	E49832	PWT_52INS49832	PW Suction Press. Inst (PW-PIT-181)	Replace pressure instr.	\$ 2,550	
2021	E49990	PWT_29INS49990	SA Tank Level Inst. (SA-LIT-231)	Replace level instr.	\$ 2,550	
2021	E49982	PWT_29INS49982	SA Tank Temp. Inst. (TE/TIT-580)	Replace temperature instr.	\$ 2,100	
2021	E46536	PWT_29VLV46536	SA Vacuum/Press Relief Valve (SA-2)	Replace valve	\$ 6,300	
2021	E46608	PWT_35MIS46608	SN Air Dryer #1 (PDD01)	Replace air dryer	\$ 2,500	
2021	E46609	PWT_35MIS46609	SN Air Dryer #2 (PDD02)	Replace air dryer	\$ 2,500	
2021	E46606	PWT_35CMP46606	SN Compressor #1 (PSNCMP01)	Replace compressor	\$ 5,500	
2021	E46607	PWT_35CMP46607	SN Compressor #2 (PSNCMP02)	Replace compressor	\$ 5,500	
2021	E46550	PWT_35FLO46550	SN Mass Flow Meter (SN-FIT-346)	Replace flow meter	\$ 5,000	
2021	E46497	PWT_35INS46497	SN Pressure Inst. (SN-PIT-142)	Replace pressure instr.	\$ 2,550	
2021	E46551	PWT_35INS46551	SN Temp. Inst. (SN-TE/TIT-541)	Replace temperature instr.	\$ 2,100	
2021	E46524	PWT_24INS46524	Tank #1 Press. Inst. (LOX-PIT-101)	Replace press. Instrument	\$ 2,550	Contract Work

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46525	PWT_24INS46525	Tank #2 Press. Inst. (LOX-PIT-102)	Replace press. Instrument	\$ 2,550	
2021	E46620	PWT_26ELC46620	Unit #1 PSU (POZPSU01)	Replace power supply unit	\$ 60,000	
2021	E46621	PWT_26ELC46621	Unit #2 PSU (POZPSU02)	Replace power supply unit	\$ 60,000	
2021	E46622	PWT_26ELC46622	Unit #3 PSU (POZPSU03)	Replace power supply unit	\$ 60,000	
2021	E49107	PWT_24VOP49107	Valve OX-12 Electric Actuator	Replace valve actuator	\$ 10,000	Combine with like work at other plants
2021	E49108	PWT_24VOP49108	Valve OX-13 Electric Actuator	Replace valve actuator	\$ 10,000	
2021	E49107	PWT_24VOP49107	Valve OX-14 Electric Actuator	Replace valve actuator	\$ 10,000	
2021	E50373	PWT_17FLO50373	WWR Carbon B/P Flow Mtr FIT306	Replace flow meter	\$ 8,000	
2021	E50369	PWT_17FLO50369	WWR Carbon Flow Mtr FIT302	Replace flow meter	\$ 8,000	
FY18-21 PWTP TOTAL =					\$3,527,451	

Table 2. Riconada Water Treatment Plant Planned Work Projects

Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	1	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in the same year
2018	2	E50144	RWT_19VLV50144	Cat Poly Tank 1 Outlet Valve	Replace valve and actuator	\$3,100	Planner to purchase spare part
2018	3	E50147	RWT_19VLV50147	Cat Poly Tank 2 Outlet Valve	Replace valve and actuator	\$3,100	
2018	4	E20119	RWT_19PMP20119	Cationic Polymer Pump 1	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	5	E20747	RWT_19MTR20747	Cationic Polymer Pump 1 Mtr	Replace motor	\$750	
2018	6	E20749	RWT_19EDR20749	Cationic Polymer Pump 1 VFD	Replace VFD	\$3,000	Contract work out.
2018	7	E20120	RWT_19PMP20120	Cationic Polymer Pump 2	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	8	E20748	RWT_19MTR20748	Cationic Polymer Pump 2 Mtr	Replace motor	\$750	
2018	9	E20750	RWT_19EDR20750	Cationic Polymer Pump 2 VFD	Replace VFD	\$3,000	Contract work out
2018	10	E20121	RWT_19PMP20121	Cationic Polymer Pump 3	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	11	E20751	RWT_19MTR20751	Cationic Polymer Pump 3 Mtr	Replace motor	\$750	
2018	12	E20752	RWT_19EDR20752	Cationic Polymer Pump 3 VFD	Replace VFD	\$3,000	Contract work out
2018	13	E20122	RWT_18TNK20122	Caustic Tank	Clean, Inspect & Paint	\$15,000	Inspections to be combined with other plants in the same year
2019	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$16,000	Inspections to be combined with other plants in the same year
2019	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$16,000	
2019	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$16,000	
2019	4	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Clean, inspect and repair	\$18,000	
2019	5			Automatic Transfer Switch	Replace ATS	\$10,000	
2019	6	E20117	RWT_19TNK20117	Cat Poly Storage Tank 1	Clean & inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	7	E20117	RWT_19TNK20117	Cat Poly Storage Tank 1	Repair and paint tank	\$12,000	

Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	8	E20118	RWT_19TNK20118	Cat Poly Storage Tank 2	Clean & inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	9	E20118	RWT_19TNK20118	Cat Poly Storage Tank 2	Repair and paint tank	\$12,000	
2019	10	E20151	RWT_48INS20151	CW East Elevation Meter	Replace I&C	\$5,000	
2019	11	E20161	RWT_48INS20161	CW West Elevation Meter	Replace I&C	\$5,000	
2019	12			Electrical System Testing	Electrical Testing	\$25,000	
2019	13	E20264	RWT_33TNK20264	Non-Ionic Polymer Storage Tank	Clean and inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	14	E20264	RWT_33TNK20264	Non-Ionic Polymer Storage Tank	Paint tank	\$18,000	
2019	15	E52075		UPS 1B		\$12,000	
2019	16	E52076		UPS 2B		\$12,000	
2020	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Paint tank	\$5,000	
2020	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Paint tank	\$5,000	
2020	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Paint tank	\$5,000	
2020	4	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in the same year
2020	5	E20625	RWT_85STR20625	Fuel Island	Repair roof	\$40,000	
2020	6	E20411	RWT_77PMP20411	Hot Water Recirc Pump # 6	Replace pump	\$1,200	
2020	7	E20410	RWT_77MIS20410	HVAC Unit - Computer Room	Replace HVAC	\$12,000	
2020	8	E54311	RWT_54INS54311	More Ave Reservoir CL Analyzer	Replace analyzer	\$4,050	
2020	9	E50194	RWT_54INS50194	More Ave Reservoir pH/Temp Analyzer	Replace analyzer	\$2,700	
2020	10	E20100	RWT_17MIS20100	PAC Dust Collector 1	Replace Misc	\$10,000	Contract out if not exact unit
2020	11	E20103	RWT_17MIS20103	PAC Dust Collector 2	Replace Misc	\$10,000	
2020	12	E20111	RWT_17PMP20111	PAC Recirc-Transfer Pump	Replace pump	\$16,000	
2020	13	E20098	RWT_17TNK20098	PAC Storage Tank 1	Clean and inspect	\$9,000	Inspections to be combined with other plants in the same year
2020	14	E20101	RWT_17TNK20101	PAC Storage Tank 2	Clean and inspect	\$9,000	
2020	15	E20782	RWT_52EDR20782	Plant Water Pump 1 VFD	Replace VFD	\$20,000	

Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	16	E20784	RWT_52EDR20784	Plant Water Pump 2 VFD	Replace VFD	\$20,000	
2020	17	E20786	RWT_52EDR20786	Plant Water Pump 3 VFD	Replace VFD	\$20,000	
2020	18	E20505	RWT_28INS0008	PP Bldg SCADA/PLC	Replace SCADA	\$33,000	
2020	19	E20189	RWT_74TNK20189	Standby Generator Fuel Tank	Inspect Tank	\$3,000	Inspections to be combined with other plants in the same year
2020	20	E20947	RWT_86PMP20947	Sump Pump	Replace pump	\$1,200	
2020	21	E54286	RWT_54INS54286	West Pipeline pH/Temp. Analyzer	Replace analyzer	\$2,700	
2021	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$17,000	Inspections to be combined with other plants in the same year
2021	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$17,000	
2021	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$17,000	
2021	4	E20928	RWT_19FLO20928	Cat Poly Combined FLO FE/FIT-301	Replace Flow Meter	\$5,000	
2021	5	E21032	RWT_19PIP21032	Cat Poly Piping	Replace piping	\$50,000	Contract out
2021	6	E20935	RWT_19INS20935	Cat Poly Tank Cntrl. Panel (RCPTCP)	Replace Control Panel	\$25,000	
2021	7	E20146	RWT_48STR20146	Clearwell - East	Inspect clearwell	\$40,000	
2021	8	E20155	RWT_48STR20155	Clearwell - West	Inspect clearwell	\$40,000	
2021	9	E20721	RWT_54INS20721	E. Clearwell Turbidimeter	Replace Instrument	\$3,750	
2021	10			Electrical System Testing	Electrical Testing	\$35,000	
2021	11	E20430	RWT_15INS20430	Local Control Panel 11 Alum/Cat	Replace I&C	\$33,000	Contract out
2021	12	E20267	RWT_33PMP20267	Non-Ionic Poly Blend Recirc Pump	Replace pump	\$8,000	
2021	13	E20465	RWT_28ELC20465	Permanganate Bldg LCP	Replace I&C	\$33,000	
2021	14	E52074	RWT_74ELC52074	Raw Water UPS	Replace batteries	\$12,000	
2021	15	E52073	RWT_74ELC52073	Treated Water UPS	Replace batteries	\$12,000	
FY18-21 RWTP TOTAL =						\$873,050	

Table 3. Santa Teresa Water Treatment Plant Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E30050	SWT_16TNK30050	Aqua NH4 Tank	Inspect tank thickness	\$3,000	
2018	E30329	SWT_19TNK30329	Cationic Poly Mixing Tank 10	Clean, inspect and repair tank	\$8,523	Inspections to be combined with other plants in same year
2018	E42837	SWT_23TNK42837	HP Spill Tank	Inspect tank	\$2,500	
2018	E45041	SWT_23TNK45041	HP Storage Tank	Inspect tank	\$10,000	
2018	E30157	SWT_25MTR30157	OCL Meter Pump 4 Motor	Replace Motor	\$750	
2018	E30160	SWT_25MTR30160	OCL Meter Pump 5 Motor	Replace Motor	\$750	
2018	E43066	SWT_25MTR43066	OCL Meter Pump 6 Motor	Replace motor	\$750	
2018	E30156	SWT_25PMP30156	OCL Meter Pump 4	Replace Pump	\$7,500	
2018	E30159	SWT_25PMP30159	OCL Meter Pump 5	Replace Pump	\$7,500	
2018	E30162	SWT_25PMP30162	OCL Meter Pump 6	Replace Pump	\$7,500	
2018	E30141	SWT_25TNK30141	OCL Storage Tank 2	repair lining	\$25,000	
2018	E42846	SWT_26VLV42846	EOZ Regulating Valve (OG-3)	Replace valve	\$8,200	
2018	E42847	SWT_26VLV42847	WOZ Regulating Valve (OG-10)	Replace valve	\$8,200	
2018	E42838	SWT_29TNK42838	SA Storage Tank (SSAT-01)	Inspect Tank	\$10,000	Inspections to be combined with other plants in same year
2018	E42839	SWT_29TNK42839	SA Spill Tank (SSAT-02)	Inspect tank	\$62,500	
2018	E30344	SWT_33TNK30344	Nonionic Poly Mixing Day Tank 13	Clean, inspect and repair tank	\$8,523	
2018	E30045	SWT_45VOP30045	Air Wash Blower 1 Disch Vlv Act	Replace VOP	\$8,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E30049	SWT_45VOP30049	Air Wash Blower 2 Disch Vlv Act	Replace VOP	\$8,000	
2018	E30132	SWT_72CMP30132	Plant Air Compressor 1	Replace Compressor	\$40,000	Contract work out
2018	E30134	SWT_72CMP30134	Plant Air Compressor 2	Replace Compressor	\$40,000	
2018	E30133	SWT_72MT30133	Plant Air Compressor 1 Motor	Replace motor	\$2,000	
2018	E30135	SWT_72MTR30135	Plant Air Compressor 2 Motor	Replace motor	\$2,000	
2018			Particle Counter Calibrations	Factory Calibration	\$5,000	Contract work out; combine with PWTP 2017.
2018	E30016	SWT_15MIS30016	Alum - Ferric Strainer Baskets	Replace Valve	\$5,400	
2018	E30105	SWT_17MIX30105	Carbon Mixer - North	Overhaul mixer	\$6,000	Contract work out
2018	E30110	SWT_17MIX30110	Carbon Mixer - South	Overhaul mixer	\$6,000	
2018	E30140	SWT_25PMP30140	OCL Transfer Pump 1	Replace pump	\$12,000	
2018	E30143	SWT_25PMP30143	OCL Transfer Pump 2	Replace pump	\$12,000	
2018	E30146	SWT_25PMP30146	OCL Transfer Pump 3	Replace pump	\$12,000	
2018	E42810	SWT_26MIS42810	OZ Gen. Shell 1 (SOZOG01)	clean shell & dielectrics	\$20,000	
2018	E42811	SWT_26MIS42811	OZ Gen. Shell 2 (SOZOG02)	clean shell & dielectrics	\$20,000	
2018	E42812	SWT_26MIS42812	OZ Gen. Shell 3 (SOZOG03)	clean shell & dielectrics	\$20,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E42844	SWT_26MIX42844	WOZ Pump Mixer (SSAMIX02)	Rebuild pump/mixer	\$10,000	
2018	E42845	SWT_26MIX42845	EOZ Pump Mixer (SSAMIX01)	Rebuild pump/mixer	\$10,000	
2018	E42794	SWT_26PMP42794	EOZ Ozonated Drain Pump (SOWP-01)	Overhaul pump	\$5,000	
2018			Electrical System Testing	Electrical System Testing	\$35,000	
2018			Electrical Testing	Electrical testing	\$7,000	
2019	E30773	SWT_03FLO30773	Inflow Meter	Replace I&C	\$30,000	
2019	E30781	SWT_03VOP30781	Sleeve Valve V-I-4 Actuator	Replace VOP	\$12,000	
2019	E30002	SWT_15INS30002	Alum Tank 1 - Level Transmitter	Replace I&C	\$4,500	
2019	E30005	SWT_15INS30005	Alum Tank 2 - Level Transmitter	Replace I&C	\$4,500	
2019	E30008	SWT_15INS30008	Alum Tank 3 - Level Transmitter	Replace I&C	\$4,500	
2019	E30015	SWT_15PMP30015	Alum Tank Transfer Pump	Replace Pump	\$18,000	
2019	E30000	SWT_15TNK30000	Alum Tank 1 - T3 Liquid Alum	Clean, inspect and repair tank	\$20,000	Inspection to be combined with other plants in same year
2019	E30006	SWT_15TNK30006	Alum Tank 3	Clean, inspect and repair tank	\$20,000	
2019	E30001	SWT_15VOP30001	Alum Tank 1 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30004	SWT_15VOP30004	Alum Tank 2 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30007	SWT_15VOP30007	Alum Tank 3 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30050	SWT_16TNK30050	Aqua NH4 Tank	Clean, inspect and repair	\$18,000	Inspection to be combined with other plants in same year
2019	E30112	SWT_18TNK30112	Caustic Tank	Clean, inspect and repair tank	\$21,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30326	SWT_19TNK30326	Cationic Poly Tank	Clean, inspect and repair tank	\$16,000	
2019	E30331	SWT_19TNK30331	Cationic Poly Mixing Tank 11	Clean, inspect and repair tank	\$8,523	
2019	E30815	SWT_25PIP30815	OCL Feed Piping	Replace Piping	\$75,000	Contract work out
2019	E42793	SWT_26PMP42793	WOZ Ozonated Drain Pump (SOWP-04)	Overhaul pump	\$9,000	
2019	E30342	SWT_33MIX30342	Nonionic Poly Tank 12 Mixer	Replace Mechanical Drive	\$15,000	Order motor with mixer (line item #124, E30343)
2019	E30343	SWT_33MTR30343	Nonionic Poly Tank 12 Mixer Motor	Replace Motor	\$750	Inspection to be combined with other plants in same year
2019	E30345	SWT_33MIX30345	Nonionic Poly Mix Day Tank 13 Mixer	Replace Mechanical Drive	\$15,000	
2019	E30341	SWT_33TNK30341	Nonionic Poly Storage Tank 12	Clean, inspect and repair tank	\$20,000	
2019	E50630	SWT_46FLO50630	Backwash Flow Meter	Replace	\$30,000	
2019	E30081	SWT_46VLV30081	Filter 1W Backwash Vlv V-F-7 Act	Replace actuator	\$10,000	
2019	E30070	SWT_46VOP30070	Filter 1E Backwash Vlv V-F-41 Act	Replace actuator	\$10,000	
2019	E30072	SWT_46VOP30072	Filter 2E Backwash Vlv V-F-42 Act	Replace actuator	\$10,000	
2019	E30074	SWT_46VOP30074	Filter 3E Backwash Vlv V-F-43 Act	Replace actuator	\$10,000	
2019	E30076	SWT_46VOP30076	Filter 4E Backwash Vlv V-F-44 Act	Replace actuator	\$10,000	
2019	E30078	SWT_46VOP30078	Filter 5E Backwash Vlv V-F-45 Act	Replace actuator	\$10,000	
2019	E30080	SWT_46VOP30080	Filter 6E Backwash Vlv V-F-46 Act	Replace actuator	\$10,000	
2019	E30082	SWT_46VOP30082	Filter 1W Backwash Valve V-F-7	Replace VOP	\$10,000	
2019	E30084	SWT_46VOP30084	Filter 2W Backwash Vlv V-F-8 Act	Replace actuator	\$10,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E42738	SWT_48STR42738	Clearwell	Rehab Re-coat	\$100,000	Contract work out
2019	E30124	SWT_48VOP30124	Clearwell Drain Valve- Actuator	Replace VOP	\$7,000	
2019	E30125	SWT_48VOP30125	Clearwell Outlet Valve- Actuator	Replace VOP	\$7,000	
2019	E30127	SWT_48VOP30127	Bypass Sluice Gate Actuator	Replace VOP	\$10,000	
2019	E30129	SWT_48VOP30129	Sluice Gate North Actuator	Replace VOP	\$10,000	
2019	E30131	SWT_48VOP30131	Sluice Gate South Actuator	Replace VOP	\$10,000	
2019	E30210	SWT_49INS30210	Filter 1E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30220	SWT_49INS30220	Filter 2E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30229	SWT_49INS30229	Filter 3E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30239	SWT_49INS30239	Filter 4E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30249	SWT_49INS30249	Filter 5E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30259	SWT_49INS30259	Filter 6E Head Loss Filter Lev	Replace I&C	\$3,500	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30272	SWT_49INS30272	Filter 1W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30282	SWT_49INS30282	Filter 2W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30292	SWT_49INS30292	Filter 3W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30302	SWT_49INS30302	Filter 4W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30312	SWT_49INS30312	Filter 5W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30322	SWT_49INS30322	Filter 6W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30202	SWT_49VOP30202	East Filtered Water Iso Vlv Act	Replace VOP	\$10,000	
2019	E30264	SWT_49VOP30264	West Filtered Water Iso Vlv Act	Replace VOP	\$10,000	
2019	E30676	SWT_50STR30676	Floc - Sed Basin 1 - East	Rehab Re-coat	\$500,000	Contract work out
2019	E30442	SWT_51MTR30422	WWR Pump P-15 Motor	Replace motor	\$3,750	
2019	E30444	SWT_51MTR30444	WWR Pump P-16 Motor	Replace motor	\$3,750	
2019	E30446	SWT_51MTR30446	WWR Pump P-17 Motor	Replace motor	\$3,750	
2019	E30441	SWT_51PMP30441	WWR Pump P-15	Replace pump	\$30,000	
2019	E30443	SWT_51PMP30443	WWR Pump P-16	Replace pump	\$30,000	
2019	E30445	SWT_51PMP30445	WWR Pump P-17	Replace pump	\$30,000	
2019	E30453	SWT_51STR30453	Washwater Recovery Pond East	Clean, inspect & Repair Pond	\$10,000	Inspection to be combined with other plants in

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30456	SWT_51STR30456	Washwater Recovery Pond West	Clean, inspect & Repair Pond	\$10,000	same year. Ops to wash out, eng & maint. to inspect.
2019	E30414	SWT_52TNK30414	Plant Water Hydro Tank	Inspect tank thickness	\$3,000	Inspection to be combined with other plants in same year
2019	E30497	SWT_53MDR30497	Sludge Cross Collector 1W ME-32	Replace Mechanical Drive	\$60,000	
2019	E30505	SWT_53MDR30505	Sludge Cross Collector 2W ME-37	Replace Mechanical Drive	\$60,000	
2019	E30541	SWT_53VLV30541	Sludge Pond 8 Manual Fill Valve	Replace Valve	\$3,000	Contract work out.
2019	E30544	SWT_53VLV30544	Sludge Pond 9 Manual Fill Valve	Replace Valve	\$3,000	
2019	E30546	SWT_53VLV30546	Sludge Pond 10 Manual Drain Valve	Replace Valve	\$3,000	
2019	E30547	SWT_53VLV30547	Sludge Pond 10 Manual Fill Valve	Replace Valve	\$3,000	
2019	E30187	SWT_74MCC30178	MCC - BW Bldg 5M	Replace Elec Equip	\$75,000	Propose combining all MCC replacement in a small capitol project
2019	E30184	SWT_74MCC30184	MCC - 1M	Replace Elec Equip	\$6,000	
2019	E30185	SWT_74MCC30185	MCC - Electrical Lineup DSB	Replace Elec Equip	\$75,000	
2019	E30186	SWT_74MCC30186	MCC - BW Bldg 2G	Replace Elec Equip	\$75,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30189	SWT_74MCC30189	MCC - East Floe/Sed 3M	Replace Elec Equip	\$180,000	
2019	E30190	SWT_74MCC30190	MCC - West Floe/Sed 2M	Replace Elec Equip	\$180,000	
2019	E30191	SWT_74MCC30191	MCC - Gen Bldg 1G	Replace Elec Equip	\$90,000	
2019	E30192	SWT_74MCC30192	MCC - Gen Bldg 7M	Replace Elec Equip	\$90,000	
2019	E30195	SWT_74MCC30195	MCC - Washwater BL	Replace Elec Equip	\$120,000	
2019	E30361	SWT_77PMP30361	Chilled Water Pump	Rebuild pump	\$5,000	
2019	E30833	SWT_85PIP30833	Irrigation	Replace	\$20,000	
2019	E30435	GPP_02ELC30435	MCC - Graystone PS	Replace Elec Equip	\$60,000	Propose combining all MCC replacement in a small capitol project
2019	E30829	SWT_87INS30829	Evacuation Alarm System	Replace	\$10,000	
2019	E30474	SWT_53MDR30474	ME-38 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30474	SWT_53MDR30474	ME-39 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30476	SWT_53MDR30476	ME-40 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30476	SWT_53MDR30476	ME-41 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30483	SWT_53MDR30483	ME-43 Train Drive Chain	Replace Drive Chain	\$425	
2019	E30483	SWT_53MDR30483	ME-44 Train Drive Chain	Replace Drive Chain	\$425	
2020	E30050	SWT_16TNK30050	Aqua NH4 Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in same year

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30106	SWT_17MTR30106	Carbon Mixer Motor - North	Replace motor	\$3,750	
2020	E30111	SWT_17MTR30111	Carbon Mixer Motor - South	Replace motor	\$3,750	
2020	E30104	SWT_17TNK30104	Carbon Tank - North	Clean and inspect tank	\$5,000	Inspections to be combined with other plants in same year
2020	E30109	SWT_17TNK30109	Carbon Tank - South	Clean and inspect tank	\$5,000	
2020	E30138	SWT_25TNK30138	OCL Storage Tank 1	repair lining	\$25,000	
2020	E30144	SWT_25TNK30144	OCL Storage Tank 3	Repair lining	\$25,000	
2020	E42810	SWT_26MIS42810	OZ Gen. Shell 1 (SOZOG01)	clean shell & dielectrics	\$20,000	
2020	E42811	SWT_26MIS42811	OZ Gen. Shell 2 (SOZOG02)	clean shell & dielectrics	\$20,000	
2020	E42812	SWT_26MIS42812	OZ Gen. Shell 3 (SOZOG03)	clean shell & dielectrics	\$20,000	
2020	E30234	SWT_49VOP30234	Filter 4E Effluent Vlv V-F-57 Act	Replace VOP	\$6,750	
2020	E30244	SWT_49VOP30244	Filter 5E Effluent Vlv V-F-58 Act	Replace VOP	\$6,750	
2020	E30254	SWT_49VOP30254	Filter 6E Effluent Vlv V-F-59 Act	Replace VOP	\$6,750	
2020	E46000	SWT_58PMP46000	WWC Poly Metering Pump #1	Replace pump	\$1,300	
2020	E46001	SWT_58PMP46001	WWC Poly Metering Pump #2	Replace pump	\$1,300	
2020	E30460	SWT_53MTR30460	Sludge Transfer Pump P-6 Motor	Replace motor	\$1,200	
2020	E30462	SWT_53MTR30462	Sludge Transfer Pump P-7 Motor	Replace motor	\$1,200	
2020	E30519	SWT_53VLV30519	Sludge Pond 1 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30522	SWT_53VLV30522	Sludge Pond 2 Manual Drain Valve	Replace Valve	\$3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30525	SWT_53VLV30525	Sludge Pond 3 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30528	SWT_53VLV30528	Sludge Pond 4 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30531	SWT_53VLV30531	Sludge Pond 5 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30534	SWT_53VLV30534	Sludge Pond 6 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30537	SWT_53VLV30537	Sludge Pond 7 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30540	SWT_53VLV30540	Sludge Pond 8 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30543	SWT_53VLV30543	Sludge Pond 9 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30558	SWT_53VLV30558	Sludge Pond 14 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30559	SWT_53VLV30559	Sludge Pond 14 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30561	SWT_53VLV30561	Sludge Pond 15 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30562	SWT_53VLV30562	Sludge Pond 15 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30564	SWT_53VLV30564	Sludge Pond 16 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30565	SWT_53VLV30565	Sludge Pond 16 Manual Fill Valve	Replace Valve	\$3,000	
2020			Particle Counter Calibrations	Factory Calibration	\$4,800	
2020	E30267	SWT_49VOP30267	Filter 1W Effluent Vlv V-F-20 Act	Replace STWTP WEST FILTER #1 E	\$8,000	
2020	E30277	SWT_49VOP30277	Filter 2W Effluent Vlv V-F-21 Act	Replace VOP	\$6,750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30741	SWT_50STR30741	Floc - Sed Basin 2 - West	Recoat basin	\$500,000	
2020	E30474	SWT_53MDR30474	Sludge Rake Drive 1E ME-38/39	Replace Mechanical Drive	\$15,000	
2020	E30476	SWT_53MDR30476	Sludge Rake Drive 1E ME-40/41	Replace Mechanical Drive	\$15,000	
2020	E30478	SWT_53MDR30478	Sludge Cross Collector 1E ME-42	Replace Mechanical Drive	\$15,000	
2020	E30483	SWT_53MDR30483	Sludge Rake Drive 2E ME-43/44	Replace Mechanical Drive	\$15,000	
2020	E30485	SWT_53MDR30485	Sludge Rake Drive 2E ME-45/46	Replace Mechanical Drive	\$15,000	
2020	E30487	SWT_53MDR30487	Sludge Cross Collector 2E ME-47	Replace Mechanical Drive	\$15,000	
2020	E30475	SWT_53MTR30475	Sludge Rake Drive Motor ME-38/39	Replace motor	\$1,200	
2020	E30477	SWT_53MTR30477	Sludge Rake Drive Motor ME-40/41	Replace motor	\$1,200	
2020	E30479	SWT_53MTR30479	Sludge Cross Collector ME-42 Motor	Replace Motor	\$1,200	
2020	E30484	SWT_53MTR30484	Sludge Rake Drive ME-43/44 Motor	Replace Motor	\$750	
2020	E30486	SWT_53MTR30486	Sludge Rake Drive ME-45/46 Motor	Replace Motor	\$750	
2020	E30488	SWT_53MTR30488	Sludge Cross Collector ME-47 Motor	Replace Motor	\$1,200	
2020	E30459	SWT_53PMP30459	Sludge Transfer Pump P-6	Replace Pump	\$20,000	
2020	E30461	SWT_53PMP30461	Sludge Transfer Pump P-7	Replace Pump	\$20,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30469	SWT_53STR30469	Pig Launching STA 1	Overhaul vault	\$10,000	
2020	E30470	SWT_53STR30470	Pig Launching STA 2	Overhaul vault	\$10,000	
2020	E30471	SWT_53STR30471	Pig Launching STA 3	Overhaul vault	\$10,000	
2020	E30472	SWT_53STR30472	Pig Launching STA 4	Overhaul vault	\$10,000	
2020	E30473	SWT_53STR30473	Pig Launching STA 5	Overhaul vault	\$10,000	
2020	E30480	SWT_53STR30480	Underflow Vault Basin 1 East	Overhaul Vault	\$8,000	
2020	E30489	SWT_53STR30489	Underflow Vault Basin 2 East	Overhaul Vault	\$8,000	
2020	E30498	SWT_53STR30498	Underflow Vault Basin 1 West	Overhaul vault	\$4,000	
2020	E30507	SWT_53STR30507	Underflow Vault Basin 2 West	Overhaul vault	\$4,000	
2020	E30513	SWT_53VLV30513	Sludge Decant Pump Guard Valve 1	Replace Valve	\$1,800	
2020	E30517	SWT_53VLV30517	Sludge Decant Pump Guard Valve 2	Replace Valve	\$1,800	
2020	E30520	SWT_53VLV30520	Sludge Pond 1 Manual Fill Valve	Replace Valve	\$3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30523	SWT_53VLV30523	Sludge Pond 2 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30526	SWT_53VLV30526	Sludge Pond 3 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30529	SWT_53VLV30529	Sludge Pond 4 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30566	SWT_54INS30566	Chlorine Analyzer - East Coagulated	Replace I&C	\$4,050	
2020	E30567	SWT_54INS30567	Chlorine Analyzer - East Filtered	Replace I&C	\$4,050	
2020	E30568	SWT_54INS30568	Chlorine Analyzer - East Settled	Replace I&C	\$4,050	
2020	E30569	SWT_54INS30569	Chlorine Analyzer - West Coagulated	Replace I&C	\$4,050	
2020	E30570	SWT_54INS30570	Chlorine Analyzer - West Filtered	Replace I&C	\$4,050	
2020	E30571	SWT_54INS30571	Chlorine Analyzer - West Settled	Replace I&C	\$4,050	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30572	SWT_54INS30572	Chlorine Analyzer - Graystone	Replace I&C	\$4,050	
2020	E30573	SWT_54INS30573	Chlorine Analyzer - Snell	Replace I&C	\$4,050	
2020	E45140	SWT_24INS45140	Ambient O2 Analyzer (AIT-726-East)	Replace O2 analyzer	\$3,000	
2020	E43072	SWT_17EDR43072	Carbon Pump 1 VFD	Replace VFD	\$3,000	
2020	E43073	SWT_17EDR43073	Carbon Pump 2 VFD	Replace VFD	\$3,000	
2020	E43074	SWT_17EDR43074	Carbon Pump 3 VFD	Replace VFD	\$3,000	
2020	E30695	SWT_50STR30695	Floc - Sed Basin 2 - East	Recoate basin	\$500,000	
2020	E30492	SWT_53MDR30492	ME-28 Train Drive Chain	Replace drive chain	\$425	
2020	E30492	SWT_53MDR30492	ME-29 Train Drive Chain	Replace drive chain	\$425	
2020	E30494	SWT_53MDR30494	ME-30 Train Drive Chain	Replace drive chain	\$425	
2020	E30494	SWT_53MDR30494	ME-31 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-33 Train Chain	Replace flight chain	\$10,340	Coordinate work after basin coating project
2020	E30501	SWT_53MDR30501	ME-33 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-33 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30501	SWT_53MDR30501	ME-34 Train Chain	Replace flight chain	\$10,340	
2020	E30501	SWT_53MDR30501	ME-34 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-34 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30503	SWT_53MDR30503	ME-35 Train Chain	Replace flight chain	\$10,340	
2020	E30503	SWT_53MDR30503	ME-35 Train Drive Chain	Replace drive chain	\$425	
2020	E30503	SWT_53MDR30503	ME-35 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30503	SWT_53MDR30503	ME-36 Train Chain	Replace flight chain	\$10,340	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30503	SWT_53MDR30503	ME-36 Train Drive Chain	Replace drive chain	\$425	
2020	E30503	SWT_53MDR30503	ME-36 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30474	SWT_53MDR30474	ME-38 Train Drive Chain	Replace drive chain	\$425	
2020	E30474	SWT_53MDR30474	ME-39 Train Drive Chain	Replace drive chain	\$425	
2020	E30476	SWT_53MDR30476	ME-40 Train Drive Chain	Replace drive chain	\$425	
2020	E30476	SWT_53MDR30476	ME-41 Train Drive Chain	Replace drive chain	\$425	
2020	E30330	SWT_19MIX30330	Cationic Poly Tank 10 Mixer	Replace mixer	\$4,500	
2020	E30332	SWT_19MIX30332	Cationic Poly Tank 11 Mixer	Replace mixer	\$4,500	
2020	E30086	SWT_46VOP30086	Filter 3W Backwash Vlv V-F-9 Act	Replace actuator	\$7,000	
2020	E30088	SWT_46VOP30088	Filter 4W Backwash Vlv V-F-10 Act	Replace actuator	\$7,000	
2020	E30512	SWT_53VLV30512	Sludge Decant Pump Check Valve 1	Replace	\$1,000	
2020	E30516	SWT_53VLV30516	Sludge Decant Pump Check Valve 2	Replace	\$1,000	
2020	E45154	SWT_29PMP45154	SA Metering Pump 1 VFD	Replace VFD	\$3,000	
2020	E45156	SWT_29PMP45156	SA Metering Pump 2 VFD	Replace VFD	\$3,000	
2020	E45157	SWT_29PMP45157	SA Metering Pump 3 VFD	Replace VFD	\$3,000	
2020	E30348	SWT_33MTR30348	Nonionic Poly Transfer Pump Motor	Replace Motor	\$750	
2020	E30347	SWT_33PMP30347	Nonionic Poly Transfer Pump	Replace Pump	\$2,250	
2020			Electrical System Testing	Electrical System Testing	\$35,000	
2020			Electrical Testing	Electrical testing	\$7,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E30096	SWT_17MTR30096	Carbon Pump 1 Motor	Replace motor	\$750	
2021	E30098	SWT_17MTR30098	Carbon Pump 2 Motor	Replace motor	\$750	
2021	E30100	SWT_17MTR30100	Carbon Pump 3 Motor	Replace motor	\$750	
2021	E30095	SWT_17PMP30095	Carbon Pump 1	Replace pump	\$6,000	
2021	E30097	SWT_17PMP30097	Carbon Pump 2	Replace pump	\$6,000	
2021	E30099	SWT_17PMP30099	Carbon Pump 3	Replace pump	\$6,000	
2021	E45063	SWT_24INS45063	Oxygen Gas Temp. Inst. (TIT-501-OZ)	Replace temperature instr.	\$2,100	
2021	E45493	SWT_24INS45493	LOX Press. Inst. (PIT-101-LOX)	Replace pressure instr.	\$2,550	
2021	E45000	SWT_24TNK45000	LOX Tank 1	Paint tank	\$10,000	
2021	E45001	SWT_24TNK45001	LOX Tank 2	Paint tank	\$10,000	
2021	E42826	SWT_26FLO42826	Mass Flow Meter (OZ-FIT-311)	Replace flow meter	\$5,000	
2021	E42828	SWT_26FLO42828	Mass Flow Meter (OZ-FIT-331)	Replace flow meter	\$5,000	
2021	E42872	SWT_26FLO42872	Mass Flow Meter (OZ-FIT-321)	Replace flow meter	\$5,000	
2021	E45113	SWT_26FLO45113	West OZ Gas Flow Meter	Replace flow meter	\$5,000	
2021	E45122	SWT_26FLO45122	East OZ Gas Flow Meter	Replace flow meter	\$5,000	
2021	E45088	SWT_26INS45088	WOZ Off Gas Temp. (TE/TIT-501-WOZD)	Replace temperature instr.	\$2,100	
2021	E45488	SWT_26INS45488	EOZ Press. Inst. (PIT-111-EOZ)	Replace pressure instr.	\$2,550	
2021	E45489	SWT_26INS45489	WOZ Press. Inst. (PIT-111-WOZ)	Replace pressure instr.	\$2,550	
2021	E45490	SWT_26INS45490	WOZ Press. Inst. (PIT-116-WOZ)	Replace pressure instr.	\$2,550	
2021	E45491	SWT_26INS45491	EOZ Press. Inst. (PIT-116-EOZ)	Replace pressure instr.	\$2,550	
2021	E45492	SWT_26INS45492	OGB Press. Inst. (PIT-101-OZ)	Replace pressure instr.	\$2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46479	SWT_26INS46479	EOZ Contactor Level (LIT-204-EOW)	Replace level instr.	\$2,550	
2021	E46481	SWT_26INS46481	WOZ Contactor Level (LIT-204-WOW)	Replace level instr.	\$2,550	
2021	E42791	SWT_26PMP42791	EOZ Underdrain Pump (SUDP-01)	Overhaul pump	\$5,000	
2021	E42792	SWT_26PMP42792	WOZ Underdrain Pump (SUDP-02)	Overhaul pump	\$5,000	
2021	E42848	SWT_26VLV42848	EOZ CA Reg. Valve (CA-4)	Replace valve	\$3,200	
2021	E42849	SWT_26VLV42849	EOZ CA Reg. Valve (CA-5)	Replace valve	\$3,200	
2021	E42851	SWT_26VLV42851	OZ Gen Air Press. Reg. Valve (CA-1)	Replace valve	\$3,200	
2021	E49881	SWT_26VLV49881	East OZ VAR (OG-4)	Replace valve	\$6,300	
2021	E49882	SWT_26VLV49882	East OZ VAR (OG-5)	Replace valve	\$6,300	
2021	E49883	SWT_26VLV49883	East OZ VAR (OG-6)	Replace valve	\$6,300	
2021	E49884	SWT_26VLV49884	East OZ VAR (OG-7)	Replace valve	\$6,300	
2021	E49885	SWT_26VLV49885	West OZ VAR (OG-11)	Replace valve	\$6,300	
2021	E49886	SWT_26VLV49886	West OZ VAR (OG-12)	Replace valve	\$6,300	
2021	E49887	SWT_26VLV49887	West OZ VAR (OG-13)	Replace valve	\$6,300	
2021	E49888	SWT_26VLV49888	West OZ VAR (OG-14)	Replace valve	\$6,300	
2021	E45132	SWT_27INS45132	Off Gas Temp. (TE/TIT-501-EOZD)	Replace temperature instr.	\$2,100	
2021	E45186	SWT_27INS45186	EOZ Temp Unit 1 (TE/TIT-511A-EOZD)	Replace temperature instr.	\$2,100	
2021	E45187	SWT_27INS45187	EOZ Temp Unit 2 (TE/TIT-521A-EOZD)	Replace temperature instr.	\$2,100	
2021	E45188	SWT_27INS45188	WOZ Temp Unit 1 (TE/TIT-511A-WOZD)	Replace temperature instr.	\$2,100	
2021	E45189	SWT_27INS45189	WOZ Temp Unit 2 (TE/TIT-521A-WOZD)	Replace temperature instr.	\$2,100	
2021	E45190	SWT_27INS45190	EOZ D/P Inst. Unit 1(PDIT-111-EOZD)	Replace pressure instr.	\$2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45191	SWT_27INS45191	EOZ D/P Inst. Unit 2(PDIT-121-EOZD)	Replace pressure instr.	\$2,550	
2021	E45192	SWT_27INS45192	WOZ D/P Inst. Unit 1(PDIT-121-WOZD)	Replace pressure instr.	\$2,550	
2021	E45193	SWT_27INS45193	WOZ D/P Inst. Unit 1(PDIT-111-WOZD)	Replace pressure instr.	\$2,550	
2021	E30630	SWT_28INS30630	PP Bldg MUX 14	Replace I&C	\$33,000	
2021	E45151	SWT_29FLO45151	SA Mass Flow Meter (FE/FIT-301-SA)	Replace flow meter	\$5,000	
2021	E45152	SWT_29FLO45152	SA Mass Flow Meter (FE/FIT-302-SA)	Replace flow meter	\$5,000	
2021	E46486	SWT_29INS46486	SA Tank Level Inst. (LIT-201-SA)	Replace level instr.	\$2,550	
2021	E49894	SWT_29INS49894	SA Tank Temp. Inst. (TE/TIT-504-SA)	Replace temperature instr.	\$2,100	
2021	E49895	SWT_29INS49895	SA Spill Tank Level (LE-207-SA)	replace level instr.	\$2,550	
2021	E42861	SWT_29PMP42861	SA Sump Pump (SSAP-06)	Replace pump	\$24,000	
2021	E45154	SWT_29PMP45154	SA Metering Pump 1 (SSAP01)	Replace pump	\$6,000	
2021	E45156	SWT_29PMP45156	SA Metering Pump 2 (SSAP02)	Replace pump	\$6,000	
2021	E45157	SWT_29PMP45157	SA Metering Pump 3 (SSAP03)	Replace pump	\$6,000	
2021	E42850	SWT_29VLV42850	SA CA Regulating Valve (CA-6)	Replace valve	\$3,200	
2021	E46484	SWT_34INS46484	OZQ Tnk 1 Level Inst. (LIT-201-OQA)	Replace level instr.	\$2,550	
2021	E49868	SWT_34INS49868	OZQ Tnk 2 Level Inst. (LIT-202-OQA)	Replace level instr.	\$2,550	
2021	E45003	SWT_34PMP45003	OQA Metering Pump 1 (SOQAP01)	Replace Pump	\$6,000	
2021	E45004	SWT_34PMP45004	OQA Metering Pump 2 (SOQAP02)	Replace Pump	\$6,000	
2021	E45006	SWT_34PMP45006	OQA Metering Pump 3 (SOQAP03)	Replace Pump	\$6,000	
2021	E45007	SWT_34PMP45007	OQA Metering Pump 4 (SOQAP04)	Replace Pump	\$6,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45008	SWT_34PMP45008	OQA Metering Pump 5 (SOQAP05)	Replace Pump	\$6,000	
2021	E45002	SWT_34VLV45002	OQA CA Unloading Sta. Valve (CA-8)	Replace valve	\$3,200	
2021	E45020	SWT_34VLV45020	OQA Tank 1 Outlet Valve (OQA-12)	Replace valve	\$500	
2021	E45022	SWT_34VLV45022	OQA Tank 2 Outlet Valve (OQA-13)	Replace valve	\$500	
2021	E42775	SWT_35CMP42775	SN Compressor #1	Replace compressor	\$5,500	
2021	E42776	SWT_35CMP42776	SN Compressor #2	Replace compressor	\$5,500	
2021	E45194	SWT_35FLO45194	SN Mass Flow Meter (FIT-301-SN)	Replace flow meter	\$5,000	
2021	E42863	SWT_35INS42863	SN Press. Inst. (PIT-105-SN)	Replace pressure instr.	\$2,550	
2021	E45195	SWT_35INS45195	SN Temp. Inst. (TIT-301-SN)	Replace temperature instr.	\$2,100	
2021	E42777	SWT_35MIS42777	SN Air Dryer #1	Replace air dryer	\$2,500	
2021	E42778	SWT_35MIS42778	SN Air Dryer #2	Replace air dryer	\$2,500	
2021	E30203	SWT_49STR30203	Filter 1 East	Recoat filter tank	\$50,000	
2021	E30213	SWT_49STR30213	Filter 2 East	Recoat filter tank	\$50,000	
2021	E30232	SWT_49STR30232	Filter 4 East	Recoat filter tank	\$50,000	
2021	E30242	SWT_49STR30242	Filter 5 East	Recoat filter tank	\$50,000	
2021	E30252	SWT_49STR30252	Filter 6 East	Recoat filter tank	\$50,000	
2021	E30838	SWT_49STR30838	Filter 3 East	Recoat filter tank	\$50,000	
2021	E30667	SWT_50FLO30667	Poly Floc Mag Meter	Replace flow meter	\$5,000	
2021	E30671	SWT_50MTR30671	Gas Master Motor	Replace motor	\$1,200	
2021	E30671	SWT_50MTR30671	Gas Master Motor	Replace motor	\$1,200	
2021	E30212	SWT_54INS30212	Filter 1E Turbidimeter	Replace instrument	\$5,000	
2021	E30222	SWT_54INS30222	Filter 2E Turbidimeter	Replace instrument	\$5,000	
2021	E30231	SWT_54INS30231	Filter 3E Turbidimeter	Replace instrument	\$5,000	
2021	E30241	SWT_54INS30241	Filter 4E Turbidimeter	Replace instrument	\$5,000	
2021	E30251	SWT_54INS30251	Filter 5E Turbidimeter	Replace instrument	\$5,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E30261	SWT_54INS30261	Filter 6E Turbidimeter	Replace instrument	\$5,000	
2021	E45175	SWT_58EDR45175	WWC Return Pump (SCWWP-01) VFD-11	Replace VFD	\$20,000	
2021	E45176	SWT_58EDR45176	WWC Return Pump (SCWWP-02) VFD-12	Replace VFD	\$20,000	
2021	E45177	SWT_58EDR45177	WWC Return Pump (SCWWP-03) VFD-13	Replace VFD	\$20,000	
2021	E45178	SWT_58EDR45178	WWC Return Pump (SCWWP-04) VFD-14	Replace VFD	\$20,000	
2021	E49874	SWT_58INS49874	Wet Well Level Inst. (LE/LIT-FWR)	Replace level instr.	\$2,550	
2021	E46217	SWT_58MDR46217	Longitudinal Collector (SWWCSL01)	Rebuild mechanical drive	\$3,376	
2021	E46218	SWT_58MDR46218	Cross Collector (SWWCSL02)	Rebuild mechanical drive	\$3,376	
2021	E46219	SWT_58MDR46219	Longitudinal Collector (SWWCSL03)	Rebuild mechanical drive	\$3,376	
2021	E46220	SWT_58MDR46220	Cross Collector (SWWCSL04)	Rebuild mechanical drive	\$3,376	
2021	E46211	SWT_58MIX46211	WWC Floc Mixer (SWWCFL01)	Overhaul mixer	\$2,000	
2021	E46212	SWT_58MIX46212	WWC Floc Mixer (SWWCFL02)	Overhaul mixer	\$2,000	
2021	E46213	SWT_58MIX46213	WWC Floc Mixer (SWWCFL03)	Overhaul mixer	\$2,000	
2021	E46214	SWT_58MIX46214	WWC Floc Mixer (SWWCFL04)	Overhaul mixer	\$2,000	
2021	E46215	SWT_58MIX46215	WWC Floc Mixer (SWWCFL05)	Overhaul mixer	\$2,000	
2021	E46216	SWT_58MIX46216	WWC Floc Mixer (SWWCFL06)	Overhaul mixer	\$2,000	
2021	E45171	SWT_58MTR45171	WWC Pump SWWP-01 Motor	Rehab motor	\$2,800	
2021	E45172	SWT_58MTR45172	WWC Pump SWWP-02 Motor	Rehab motor	\$2,800	
2021	E45173	SWT_58MTR45173	WWC Pump SWWP-03 Motor	Rehab motor	\$2,800	
2021	E45174	SWT_58MTR45174	WWC Pump SWWP-04 Motor	Rehab motor	\$2,800	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E42790	SWT_58PMP42790	WWC Underdrain Sump Pump (SUDP-03)	Replace pump	\$13,000	
2021	E42869	SWT_58PMP42869	WWC Return Pump (SWWP-01)	Overhaul pump	\$17,000	
2021	E42870	SWT_58PMP42870	WWC Return Pump (SWWP-02)	Overhaul pump	\$17,000	
2021	E42871	SWT_58PMP42871	WWC Return Pump (SWWP-03)	Overhaul pump	\$25,000	
2021	E42872	SWT_58PMP42872	WWC Return Pump (SWWP-04)	Overhaul pump	\$25,000	
2021	E30189	SWT_74ELC30189	Auto Transfer Switch ATS1	Replace ATS	\$10,000	
2021	E30197	SWT_74MIS30197	Electrical Shop Hoist	Rehab STWTP ELECTRICAL SHOP HO	\$7,579	
2021	E46218	SWT_58MDR46218	Cross Collector Chain (SWWCSLC02)	Replace chain	\$583	
2021	E46220	SWT_58MDR46220	Cross Collector Chain (SWWCSLC04)	Replace chain	\$583	
2021	E46217	SWT_58MDR46217	Drive Chains for (SWWCSLC01)	Replace drive chain	\$275	
2021	E46218	SWT_58MDR46218	Drive Chains for (SWWCSLC02)	Replace drive chain	\$275	
2021	E46219	SWT_58MDR46219	Drive Chains for (SWWCSLC03)	Replace drive chain	\$275	
2021	E46220	SWT_58MDR46220	Drive Chains for (SWWCSLC04)	Replace drive chain	\$275	
2021	E46217	SWT_58MDR46217	Flights for (SWWCSLC01)	Replace flights	\$10,000	
2021	E46218	SWT_58MDR46218	Flights for (SWWCSLC02)	Replace flights	\$2,500	
2021	E46219	SWT_58MDR46219	Flights for (SWWCSLC03)	Replace flights	\$10,000	
2021	E46220	SWT_58MDR46220	Flights for (SWWCSLC04)	Replace flights	\$2,500	
2021	E45035	SWT_23PMP45035	HP Metering Pump 1 VFD	Replace VFD	\$3,000	
2021	E45037	SWT_23PMP45037	HP Metering Pump 2 VFD	Replace VFD	\$3,000	
2021	E45039	SWT_23PMP45039	HP Metering Pump 3 VFD	Replace VFD	\$3,000	
2021	E46217	SWT_58MDR46217	Long. Collector Chain (SWWCSLC01)	Replace chain	\$4,180	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46219	SWT_58MDR46219	Long. Collector Chain (SWWCSLC03)	Replace chain	\$4,180	
2021	E30483	SWT_53MDR30483	ME-43 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30483	SWT_53MDR30483	ME-44 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30485	SWT_53MDR30485	ME-45 Train Drive Chain	Replace drive chain	\$425	
2021	E30485	SWT_53MDR30485	ME-45 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30485	SWT_53MDR30485	ME-46 Train Drive Chain	Replace drive chain	\$425	
2021	E30485	SWT_53MDR30485	ME-46 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E45003	SWT_34PMP45003	OQA Metering Pump 1 VFD	Replace VFD	\$3,000	
2021	E45004	SWT_34PMP45004	OQA Metering Pump 2 VFD	Replace VFD	\$3,000	
2021	E45006	SWT_34PMP45006	OQA Metering Pump 3 VFD	Replace VFD	\$3,000	
2021	E45007	SWT_34PMP45007	OQA Metering Pump 4 VFD	Replace VFD	\$3,000	
2021	E45008	SWT_34PMP45008	OQA Metering Pump 5 VFD	Replace VFD	\$3,000	
2021	E42859	SWT_86PMP42859	OQA Sump Pump (SOQAP06)	Replace pump	\$6,250	
2021			Underground Diesel Storage Tank	Inspect tank	\$15,000	Inspections to be combined with other plants in same year
2021	E30090	SWT_46VOP30090	Filter 5W Backwash Vlv V-F-11 Act	Replace actuator	\$7,000	
2021	E30092	SWT_46VOP30092	Filter 6W Backwash Vlv V-F-12 Act	Replace actuator	\$7,000	
FY18-21 STWTP TOTAL =					\$5,495,468	

Table 4. Silicon Valley Advanced Water Purification Center

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000	
2019	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000	
2019	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000	
2019	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing		
2019	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing		
2019	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing		
2019	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing		
2019	E52602	SVA_60ELC52602	Transformer	Electrical Testing		
2019	E73432	SVA_65ELC73432	Transformer	Electrical Testing		
2019	E73300	SVA_64ELC73300	Transformer	Electrical Testing		
2019	E53082	SVA_16ELC53082	Transformer	Electrical Testing		
2021	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000	
2021	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000	
2021	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000	
2021	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing		
2021	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing		
2021	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing		
2021	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing		
2021	E52602	SVA_60ELC52602	Transformer	Electrical Testing		
2021	E73432	SVA_65ELC73432	Transformer	Electrical Testing		
2021	E73300	SVA_64ELC73300	Transformer	Electrical Testing		
2021	E53082	SVA_16ELC53082	Transformer	Electrical Testing		
FY18-21 SVAWPC TOTAL =					\$108,000	

Table 5. Treated Water Transmission and Distribution Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	WPL	E54004	WPL_05FLO54004	Granger T.O. Flow Meter	Replace meter	\$10,500	
2018	WPL	E54003	WPL_05FLO54003	Farndon T.O. Flow Meter	Replace flow meter	\$10,500	
2018	WPL	E54001	WPL_05FLO54001	Congress T.O. Flow Meter	Replace flow meter	\$12,500	
2019	PEP	E40175	PEP_05PIP40175	Ocala L.V. to Aborn Turnout. 54"	Inspection, Visual	\$15,000	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing.
2019	PEP	E40206	PEP_05STR40206	Manhole - Sta. 113+50	Rehab vault	\$8,000	
2019	PEP	E40202	PEP_05STR40202	Manhole - Sta. 95+00	Rehab vault	\$10,000	
2019	PEP	E40200	PEP_05STR40200	Manhole - Sta. 89+75	Rehab vault	\$8,000	
2019	PEP	E40199	PEP_05STR40199	Manhole - Sta. 84+90	Rehab vault	\$10,000	
2019	PEP	E40197	PEP_05STR40197	Manhole - Sta. 73+70	Rehab vault	\$8,000	
2019	PEP	E40196	PEP_05STR40196	Manhole - Sta. 69+90	Rehab vault	\$10,000	
2019	PEP	E40191	PEP_05STR40191	Manhole - Sta. 61+90	Rehab vault	\$8,000	
2019	PEP	E40190	PEP_05STR40190	Manhole - Sta. 57+60	Rehab vault	\$10,000	
2019	PEP	E40183	PEP_05STR40183	Manhole -Sta. 28+30	Rehab vault	\$10,000	
2019	PEP	E40182	PEP_05STR40182	Manhole - Sta. 23+22	Rehab vault	\$8,000	
2019	PEP	E40177	PEP_05STR40177	Manhole - Sta. 11+75	Overhaul Vault	\$10,000	
2019	PEP	E40189	PEP_05STR40189	Manhole - Sta. 47+40	Rehab vault	\$8,000	
2019	PEP	E40218	PEP_05STR40218	Manhole - Sta. 133+70	Rehab vault	\$10,000	
2019	PEP	E40213	PEP_05STR40213	Manhole - Sta. 120+46	Rehab vault	\$8,000	
2020	EPL	E40119	EPL_05PIP40119	Ocala L.V. to Aborn T.O.	Inspection, video	\$34,050	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing.
2020	EPL	E54013	EPL_05FLO54013	Norwood T.O. Flow Meter	Replace flow meter	\$7,500	
2020	EPL	E54012	EPL_05FLO54012	Ocala T.O. Flow Meter	Replace flow meter	\$12,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	EPL			Patt Ave L.V. to Ocala L.V.	Inspection, video	\$45,000	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing. Coordination with PWTP.
FY18-21 TW TOTAL =						\$273,050	

Table 6. Raw Water Transmission and Distribution Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	AFM	E40276	AFM_03PIP40276	CPP to Coyote Cr.	Inspect pipeline	\$4,700	Work will need the support of utility field maintenance
2020	AVP	E41398	AVP_03STR41398	Shannon L.V. Calero Resrvoir 78 In	Inspection, eddy current	\$38,700	Work will need the support of utility field maintenance, raw water ops, and watersheds to dewater line
2020	AVP	E41354	AVP_03STR41354	Coleman L.V. - Shannon L.V. 72 In	Inspection, eddy current	\$52,050	
2020	AVP			Coleman L.V. - Shannon L.V. - 78 In	Inspection, eddy current	\$13,800	
2020	AVP	E41398	AVP_03STR41398	Shannon L.V. Calero Resrvoir- 48 In	Inspection	\$1,400	
2020	SCP	E40545	SCP_03STR40545	Rodeo T.O.- Stevens Creek TO 30 In A	Inspection, video	\$34,300	May need watershed support to dewater line
2020	SCP	E40538	SCP_03STR40538	Saratoga T.O. To Rodeo TO 33"	Inspection, video	\$11,300	
2020	SCP	E40540	SCP_03STR0018	Stevens Cr. L.V. - Sta. 0+84	Replace valve	\$100,000	
2020	STFM	E44006	STF_03STR44006	Valve Structure to STWTP	Inspection, eddy current	\$6,150	To be done in conjunction with AVP
2021	CDL		CPP to Coyote Cr.	Inspect pipeline		\$ 10,000	
2021	CPL	E41532	CPL_03STR41532	Conc Vault at Grd. - Sta. 243+96.6	Overhaul vault - Refurb	\$2,000	Will need watershed support to dewater line
2021	CPL	E41515	CPL_03STR41515	Manhole - Sta. 103+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41516	CPL_03STR41516	Manhole - Sta. 117+99	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41521	CPL_03STR41521	Manhole - Sta. 156+90	Overhaul vault - Refurb	\$2,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	CPL	E41522	CPL_03STR41522	Manhole - Sta. 167+50	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41523	CPL_03STR41523	Manhole - Sta. 170+10	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41524	CPL_03STR41524	Manhole - Sta. 173+57	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41527	CPL_03STR41527	Manhole - Sta. 191+19	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41528	CPL_03STR41528	Manhole - Sta. 204+93.06	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41529	CPL_03STR41529	Manhole - Sta. 215+17.75	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41533	CPL_03STR41533	Manhole - Sta. 259+47.46	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41509	CPL_03STR41509	Manhole - Sta. 27+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41534	CPL_03STR41534	Manhole - Sta. 270+02	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41512	CPL_03STR41512	Manhole - Sta. 54+22	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41513	CPL_03STR41513	Manhole - Sta. 71+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41514	CPL_03STR41514	Manhole - Sta. 87+00	Overhaul vault - Refurb	\$2,000	
2021	CPL			Piedmont L.V. - Sta (-0+21) VOP	Replace actuator	\$10,000	
2021	CPL	E41526	CPL_03PIP41526	Pump Out Riser - Sta. 186+25	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41530	CPL_03PIP41530	Pump Out Riser - Sta. 228+96.80	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41519	CPL_03STR41519	Raised Conc Vault - Sta. 141+40	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41505	CPL_03STR41505	Raised Conc Vault - Sta. 0+32	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41502	CPL_03STR41502	Raised Conc Vault - Sta. -0+41.50	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41506	CPL_03STR41506	Raised Conc Vault - Sta. 0+67	Overhaul vault - Refurb	\$12,000	
2021	CPL	E41518	CPL_03STR41518	Raised Conc Vault - Sta. 126+20	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41507	CPL_03STR41507	Raised Conc Vault - Sta. 13+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41510	CPL_03STR41510	Raised Conc Vault - Sta. 41+00	Overhaul vault - Refurb	\$2,000	
FY18-21 RW TOTAL =						\$384,400	

Table 7. Gilroy Reclamation Line Planned Work Projects

There is no planned work for the GRL during years FY 2018-2021.

Table 8. Vasona Pumping Plant Facility Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019				Biennial Electrical Testing	\$ 8,000	
2020	E42202	VPP_74GEN42202	VPP Standby Generator	Replace generator	\$45,000	
2021	E42201	VPP_74ELC42201	Local Ctrl PC Battery Backup	Replace batteries 001	\$ 1,000	
2021	E42274	VPP_19TNK42274	Cat Poly Tank #1	Clean and inspect 002	\$ 5,000	
2021	E42274	VPP_19TNK42274	Cat Poly Tank #1	Repair tank & paint 001	\$ 8,500	
2021	E42275	VPP_19TNK42275	Cat Poly Tank #2	Clean and inspect 002	\$ 5,000	
2021	E42275	VPP_19TNK42275	Cat Poly Tank #2	Repair tank & paint 001	\$ 8,500	
2021	E42290	VPP_74ELC42290	Building UPS	Replace Batteries 001	\$ 2,633	
2021				Biennial Electrical Testing	\$ 8,000	
FY18-21 VPP TOTAL =					\$91,633	

Table 9. Anderson Hydroelectric Facility Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019			Oil Leak detector	Replace detector	\$3,000	
2019			Electrical Testing	Electrical testing	\$12,000	
2021			Electrical Testing	Electrical Testing	\$12,000	
FY18-21 AHY TOTAL =					\$27,000	

Table 10. San Felipe Division Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 008	\$ 40,000	
2018	PPP	E42042	PPP_02MTR42042	Pump Unit 5 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2018	PPP	E42043	PPP_02PMP42043	Pump Unit 5 Pump	Rebuild pump with new couplings & nuts 001	\$ 700,000	
2018	PPP	E42068	PPP_02MTR42068	Pump Unit 7 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	PPP	E42069	PPP_02PMP42069	Pump Unit 7 Pump	Rebuild pump with new couplings & nuts	\$ 700,000	
2018	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 008	\$ 40,000	
2018	CPP	E42339	CPP_77PMP42339	Chilled Water Circulating Pump 1	Rebuild pump	\$ 10,000	
2018	CPP	E42340	CPP_77PMP42340	Chilled Water Circulating Pump 2	Rebuild pump	\$ 10,000	
2018	SCC	E40714	SCC_06STR40714	Santa Clara Tunnel - 102 In.	Tunnel inspection	\$ 20,000	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2018	SCC	E40700	SCC_06STR40700	Fault Crossing - Twin 66 In.	Inspection, eddy current 004	\$ 30,000	
2019	PPP			3rd Party Condition Assessment	Formal assessment 002	\$ 500,000	
2019	PPP	E41484	PPP_78INS41484	Accumulator 1 Level Switch	Replace PACHECO PUMP ACCUMULATOR # 1 LEVEL DETECTOR 4421 2019	\$ 2,550	
2019	PPP	E41486	PPP_78INS41486	Accumulator 2 Level Switch	Replace PACHECO PUMP ACCUMULATOR # 2 LEVEL DETECTOR 4422 2019	\$ 2,550	
2019	PPP	E41488	PPP_78CMP41488	HVOS Air Compressor 2	Replace PACHECO PUMP HVOS AIR COMPRESSOR #2 4426 2019	\$ 4,500	
2019	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 009	\$ 40,000	
2019	PPP	E42109	PPP_02VLV42109	Pump Unit 10 Pump Air Release Valve	Replace PACHECO PUMP UNIT #10 PUMP AIR RELEASE VALVE 2183 2012	\$ 600	
2019	PPP	E42110	PPP_02VLV42110	Pump Unit 10 Pump Discharge Valve	Rehab valve bushings and packing	\$ 5,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	PPP	E42120	PPP_02MTR42120	Pump Unit 11 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2019	PPP	E42121	PPP_02PMP42121	Pump Unit 11 Pump	Rebuild pump with new couplings & nuts	\$ 700,000	
2019	PPP	E42055	PPP_02MTR42055	Pump Unit 6 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2019	PPP	E42056	PPP_02PMP42056	Pump Unit 6 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2019	PPP	E42155	PPP_85INS42155	Streaming Current Detector	Replace PACHECO PUMP WATER QUALITY INSTRUMENTATION 2280 2019	\$ 3,750	
2019	PPP			Electrical Testing	Electrical testing 005	\$ 12,000	
2019	PAC	E40600	PAC_06STR40600	Pacheco Tunnel Reach 2 - 114 Inch	Inspect Tunnel 003	\$ 20,000	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2019	SCC	E40734	SCC_06STR40734	SC County Line To SV-1 - 96 In	Inspection, Eddy Current 002	\$ 310,000	
2019	SCC	E40700	SCC_06STR40700	BIF to SC County Line - 96 In	Inspection, Eddy Current 002	\$ 93,000	
2019	CPP	E42349	CPP_78INS42349	Accumulator 1 Level Switch	Replace COYOTE PUMP HVOS ACCUMULATOR #1 LEVEL SWITCH 4410 2019	\$ 2,550	
2019	CPP	E42351	CPP_78INS42351	Accumulator 2 Level Switch	Replace COYOTE PUMP ACCUMULATOR #2 LEVEL SWITCH 4411 2019	\$ 2,550	
2019	CPP	E42466	CPP_84CMP42466	Air Compressor Fixed	Replace COYOTE PUMP SHOP AIR COMPRESSOR (FIXED) 2041 2019	\$ 4,500	
2019	CPP	E42339	CPP_77PMP42339	Chilled Water Circulating Pump 1	Replace COYOTE PUMP CHILLED WATER CIRCULATING PUMP #1 1922 2019	\$ 600	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42340	CPP_77PMP42340	Chilled Water Circulating Pump 2	Replace COYOTE PUMP CHILLED WATER CIRCULATING PUMP #2 1923 2019	\$ 600	
2019	CPP	E42330	CPP_77PMP42330	Chilled Water Condenser Water Pmp1	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #1 (NP3) 1915 2019	\$ 600	
2019	CPP	E42331	CPP_77PMP42331	Chilled Water Condenser Water Pmp2	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #2 (NP4) 1916 2019	\$ 600	
2019	CPP	E42332	CPP_77PMP42332	Chilled Water Condenser Water Pmp3	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #3 (NP5) 1917 2019	\$ 600	
2019	CPP	E42327	CPP_77CMP42327	Chiller Compressor 1	Replace COYOTE PUMP BUILDING CHILLER COMPRESSOR #1 1912 2019	\$ 4,500	
2019	CPP	E42328	CPP_77CMP42328	Chiller Compressor 2	Replace COYOTE PUMP BUILDING CHILLER COMPRESSOR #2 1913 2019	\$ 4,500	
2019	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 009	\$ 40,000	
2019	CPP	E42478	CPP_85INS42478	Graywater Tank Level Monitor 1	Replace COYOTE PUMP GRAYWATER TANK LEVEL MONITOR #1 2053 2019	\$ 2,550	
2019	CPP	E42480	CPP_85INS42480	Graywater Tank Level Monitor 2	Replace COYOTE PUMP GRAYWATER TANK LEVEL MONITOR #2 2054 2019	\$ 2,550	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42344	CPP_78INS42344	HVOS Pressure Switches	Replace COYOTE PUMP HVOS PRESSURE SWITCHES 4417 2019	\$ 2,550	
2019	CPP	E42465	CPP_84CMP42465	Portable Air Compressor	Replace COYOTE PUMP PORTABLE AIR COMPRESSOR 2040 2019	\$ 4,500	
2019	CPP	E42506	CPP_06PMP42506	Pump Iso Vlv Str Sump Pump	Replace COYOTE PUMP ISOLATION VALVE SUMP PUMP 2074 2019	\$ 600	
2019	CPP	E42363	CPP_02MTR42363	Pump Unit 1 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #1 PUMP MOTOR COOL WATER SUP PUMP 1950 2019	\$ 600	
2019	CPP	E42368	CPP_02VOP42368	Pump Unit 1 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #1 PUMP HVOS DISCHARGE VALVE ACTUATOR 1954 2019	\$ 884	
2019	CPP	E42373	CPP_02MTR42373	Pump Unit 2 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #2 PUMP MOTOR COOL WATER SUP PUMP 1959 2019	\$ 600	
2019	CPP	E42378	CPP_02VOP42378	Pump Unit 2 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #2 PUMP HVOS DISCHARGE VALVE ACTUATOR 1963 2019	\$ 884	
2019	CPP	E42383	CPP_02MTR42383	Pump Unit 3 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #3 PUMP MOTOR COOL WATER SUP PUMP 1968 2019	\$ 600	
2019	CPP	E42388	CPP_02VOP42388	Pump Unit 3 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #3 PUMP HVOS DISCHARGE VALVE ACTUATOR 1972 2019	\$ 884	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42393	CPP_02MTR42393	Pump Unit 4 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #4 PUMP MOTOR COOLWATER SUP PUMP 1977 2019	\$ 600	
2019	CPP	E42398	CPP_02VOP42398	Pump Unit 4 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #4 PUMP HVOS DISCHARGE VALVE ACTUATOR 1981 2019	\$ 884	
2019	CPP	E42403	CPP_02MTR42403	Pump Unit 5 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #5 MOTOR COOL WATER SUP PUMP 1986 2019	\$ 600	
2019	CPP	E42408	CPP_02VOP42408	Pump Unit 5 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #5 PUMP HVOS DISCHARGE VALVE ACTUATOR 1990 2019	\$ 884	
2019	CPP	E42413	CPP_02MTR42413	Pump Unit 6 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #6 MOTOR COOL WATER SUP PUMP 1995 2019	\$ 600	
2019	CPP	E42418	CPP_02VOP42418	Pump Unit 6 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #6 PUMP HVOS DISCHARGE VALVE ACTUATOR 1999 2019	\$ 884	
2019	CPP			Electrical Testing	Electrical testing 005	\$ 9,000	
2020	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 010	\$ 40,000	
2020	PPP	E41490	PPP_02MTR41490	Pump Unit 1 Motor	Rehab Motor 001	\$ 40,000	Contractor UNICO
2020	PPP	E41491	PPP_02PMP41491	Pump Unit 1 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2020	PPP	E42133	PPP_02MTR42133	Pump Unit 12 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	PPP	E42134	PPP_02PMP42134	Pump Unit 12 Pump	Rebuild pump with new couplings & nuts. Rebuild pump and rehab shafting	\$ 700,000	
2020	PPP	E42160	PPP_84CMP42160	Shop Air Compressor	Replace PACHECO PUMP SHOP AIR COMPRESSOR 2286 2019	\$ 4,500	
2020	PPP	E42147	PPP_84CMP42147	Portable Air Compressor	Replace PACHECO PUMP PORTABLE AIR COMPRESSOR 2273 2019	\$ 4,500	
2020	PAC	E40599	PAC_06PIP40599	Pacheco Tunnel Reach 1 - 135 Inch	Inspect Reach 1 tunnel	\$ 120,000	
2020	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 010	\$ 40,000	
2021	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 011	\$ 40,000	
2021	PPP			Electrical Testing	Electrical testing 005	\$ 12,000	
2021	PPP	E42070	PPP_02VLV42070	Pump Unit 7 Pump Air Release Valve	Replace PACHECO PUMP UNIT #7 PUMP AIR RELEASE VALVE 2165 2012	\$ 600	
2021	PPP	E42072	PPP_02VOP42072	Pump Unit 7 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #7 PUMP DISCH VALVE HYD OP	\$ 1,500	
2021	PPP	E42071	PPP_02VLV42071	Pump Unit 7 Pump Discharge Valve	Replace bushings	\$ 5,000	
2021	PPP	E42081	PPP_02MTR42081	Pump Unit 8 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2021	PPP	E42082	PPP_02PMP42082	Pump Unit 8 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2021	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 011	\$ 40,000	
2021	CPP			Formal Condition Assessment	Formal assessment 002	\$ 300,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	CPP			Electrical Testing	Electrical testing 005	\$ 9,000	
2021	SCC			SV-2 to CPP - 96 Inch	Inspection, Eddy Current 002	\$ 163,060	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2021	SCC			SV-1 to SV-2 - 96 Inch	Inspection, Eddy Current 002	\$ 157,480	
2021	SCC			CFI/CFO Levee Road	Repair road 002	\$ 25,000	
FY18-21 SFD TOTAL =						\$7,378,843	

Table 11. Water Supply Management System (Maintenance) Planned Work Projects

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2018	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2018	E65186	Overfelt Pipeline	Inspection	Video inspection	\$5,000	
2018	E65206	Mabury Pond	Repair	Repair plugged overflow pipe	\$10,000	
2018	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2018	E65270	Guadalupe Pipeline	Inspection	Video inspection	\$8,900	
2018	E65270	Guadalupe Pipeline	Replace	Replace inlet valve	\$21,430	
2018	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2018	E65344	Masson Pipeline	Inspection	Video inspection	\$3,400	
2018	E65393	Meridian pipeline	Inspection	Video inspection	\$2,320	
2018	E65393	Meridian pipeline	Repair	Address root issues	\$8,000	
2018	E65706	Kirk Ditch	Repair/replace	Replace inlet valve and bypass valve. Refurbish blockhouse and chemical feed system	\$42,860	
2018	E10794	McGlinchy Ponds	Repair	Grout pipes between ponds #4-#5, #5-#6	\$15,000	
2018	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2018	E66059	Coyote Percolation Pond	Inspection	Inspect levee	\$0	
2018	E66070	Coyote Percolation Dam	Repair	Minor maintenance	\$7,500	
2018	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2018	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2018	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
2018		San Tomas Injection Well	Repair	Repaint valves and pipes	\$10,000	
2019	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2019	E65075	Piedmont Ponds	Replace	Replace fencing	\$14,000	
2019	E65174	Mabury Diversion Dam	Inspection	Inspect Mabury Diversion Dam	\$0	
2019	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2018	E65281	Guadalupe Ponds	Replace	Replace valves from Guadalupe Pipeline to ponds #1, #2 and #3	\$64,290	
2018	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2019	E10777	Budd Avenue Ponds	Repair	Embankment repair	\$120,000	
2019	E10791	Page Ponds	Replace	Replace valve and pipe in crossing	\$41,430	
2019	E65678	Sunnyoaks Pipeline	Inspection	Video inspection	\$5,000	
2019	E10792	Sunnyoaks Ponds	Repair	Embankment repairs	\$120,000	
2019	E65683	Kirk Diversion Facility	Repair	Inspect dam and perform minor repairs	\$10,000	
2019	E10793	Oka Lane Ponds	Replace	Replace inlet valves to ponds #1, #2 and #3	\$64,290	
2019	E65824	Vasona Canal	Repair	Repair pipe at dam	\$75,000	
2019	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2019	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2019	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2019	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
2019	E66301	Uvas-Llagas Transfer Pipeline	Inspection	Video inspection	\$35,200	
2020	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2020	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2020	E65246	Alamitos Ponds	Replace	Replace blow off valve to Guadalupe Creek (overflow)	\$21,430	
2020	E65328	Masson Diversion Facility	Repair	Minor maintenance	\$10,000	
2020	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2020	E10777	Budd Avenue Ponds	Inspection	Inspect pipes	\$3,000	
2020	E65860	Coyote Canal	Repair	Refurbish facility	\$0	CIP
2020	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2020	E66070	Coyote Percolation Dam	Repair	Minor maintenance	\$10,000	
2020	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2020	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2020	E66324	Church Avenue Ponds	Inspection	Video inspection	\$880	
2020	E66324	Church Avenue Ponds	Repair	Sleeve pipes, repair/replace catwalks at pond#1, inspect valves. Embankment repair and Vegetation removal	\$240,000	Steel Catwalk. Approx. \$100K for pipe repair
2021	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2021	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2021	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2021	E10777	Budd Avenue Ponds	Repair	Embankment repair	\$120,000	
2021	E10790	Camden Ponds	Repair	Embankment repair	\$120,000	
2021	E10792	Sunnyoaks Ponds	Repair	Embankment repairs	\$120,000	
2021	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2021	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2021	E66135	Main Avenue Pipeline	Inspection	Video inspection	\$14,200	
2021	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2021	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
FY18-21 WS Maint. TOTAL =					\$2,403,130	

Table 12. Water Supply Management Systems (Operations) Planned Work Projects

Year	Asset #	Asset Name	Description	Cost	Efficiencies and Comments
2018	E10794	Mcglincy Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$174,540	
2018	E66137	Main Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$103,682	Inc. Main Ave desilt basin
2018	E66272	Madrone Pond (8)	Pond grooming/Cleaning/Capacity restoration projects	\$63,117	
2018	E66281	Madrone Pond (9)	Pond grooming/Cleaning/Capacity restoration projects	\$69,135	
2018	E66286	Madrone Pond (10)	Pond grooming/Cleaning/Capacity restoration projects	\$75,466	
2018	E65031	Penitencia (Gross) Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$241,984	
2018	E65706	Kirk Ditch	Pond grooming/Cleaning/Capacity restoration projects	\$100,000	Drain and clean
2018	E65717	Kirk Desilting Basin	Pond grooming/Cleaning/Capacity restoration projects	\$80,000	
2019	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$55,580	
2019	E10791	Page Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$139,915	
2019	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$154,153	
2019	E66250	Madrone Pond (5)	Pond grooming/Cleaning/Capacity restoration projects	\$69,127	
2019	E66255	Madrone Pond (6)	Pond grooming/Cleaning/Capacity restoration projects	\$39,979	
2019	E66263	Madrone Pond (7)	Pond grooming/Cleaning/Capacity restoration projects	\$45,868	
2019	E66346	McClellan Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$95,928	
2019	E10793	Oka Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$315,577	
2019	E65116	Capitol Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$64,267	
2019	E65526	Page Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2019	E65075	Piedmont Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	
2020	E10794	Mcglincy Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$174,540	
2020	E66137	Main Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$103,682	Inc. Main Ave desilt basin
2020	E66222	Madrone Pond (1)	Pond grooming/Cleaning/ Capacity restoration projects	\$128,345	
2020	E66230	Madrone Pond (2)	Pond grooming/Cleaning/ Capacity restoration projects	\$93,486	

Year	Asset #	Asset Name	Description	Cost	Efficiencies and Comments
2020	E66238	Madrone Pond (3)	Pond grooming/Cleaning/ Capacity restoration projects	\$132,020	
2020	E66242	Madrone Pond (4)	Pond grooming/Cleaning/ Capacity restoration projects	\$97,372	
2020	E66324	Church Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$572,412	
2020	E65706	Kirk Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2021	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$55,580	
2021	E10791	Page Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$139,915	
2021	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$154,153	
2021	E10790	Camden Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$802,832	
2021	E65103	Helmsley Pond	Pond grooming/Cleaning/ Capacity restoration projects	\$49,989	
2021	E65526	Page Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2021	E65347	Los Capitancillos Desilt Basin	Pond grooming/Cleaning/ Capacity restoration projects	\$80,000	
FY18-21 WS Ops. TOTAL =				\$4,872,644	