El Dorado Irrigation District

FIVE YEAR

Capital Improvement Plan

2017—2021

Approved October 24, 2016

2017-2021 Capital Improvement Plan

The 2017-2021 Capital Improvement Plan (CIP) was adopted by the board on October 24, 2016, with the caveat that actual expenditures shall not exceed 80% of the planned annual expenditures , as stated on the CIP Summary chart (see chart below). CIP spending shall be monitored via the quarterly CIP expenditures report.

El Dorado Irrigation District

2017-2021 CAPITAL IMPROVEMENT PLAN

	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$2,246,020	$2,033,371	$2,831,762	$256,195	$678,670	$8,046,017
Water	$9,685,378	$6,460,000	$10,395,000	$10,430,000	$7,485,000	$44,455,378
Wastewater	$3,880,000	$5,230,000	$1,195,000	$1,395,000	$2,200,000	$13,900,000
Recycled Water	$430,000	$10,000	$100,000	$0	$0	$540,000
Hydroelectric	$6,593,000	$19,473,500	$14,436,500	$3,842,500	$1,697,000	$46,042,500
Recreation	$0	$0	$0	$0	$0	$0
General District	$4,532,870	$3,582,000	$1,874,000	$1,688,000	$1,771,000	$13,447,870
TOTAL	**$27,367,268**	**$36,788,871**	**$30,832,262**	**$17,611,695**	**$13,831,670**	**$126,431,766**
80% of Plan	**$21,893,815**	**$29,431,096**	**$24,665,809**	**$14,089,356**	**$11,065,336**	**$101,145,412**

2017-2021 CAPITAL IMPROVEMENT PLAN

	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$2,246,020	$2,033,371	$2,831,762	$256,195	$678,670	$8,046,017
Water	$9,685,378	$6,460,000	$10,395,000	$10,430,000	$7,485,000	$44,455,378
Wastewater	$3,880,000	$5,230,000	$1,195,000	$1,395,000	$2,200,000	$13,900,000
Recycled Water	$430,000	$10,000	$100,000	$0	$0	$540,000
Hydroelectric	$6,593,000	$19,473,500	$14,436,500	$3,842,500	$1,697,000	$46,042,500
Recreation	$0	$0	$0	$0	$0	$0
General District	$4,532,870	$3,582,000	$1,874,000	$1,688,000	$1,771,000	$13,447,870
TOTAL	**$27,367,268**	**$36,788,871**	**$30,832,262**	**$17,611,695**	**$13,831,670**	**$126,431,766**

EL DORADO IRRIGATION DISTRICT
FIVE-YEAR CAPITAL IMPROVEMENT PLAN
2016-2020

	2016 PLANNED	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$2,039,709	$3,610,020	$702,371	$870,762	$365,195	$7,588,057
Water	$4,317,500	$6,947,000	$5,379,600	$6,805,000	$7,425,000	$30,874,100
Wastewater	$4,695,000	$4,170,000	$3,130,000	$4,751,600	$4,727,000	$21,473,600
Recycled Water	$275,000	$85,000	$0	$0	$0	$360,000
Hydroelectric	$8,220,000	$12,315,000	$17,660,000	$7,230,000	$5,410,000	$50,835,000
Recreation	$0	$0	$0	$0	$0	$0
General District	$3,515,500	$3,225,500	$2,675,000	$1,786,000	$2,056,000	$13,258,000
TOTAL	**$23,062,709**	**$30,352,520**	**$29,546,971**	**$21,443,362**	**$19,983,195**	**$124,388,757**

El Dorado Irrigation District

2017 - 2021 Capital Improvement Plan
FERC Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
15016	FERC:C50.2 CAPLES LAKE CAMPGROUND	FERC	1	250,000	1,200,000	0	0	0	1,450,000
06019H	FERC C35 OYSTER CREEK	FERC	1	350,000	0	0	0	0	350,000
06078H	FERC:C50.3 CAPLES DAM PRK Lot Improvements	FERC	1	120,000	0	0	0	0	120,000
06082H	FERC:C50.1 SILVER LAKE EAST CG FS Upgrade	FERC	1	50,000	250,000	1,900,000	0	0	2,200,000
07008H	FERC C51.8 SILVER LAKE CG West Upgrade	FERC	1	300,000	0	0	0	0	300,000
16018	FERC C40 No Name Creek Gaging	FERC	1	50,000	0	0	0	0	50,000
16019	FERC C40 Ogilby Creek Gaging	FERC	1	60,000	0	0	0	0	60,000
16020	FERC C40 Bull Creek Gaging	FERC	1	70,000	0	0	0	0	70,000
16028	Mill Creek Diversion Structure	FERC	1	125,000	0	0	0	0	125,000
06081H	FERC:C50.8 Pacific Crest Trail Crossing	FERC	1	75,000	200,000	7,000	0	0	282,000
06021H	FERC C37.8 WATER TEMP	FERC	1	30,000	20,000	30,000	20,000	30,000	130,000
06076H	FERC:C38.4B CAPLES Spillway Channel Stabilization	FERC	1	100,000	80,000	570,000	0	0	750,000
07003H	FERC C37.9 WATER QUALITY	FERC	1	80,000	0	80,000	0	80,000	240,000
07010H	FERC C15 PESTICIDE USE	FERC	1	80,000	70,000	70,000	70,000	70,000	360,000
07011H	FERC C38 ADAPTIVE MGMT	FERC	1	50,000	50,000	50,000	50,000	50,000	250,000
10007	FERC C51.2 RM Caples Boat Launch	FERC	1	40,000	40,000	40,000	40,000	40,000	200,000
06025H	FERC C41 Canal Release point	FERC	1	10,000	0	0	0	0	10,000
06098H	FERC:C46-9 RECREATION RSC	FERC	1	45,000	25,000	0	0	0	70,000
07005H	FERC C51.3 RM ECHO TRAIL	FERC	1	5,000	5,000	5,000	5,000	5,000	25,000
07006H	FERC C51.5&C51.7 RM USFS	FERC	1	45,020	46,371	47,762	49,195	50,670	239,017
07009H	FERC C51.8 RM WOODS CREEK	FERC	1	100,000	0	0	0	0	100,000
08025H	FERC C44 Noxious Weed Implementation	FERC	1	17,000	17,000	17,000	17,000	32,000	100,000
06086H	FERC:C33 LAKE ALOHA TROUT	FERC	1	12,000	0	0	0	0	12,000
06087H	FERC:C37.1 FISH MONITORING	FERC	1	60,000	0	0	0	60,000	120,000
06088H	FERC:C37.2 MACROINVERTEB	FERC	1	55,000	0	0	0	55,000	110,000
06089H	FERC:C37.3 AMPHIBIAN MON	FERC	1	17,000	0	0	0	92,000	109,000
06092H	FERC:C37.7 GEOMORPH EVAL	FERC	1	0	10,000	10,000	0	65,000	85,000
06097H	FERC C59 Facility Management Plan	FERC	1	20,000	15,000	0	0	0	35,000
07030H	FERC C57 Transportation Management Plan	FERC	1	30,000	5,000	5,000	5,000	5,000	50,000
06090H	FERC:C37.4 RIPARIAN SPEC	FERC	1	0	0	0	0	22,000	22,000
06091H	FERC:C37.5 RIPARN RECRUIT	FERC	1	0	0	0	0	22,000	22,000
06096H	FERC:C56 HERITAGE RSRCE	FERC	1	0	0	0	0	0	0
				2,246,020	**2,033,371**	**2,831,762**	**256,195**	**678,670**	**8,046,017**

El Dorado Irrigation District

2017 - 2021 Capital Improvement Plan
Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
15025	American River Bridge Pipeline	WA	1	1,240,750	75,000	10,000	0	0	1,325,750
11033	Summerfield Ditch / Finnon Reservoir Fill System	WA	1	30,000	0	0	0	0	30,000
16005	Diamond Springs Parkway	WA	1	295,000	0	0	0	0	295,000
PLANNED	Western Placerville Interchange	WA	1	75,000	385,000	385,000	0	0	845,000
16016	DOT Construction Projects - Water	WA	1	25,000	25,000	25,000	25,000	25,000	125,000
11032	Main Ditch - Forebay to Res 1	WA	2	480,000	1,920,000	1,900,000	0	0	4,300,000
13015	Outingdale Lower Tank Replacement	WA	2	500,000	0	0	0	0	500,000
14027	PLC Replacement	WA	2	80,000	0	0	0	0	80,000
14003	Res 3 Tank Upgrade	WA	2	1,000,000	0	0	0	0	1,000,000
15029	Polaris Road Waterline Replacement	WA	2	1,900,000	0	0	0	0	1,900,000
15030	Gilmore Road Waterline Replacement	WA	2	0	1,590,000	0	0	0	1,590,000
15009	Sly Park Intertie	WA	2	350,000	350,000	1,150,000	2,625,000	2,125,000	6,600,000
15024	EDH Raw Water Pump Station Upgrades	WA	2	150,000	150,000	4,900,000	4,700,000	0	9,900,000
PLANNED	Outingdale Water Intake Replacement	WA	2	50,000	40,000	0	0	0	90,000
PLANNED	Res 1 WTP Improvement Program	WA	2	25,000	260,000	250,000	275,000	2,525,000	3,335,000
PLANNED	Sly Park - Res A WTP Improvement Program	WA	2	260,000	200,000	175,000	725,000	1,000,000	2,360,000
PLANNED	Storage Replacement Program	WA	2	105,000	1,180,000	105,000	1,105,000	55,000	2,550,000
PLANNED	Waterline Replacement Program	WA	2	0	0	500,000	500,000	500,000	1,500,000
PLANNED	Folsom - EDHWTP Improvement Program	WA	2	0	0	125,000	225,000	525,000	875,000
13043	Outingdale WTP Automation Replacement	WA	2	75,000	0	0	0	0	75,000
PLANNED	PRS Replacement Program	WA	2	308,531	180,000	620,000	150,000	180,000	1,438,531
PLANNED	Pump Station Replacement Program	WA	2	50,000	100,000	250,000	100,000	550,000	1,050,000
13013	Tank 7 In-Conduit Hydro	WA	2	2,641,097	0	0	0	0	2,641,097
11040	Ditch Water Rights/SCADA	WA	3	45,000	5,000	0	0	0	50,000
				9,685,378	**6,460,000**	**10,395,000**	**10,430,000**	**7,485,000**	**44,455,378**

El Dorado Irrigation District

2017 - 2021 Capital Improvement Plan
Wastewater Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
PLANNED	Deer Creek Main Circuit Breaker	WW	1	300,000	800,000	0	0	0	1,100,000
16017	DOT Construction Projects - WW	WW	1	25,000	25,000	25,000	25,000	25,000	125,000
14028	EDHWWTP Odor Control	WW	1	50,000	0	0	0	0	50,000
15023	EDHWWTP Solar Rehab	WW	1	150,000	0	150,000	0	150,000	450,000
12021	WW SCADA System Reliability	WW	2	850,000	800,000	0	0	0	1,650,000
PLANNED	WW CHWWTP Electrical Reliability Improvements	WW	2	65,000	0	0	0	0	65,000
16007	Waterford 7 Lift Station Rehab	WW	2	1,240,000	0	0	0	0	1,240,000
16029	Promontory 1 Odor Control	WW	2	50,000	0	0	0	0	50,000
16008	South Point Lift Station Rehab	WW	2	0	1,280,000	0	0	0	1,280,000
16010	Wastewater Equipment Replacement Program	WW	2	250,000	250,000	250,000	250,000	250,000	1,250,000
PLANNED	WW SCADA Reliability and Automation Improvement	WW	2	45,000	150,000	45,000	195,000	150,000	585,000
PLANNED	WW Collection System Pipeline Replacement	WW	2	100,000	500,000	0	500,000	0	1,100,000
PLANNED	Business Park 3 Lift Station Replacement	WW	2	50,000	200,000	300,000	0	0	550,000
16025	Town Center Force Main Phase 2	WW	2	90,000	0	0	0	0	90,000
16035	EDHWWTP PLC2 Replacement	WW	2	75,000	0	0	0	0	75,000
16036	DC SCADA Network Upgrade	WW	2	30,000	0	0	0	0	30,000
PLANNED	Fall Protection at Lift Stations	WW	2	200,000	0	0	0	0	200,000
PLANNED	Wastewater Lift Station Upgrade Program	WW	2	100,000	700,000	300,000	300,000	1,500,000	2,900,000
13034	Wastewater Facilities Replacement Program	WW	2	125,000	125,000	125,000	125,000	125,000	625,000
16026	Wastewater Generator Program	WW	2	60,000	400,000	0	0	0	460,000
PLANNED	Deer Creek Dissolved Oxygen Automation	WW	3	25,000	0	0	0	0	25,000
				3,880,000	**5,230,000**	**1,195,000**	**1,395,000**	**2,200,000**	**13,900,000**

El Dorado Irrigation District

2017 - 2021 Capital Improvement Plan
Recycled Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
16013	Recycled Water System Improvements	RW	2	380,000	0	0	0	0	380,000
PLANNED	Recycled Water SCADA Remote Control	RW	3	45,000	0	0	0	0	45,000
PLANNED	DC Discharge Management	RW	3	5,000	10,000	100,000	0	0	115,000
				430,000	**10,000**	**100,000**	**0**	**0**	**540,000**

El Dorado Irrigation District

2017 - 2021 Capital Improvement Plan
Hydroelectric Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
03011H	Forebay Dam Upgrades	HY	1	1,500,000	9,000,000	9,500,000	0	0	20,000,000
PLANNED	Weber Dam Access	HY	1	150,000	0	0	0	0	150,000
11005	Silver Lake Dam Regulatory Study	HY	1	100,000	100,000	300,000	300,000	300,000	1,100,000
11004	Lake Aloha Dam Regulatory Improvements	HY	1	15,000	370,000	0	0	0	385,000
14029	Esmeralda Tunnel	HY	1	100,000	0	0	0	0	100,000
15018	Penstock Assessment	HY	1	80,000	0	0	0	0	80,000
14041	Project 184 SCADA System HW Replacement	HY	2	325,000	300,000	300,000	300,000	300,000	1,525,000
14024	Flume 44 Canal Conversion	HY	2	3,144,000	3,700,000	75,000	0	0	6,919,000
PLANNED	Annual Canal and Flume Program	HY	2	500,000	500,000	500,000	500,000	500,000	2,500,000
PLANNED	Flume 48 Replacement / Tunnel option	HY	2	150,000	0	0	0	0	150,000
PLANNED	Spill 3 Cribwall	HY	2	76,500	106,000	1,839,500	50,000	0	2,072,000
16022	Flume 38-40 Canal Conversion	HY	2	100,000	4,975,000	175,000	0	0	5,250,000
PLANNED	Pacific Tunnel Improvement Project	HY	2	0	65,000	160,000	1,667,500	25,000	1,917,500
PLANNED	Flume 47C Canal Conversion	HY	2	107,500	107,500	1,387,000	75,000	0	1,677,000
PLANNED	Flume 30 Replacement	HY	2	0	0	0	100,000	250,000	350,000
PLANNED	Hydro Facility Replacement Program	HY	2	200,000	200,000	100,000	100,000	100,000	700,000
PLANNED	Flume 46A Canal Conversion	HY	2	0	0	0	0	197,000	197,000
PLANNED	Flume 45 Section Replacement	HY	2	45,000	50,000	100,000	750,000	25,000	970,000
				6,593,000	**19,473,500**	**14,436,500**	**3,842,500**	**1,697,000**	**46,042,500**

2017 - 2021 Capital Improvement Plan
Recreation Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
No Recreation projects planned for 2017-2021									

General District Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2017 PLANNED	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2017-2021 TOTAL
06004G	SMUD / El Dorado Agreement Water Rights	GD	1	337,500	300,000	0	0	0	637,500
PLANNED	Diversion Gaging Requirements	GD	1	75,000	75,000	0	0	0	150,000
16037	SCADA Configuration & Alarm Response	GD	2	45,000	45,000	45,000	45,000	45,000	225,000
PLANNED	Shared IT Computing Reliability Program	GD	2	550,000	300,000	300,000	360,000	35,000	1,545,000
PLANNED	IT Network and Communications Reliability Program	GD	2	705,000	480,000	100,000	0	0	1,285,000
16027	Network Switch Upgrade (3560)	GD	2	152,000	0	0	0	0	152,000
PLANNED	Security Equipment Reliability Program	GD	2	60,000	0	0	0	0	60,000
PLANNED	SCADA Master Plan Implementation	GD	2	500,000	700,000	400,000	281,000	415,000	2,296,000
16031	SCADA Hardware Replacement	GD	2	258,370	0	0	0	0	258,370
PLANNED	2017 Vehicle Replacement Program	GD	2	390,000	202,000	304,000	97,000	331,000	1,324,000
PLANNED	Cyber Security Improvements	GD	2	230,000	250,000	120,000	0	0	600,000
PLANNED	Radio TLM and Network Replacement Program	GD	2	35,000	35,000	10,000	10,000	0	90,000
16006	AMR/Small Meter Replacement	GD	2	200,000	100,000	100,000	100,000	100,000	600,000
16030	Solar Assessment and Design	GD	2	350,000	0	0	0	0	350,000
16003	Permit 21112 Change in Point of Diversion	GD	2	150,000	200,000	0	0	0	350,000
14035	Enterprise GIS	GD	3	200,000	150,000	150,000	0	0	500,000
PLANNED	SCADA Software Efficiency Program	GD	3	45,000	45,000	45,000	45,000	45,000	225,000
PLANNED	Enterprise Software Application Improvements	GD	3	250,000	700,000	300,000	750,000	800,000	2,800,000
				4,532,870	**3,582,000**	**1,874,000**	**1,688,000**	**1,771,000**	**13,447,870**

FERC
Projects

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06019H

Project Name: FERC: C35 Oyster Creek

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

This project is required by Condition 35 of the Settlement Agreement, and the USFS 4(e) Conditions part of the FERC License. The licensee shall be responsible for those portions of the plan that the FS, in cooperation with the licensee, determines to be Project-related by 2011. The District has conducted a channel assessment and prepared a stabilization plan as required by FS for the Oyster Creek channel. The FS and SWRCB have approved the District's revised plan in 2013. Environmental permitting is ongoing through 2017 with construction anticipated in fall of 2017.

Basis for Priority:

EID would not be in compliance with the Settlement Agreement and USFS 4(e) Condition requirements contained in the FERC License.

Project Financial Summary:			
Funded to Date:	$ 294,950	Expenditures through end of year:	$ 209,683
Spent to Date:	$ 207,183	2017 - 2021 Planned Expenditures:	$ 350,000
Cash flow through end of year:	$ 2,500	Total Project Estimate:	$ 559,683
Project Balance	$ 85,267	Additional Funding Required	$ 264,733

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 350,000					$ 350,000
						$ -
TOTAL	$ 350,000	$ -	$ -	$ -	$ -	$ 350,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$140,308
Water Rates	47%	$124,424
		$0
Total	100%	$264,733

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06021H

Project Name: FERC C37.8 Water Temperature

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to implement an annual water temperature monitoring program at project reservoirs and stream reaches. The data collected from this monitoring effort will be used to determine if the coldwater beneficial uses are being met in designated project reaches.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Sections 7 and 12 of the Settlement Agreement, USFS 4(e) conditions 37 and 42, and SWRCB Water Quality Certification condition 14.

Project Financial Summary:			
Funded to Date:	$ 234,500	Expenditures through end of year:	$ 225,173
Spent to Date:	$ 208,173	2017 - 2021 Planned Expenditures:	$ 130,000
Cash flow through end of year:	$ 17,000	Total Project Estimate:	$ 355,173
Project Balance	$ 9,327	Additional Funding Required	$ 120,673

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring	$25,000	$15,000	$25,000	$15,000	$25,000	$ 105,000
Reporting	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
						$ -
						$ -
TOTAL	$ 30,000	$ 20,000	$ 30,000	$ 20,000	$ 30,000	$ 130,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$10,957
Water Rates	47%		$9,716
			$0
Total	100%		$20,673

Funding Comments: Annual monitoring is required until it can be demonstrated that operation of the project reasonably protects the cold freshwater beneficial use as determined by the SWRCB, FS, and ERC; coordinated with water quality sampling in even numbered years

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06025H

Project Name: FERC: C41 Canal Release Points

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Required by the License Settlement Agreement and USFS 4(e) Condition 41, the District must develop and file for FERC approval a canal drainage structure and release point plan. The licensee shall implement the plan upon approval. The plan has been approved and implementation is underway. An update to the plan is needed in 2017 to include upgrades that have been implemented (e.g., Spillway 46), identify future upgrades, and evaluate cthe condition of spillway channels. Future design and constriution costs will depend on the scope of activities identified in the updated plan.

Basis for Priority:

This project is required by the Project 184 FERC License and is on-going.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 28,848
Spent to Date:	$ 28,848	2017 - 2021 Planned Expenditures:	$ 10,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 38,848
Project Balance	$ 21,152	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 10,000					$ 10,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 10,000	$ -	$ -	$ -	$ -	$ 10,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06076H

Project Name: FERC C38.4b Caples Spillway Channel Stabilization

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

The USFS and SWRCB requires a stabilization plan (Plan) for the spillway channel below Caples Lake Auxiliary Dam. The level of stabilization has yet to be approved. The Plan has been submitted for approval. However, the USFS and SWRCB requested that the District conduct an alternatives analysis. This added scope will push out design into 2016-2017, permitting 2017-2018 and construction in 2019. The construction estimate requires significant further detailed project development and cost estimating which will occur after the alternatives analysis is complete and when regulatory input is received upon the plan.

Basis for Priority:

Compliance with the FERC license, Section 8 of the Settlement Agreement, USFS 4(e) conditions 38.4b, and SWRCB Water Quality Certification condition 5.

Project Financial Summary:			
Funded to Date:	$ 432,857	Expenditures through end of year:	$ 360,673
Spent to Date:	$ 260,673	2017 - 2021 Planned Expenditures:	$ 750,000
Cash flow through end of year:	$ 100,000	Total Project Estimate:	$ 1,110,673
Project Balance	$ 72,184	Additional Funding Required	$ 677,816

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 100,000	$ 80,000				$ 180,000
Construction			$ 570,000			$ 570,000
TOTAL	$ 100,000	$ 80,000	$ 570,000	$ -	$ -	$ 750,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$14,742
Water Rates	47%		$13,073
			$0
Total	100%		$27,816

Funding Comments: Construction cost placeholder will be replaced with actual estimates after the stabilization plan has been developed and approved by the USFS and SWRCB

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06078H

Project Name: FERC: C50.3 Caples Lake Dam Parking Improvements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Required by the License Settlement Agreement, and the USFS 4(e) Conditions 50.3, the District must re-pave the Caples Lake Dam Parking area and it shall be reconstructed and upgraded to meet the current FS design standards and the USDA Forest Service Region 5 access standards and the Architectural Barriers Act. This work includes a van-accessible parking space near the toilet, with required markings and signage.

The District and FS have agreed to implement a one-time modification to the 50% cost share specified in the license condition to make the District responsible for 100% of the costs to repave and restripe the Caples Lake Dam parking area. In exchange, the FS has agreed to remove the condition to resurface the Upper Echo Parking Area as specified in the FS 4(e) Condition 50.7. Both projects are similar in size and scope. Due to seasonal and permitting constraints, the construction of this project will occur in 2017.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.3 and USFS 4(e) Condition requirements. The District is requesting FERC and FS approval of a one-year time extension to October 2017 to complete the paving and restriping activities so the work can be completed in conjunction with other paving projects in the vicinity.

Project Financial Summary:			
Funded to Date:	$ 62,000	Expenditures through end of year:	$ 63,518
Spent to Date:	$ 18,518	2017 - 2021 Planned Expenditures:	$ 120,000
Cash flow through end of year:	$ 45,000	Total Project Estimate:	$ 183,518
Project Balance	$ (1,518)	Additional Funding Required	$ 121,518

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 120,000					$ 120,000
						$ -
TOTAL	$ 120,000	$ -	$ -	$ -	$ -	$ 120,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$64,405
Water Rates	47%	$57,114
		$0
Total	100%	$121,518

Funding Comments: Construction costs TBD after consultation with USFS

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06081H

Project Name: FERC: C50.8 Pacific Crest Trail Crossing

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Required by the FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Condition 50.8: Within 5 years, the licensee shall construct a crossing for the Pacific Crest National Scenic Trail across the Echo Conduit, to meet current FS design standards, at a location agreed to by the FS. Construction methods and types have not yet been determined. The District is currently coordinating with the FS regarding the location and design of the crossing. The District is requesting FERC and FS approval of a time extension to October 18, 2018 to allow additional time to complete consultation with the FS regarding the location and design of the crossing, complete environmental review, obtain the necessary permits, and construct the crossing.

Basis for Priority:

Project is required by Project 184 license.

Project Financial Summary:			
Funded to Date:	$ 12,000	Expenditures through end of year:	$ 6,687
Spent to Date:	$ 3,687	2017 - 2021 Planned Expenditures:	$ 282,000
Cash flow through end of year:	$ 3,000	Total Project Estimate:	$ 288,687
Project Balance	$ 5,313	Additional Funding Required	$ 276,687

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 35,000					$ 35,000
Design	$ 40,000					$ 40,000
Construction		$ 200,000				$ 200,000
Warranty/FERC QCIP			$ 7,000			$ 7,000
TOTAL	$ 75,000	$ 200,000	$ 7,000	$ -	$ -	$ 282,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$36,934
Water Rates	47%		$32,753
			$0
Total	100%		$69,687

Funding Comments: Construction costs TBD after consultation with USFS

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06082H

Project Name: FERC: C50.1 Silver Lake Campground East Re-Construction

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Required by the License Settlement Agreement and the USFS 4(e) Conditions, the District must reconstruct the paved surfaces, toilets, and water system at the 62-unit USFS Silver Lake Campground, including upgrade of this facility to meet the current FS design standards and the USDA Forest Service Region 5 accessibility standards requirements of the Americans with Disabilities Act (ADA). The construction schedule shows that improvements to the Silver Lake East and West Campgrounds occurring at the same time to realize cost savings due to the close proximity, similarity of the work to be completed, and construction efficiencies. Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2016 dollars ($1,900,000). The USFS is proposing a potential joint project to expand the upgrade project at their cost. This will require additional staff time to review the proposal and manage the cost share throughout the project. The remaining amount is for District staff time and should not be considered as part of the potential USFS settlement amount. Design for the campground re-construction will take place in 2017 and anticipated construction in 2018.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.1 and USFS 4(e) Condition requirements. The District is requesting FERC and FS approval of a time extension to October 18, 2019 to allow additional time to complete consultation with the FS, complete environmental review, obtain the necessary permits, and constructthe improvements.

Project Financial Summary:			
Funded to Date:	$ 92,135	Expenditures through end of year:	$ 74,621
Spent to Date:	$ 69,621	2017 - 2021 Planned Expenditures:	$ 2,200,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 2,274,621
Project Balance	$ 17,514	Additional Funding Required	$ 2,182,486

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction		$ 250,000	$ 1,900,000			$ 2,150,000
						$ -
TOTAL	$ 50,000	$ 250,000	$ 1,900,000	$ -	$ -	$ 2,200,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$17,217
Water Rates	47%		$15,268
			$0
Total	100%		$32,486

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06086H

Project Name: FERC C33 Lake Aloha Trout Removal

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding only necessary in years when a spill occurs over the auxiliary dams at Lake Aloha. If spill occurs, EID is required to manually remove trout from the pools downstream of the auxiliary dams to help reduce potential impacts to mountain yellow-legged frogs by trout predation.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 33, and SWRCB Water Quality Certification condition 4.

Project Financial Summary:			
Funded to Date:	$ 87,000	Expenditures through end of year:	$ 43,257
Spent to Date:	$ 43,257	2017 - 2021 Planned Expenditures:	$ 12,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 55,257
Project Balance	$ 43,743	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$12,000	$0	$0	$0	$0	$ 12,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 12,000	$ -	$ -	$ -	$ -	$ 12,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments: Amphibian surveys also required if Lake Aloha spills; funding for amphibian surveys from CIP # 06089H

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06087H

Project Name: FERC C37.1 Fish Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate the status of fish populations in selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 230,000	Expenditures through end of year:	$ 218,741
Spent to Date:	$ 158,741	2017 - 2021 Planned Expenditures:	$ 120,000
Cash flow through end of year:	$ 60,000	Total Project Estimate:	$ 338,741
Project Balance	$ 11,259	Additional Funding Required	$ 108,741

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring	$ 50,000				$ 50,000	$ 100,000
Staff time	$ 10,000				$ 10,000	$ 20,000
						$ -
TOTAL	$ 60,000	$ -	$ -	$ -	$ 60,000	$ 120,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$25,833
Water Rates	47%		$22,908
			$0
Total	100%		$48,741

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06088H

Project Name: FERC: C37.2 Macroinvertebrate Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate the status of macroinvertebrates in selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 161,000	Expenditures through end of year:	$ 144,955
Spent to Date:	$ 89,955	2017 - 2021 Planned Expenditures:	$ 110,000
Cash flow through end of year:	$ 55,000	Total Project Estimate:	$ 254,955
Project Balance	$ 16,045	Additional Funding Required	$ 93,955

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring	$ 50,000				$ 50,000	$ 100,000
Staff time	$ 5,000				$ 5,000	$ 10,000
						$ -
						$ -
TOTAL	$ 55,000	$ -	$ -	$ -	$ 55,000	$ 110,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$20,646
Water Rates	47%	$18,309
		$0
Total	100%	$38,955

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06089H

Project Name: FERC: C37.3 Amphibian Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Amphibian surveys are required June through September if at any time flows in the South Fork of the American River (SFAR) are 100 cfs or less and the diversion into the canal causes the flow in the SFAR to change 50 cfs or more in 1 day. The objective of these surveys is to assess the effects of flow fluctuations on foothill yellow-legged frog egg masses and tadpoles. Amphibian surveys for mountain yellow-legged frog (MYLF) and foothill yellow-legged frog (FYLF) are also required every five years at project reservoirs and stream reaches as part of the El Dorado Hydroelectric Project No. 184 Adaptive Management Program. Amphibian surveys are also required in years when a spill occurs over the auxiliary dams at Lake Aloha. If spill occurs, EID is required to survey for mountain yellow-legged frogs in the pools downstream of the auxiliary dams.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 293,000	Expenditures through end of year:	$ 248,539
Spent to Date:	$ 198,539	2017 - 2021 Planned Expenditures:	$ 109,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 357,539
Project Balance	$ 44,461	Additional Funding Required	$ 64,539

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
FYLF/MYLF monitoring					$ 75,000	$ 75,000
SFAR flow fluctuations	$ 5,000				$ 5,000	$ 10,000
Lake Aloha monitoring	$ 12,000				$ 12,000	$ 24,000
						$ -
TOTAL	$ 17,000	$ -	$ -	$ -	$ 92,000	$ 109,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Flow fluctuation monitoring only required if license criteria is triggered. Monitoring at Lake Aloha is only necessary in years when a spill occurs over the auxiliary dams.

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06090H

Project Name: FERC: C37.4 Riparian Species Composition

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate riparian species composition at selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 35,000	Expenditures through end of year:	$ 34,706
Spent to Date:	$ 16,706	2017 - 2021 Planned Expenditures:	$ 22,000
Cash flow through end of year:	$ 18,000	Total Project Estimate:	$ 56,706
Project Balance	$ 294	Additional Funding Required	$ 21,706

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring					$ 20,000	$ 20,000
Staff time					$ 2,000	$ 2,000
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 22,000	$ 22,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06091H

Project Name: FERC: C37.5 Riparian Vegetation Recruitment

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to evaluate riparian vegetation recruitment at selected stream reaches for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 35,000	Expenditures through end of year:	$ 32,706
Spent to Date:	$ 16,706	2017 - 2021 Planned Expenditures:	$ 22,000
Cash flow through end of year:	$ 16,000	Total Project Estimate:	$ 54,706
Project Balance	$ 2,294	Additional Funding Required	$ 19,706

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring					$ 20,000	$ 20,000
Staff Time					$ 2,000	$ 2,000
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 22,000	$ 22,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06092H

Project Name: FERC: C37.7 Geomorphology Evaluation

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. The objective of this monitoring effort is to monitor representative stream channel areas for comparison to the ecological resource objectives to help determine if ecological resource objectives are achievable and being met, as specified in the El Dorado Hydroelectric Project No. 184 Adaptive Management Program.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 104,276	Expenditures through end of year:	$ 103,362
Spent to Date:	$ 48,362	2017 - 2021 Planned Expenditures:	$ 85,000
Cash flow through end of year:	$ 55,000	Total Project Estimate:	$ 188,362
Project Balance	$ 914	Additional Funding Required	$ 84,086

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring		$ 10,000	$ 10,000		$ 60,000	$ 80,000
Staff time					$ 5,000	$ 5,000
						$ -
						$ -
TOTAL	$ -	$ 10,000	$ 10,000	$ -	$ 65,000	$ 85,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments: Includes post-project monitoring in 2018 and 2019 for Oyster Creek Stabilization Plan 06019H and Caples Spillway Channel Stabilization Plan 06076H

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06096H

Project Name: FERC: C55 Heritage Resources

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to complete and implement the Heritage Properties Management Plan (HPMP). The HPMP provides management protocols and mitigation measures for the ongoing protection of archaeological resources located within the FERC boundary.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license and USFS 4(e) conditions 55 and 56.

Project Financial Summary:			
Funded to Date:	$ 279,580	Expenditures through end of year:	$ 208,344
Spent to Date:	$ 208,344	2017 - 2021 Planned Expenditures:	$ -
Cash flow through end of year:		Total Project Estimate:	$ 208,344
Project Balance	$ 71,236	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Reporting	*	*	*	*	*	$ -
						$ -
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ -	$ -	$ -

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Finalize HPMP and implement upon approval. Funding in future years will depend on implementation schedule developed in consultation with the USFS

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06097H

Project Name: FERC: C59 Facility Management Plan

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/24/16

Project Description:

Required by the License Settlement Agreement, and the USFS 4(e) Condition 59: Within 1 year of license issuance, the licensee shall file with FERC a Facility Management Plan that is approved by the FS. The licensee shall implement the plan upon approval. Every 5 years, the licensee shall prepare a 5-year plan that will identify the maintenance, reconstruction, and removal needs for Project facilities within the FERC boundary and located on Forest Service property. The plan was approved by the USFS and filed with FERC. Items remaining to be evaluated include: buildings at Spillway 20A boathouse; the winch house at the surge chamber, and the water tank shed. The next plan update is scheduled for 2017. Future costs are subject to change based on the scope of the new plan. The plan includes items to be completed after Camp 2 bridge was finished in 2016. Access can now be made to potentially remove buildings in the vicinity of spillway 20, paint or restain remaining buildings, clear brush and trees by Camp 2 house.

Basis for Priority:

Project is required by Project 184 license and is on-going.

Project Financial Summary:			
Funded to Date:	$ 70,000	Expenditures through end of year:	$ 50,512
Spent to Date:	$ 43,512	2017 - 2021 Planned Expenditures:	$ 35,000
Cash flow through end of year:	$ 7,000	Total Project Estimate:	$ 85,512
Project Balance	$ 19,488	Additional Funding Required	$ 15,512

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 20,000	$ 15,000				$ 35,000
Design	*					$ -
Construction		*				$ -
						$ -
TOTAL	$ 20,000	$ 15,000	$ -	$ -	$ -	$ 35,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$271
Water Rates	47%		$241
			$0
Total	100%		$512

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06098H

Project Name: FERC: C46 thru C49 Recreation Resource Management

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/24/16

Project Description:

Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Conditions 46-49: Condition No. 46 – Implementation Plan. A recreation implementation plan shall be developed by the licensee in coordination with the FS within 6 months of license issuance. Condition No. 47 - Recreation Survey. The licensee shall conduct a Recreational Survey and prepare a Report on Recreational Resources that is approved by the FS every 6 years from the date of license issuance. Condition No. 48 – Forest Service Liaison. The FS and the licensee shall each provide an individual for liaison whenever planning or construction of recreation facilities, other major Project improvements, and maintenance activities are taking place within the National Forest. Condition No. 49 - Review of Recreation Developments. The FS and the licensee shall meet at least every 6 years to review all recreation facilities and areas associated with the Project and to agree upon necessary maintenance, rehabilitation, construction, and reconstruction work needed and its timing, as described in Conditions No. 49 and 50. Following the review, the licensee shall develop a 6-year schedule for maintenance, rehabilitation, and reconstruction.

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 209,888	Expenditures through end of year:	$ 200,829
Spent to Date:	$ 200,829	2017 - 2021 Planned Expenditures:	$ 70,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 270,829
Project Balance	$ 9,059	Additional Funding Required	$ 60,941

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$5,000		$0	$0		$ 5,000
Survey	$ 40,000					$ 40,000
Reporting		$ 25,000				$ 25,000
						$ -
TOTAL	$ 45,000	$ 25,000	$ -	$ -	$ -	$ 70,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$19,048
Water Rates	47%		$16,892
			$0
Total	100%		$35,941

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07003H

Project Name: FERC: C37.9 Water Quality

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is necessary to implement the water quality monitoring program at Project No. 184 reservoirs and stream reaches. The data collected from this monitoring effort will be used to characterize water quality under current project operations and help determine if applicable water quality objectives/criteria are being met and whether designated beneficial uses are protected.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 7 of the Settlement Agreement, USFS 4(e) conditions 37, and SWRCB Water Quality Certification condition 13.

Project Financial Summary:			
Funded to Date:	$ 4,589,000	Expenditures through end of year:	$ 441,188
Spent to Date:	$ 411,188	2017 - 2021 Planned Expenditures:	$ 240,000
Cash flow through end of year:	$ 30,000	Total Project Estimate:	$ 681,188
Project Balance	$ 4,147,812	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Monitoring	$ 40,000		$ 40,000		$ 40,000	$ 120,000
Lab analysis	$ 25,000		$ 25,000		$ 25,000	$ 75,000
Staff time	$ 15,000		$ 15,000		$ 15,000	$ 45,000
						$ -
						$ -
TOTAL	$ 80,000	$ -	$ 80,000	$ -	$ 80,000	$ 240,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Future monitoring dependent on agency review of first five years monitoring results (2008, 2010, 2012, 2014, and 2016). Staff to prepare proposal to FS, SWRCB, and ERC to reduce or eliminate monitoring for parameters and/or at sites that are not affected by Project operations.

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07005H

Project Name: FERC: C51.3 RM Echo Trailhead

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/24/16

Project Description:

Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Conditions 51.3: The licensee shall be responsible for the following annual maintenance items for USFS Property on USFS Lands.

a. Toilet pumping.
b. Trash removal/litter pick-up within the site.

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 30,000	Expenditures through end of year:	$ 16,348
Spent to Date:	$ 16,348	2017 - 2021 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 41,348
Project Balance	$ 13,652	Additional Funding Required	$ 11,348

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$5,000	$5,000	$5,000	$5,000	$5,000	$ 25,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07006H

Project Name: FERC: C51.5 and C51.7 RM USFS Payments

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/24/16

Project Description:

Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Conditions 51.5 and C51.7: (5.) Special Use Administration Funding: The licensee shall annually pay, by October 1, the amount of $4,800 (year 2002 cost basis) to provide for performing monitoring and permit compliance assurance for the campground concessionaire special use permits at Caples Lake Campground and Silver Lake East Campground. The costs shall be escalated based on the U.S. Gross Domestic Product – Implicit Price Deflator (GDP-IDP). (7.) Dispersed Area Patrol Funding on Lands Affected by the Project: The licensee shall annually pay, by October 1, $25,000 (year 2002 cost basis). The cost shall be escalated based on the U.S. Gross Domestic Product – Implicit Price Deflator (GDP-IDP). These funds are to provide for patrol and operation of non-concessionaire developed and dispersed recreation facilities, as well as trails and other locations utilized by visitors to the Project, within and adjacent to the Project boundary. The licensee shall annually provide a boat and operator at least twice each season (time to be determined by mutual
agreement between the licensee and the FS) on Caples Lake and Silver Lake to share with the FS in policing the shoreline along Silver Lake and Caples Lake, and to clean up litter.

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 368,154	Expenditures through end of year:	$ 407,271
Spent to Date:	$ 367,271	2017 - 2021 Planned Expenditures:	$ 239,017
Cash flow through end of year:	$ 40,000	Total Project Estimate:	$ 646,288
Project Balance	$ (39,117)	Additional Funding Required	$ 278,134

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$45,020	$46,371	$47,762	$49,195	$50,670	$ 239,017
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 45,020	$ 46,371	$ 47,762	$ 49,195	$ 50,670	$ 239,017

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$44,593
Water Rates	47%	$39,544
		$0
Total	100%	$84,137

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07008H

Project Name: FERC: C51.8 Silver Lake Campgrounds West Improvements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Required by the Settlement Agreement, and the USFS 4(e) Conditions, Condition 51.8: the District shall reconstruct the EID Silver Lake Campground, or equivalent location into compliance with accessibility standards for the Americans with Disabilities Act (ADA). Within 5 years of license issuance, the licensee shall bring the Silver Lake West recreation facilities up to Forest Service standards and ADA compliance. The construction schedule shows the improvements to the Silver Lake West Campground and the FERC:C50 Caples Lake Dam Parking Project occurring at the same time to realize cost savings due to the close proximity and similarity of the work to be completed and construction efficiencies.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 51.8 and USFS 4(e) Condition requirements. FERC and FS approved the District's request to extend the project completion date to 2016.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 44,129
Spent to Date:	$ 44,129	2017 - 2021 Planned Expenditures:	$ 300,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 344,129
Project Balance	$ 5,871	Additional Funding Required	$ 294,129

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 300,000					$ 300,000
						$ -
TOTAL	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$155,888
Water Rates	47%	$138,241
		$0
Total	100%	$294,129

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07009H

Project Name: FERC: C51.8 RM Woods Creek Fishing Access

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Conditions 51.8: Licensee Recreation Sites: Within 10 years of license issuance, the licensee shall bring the Ferguson Point, Sandy Cove, Woods Creek Fishing Access, and Silver Lake West recreation facilities or equivalent locations into compliance with accessibility standards for the Americans with Disabilities Act. These facilities, along with the Silver Lake Boat Ramp, shall continue to be operated and maintained by the licensee throughout the term of the license. Woods Creek was erroneously listed in the license as EID Property, however this misstatement does not relieve EID from the obligation to maintain this facility.

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License.

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 44,500	Expenditures through end of year:	$ 37,145
Spent to Date:	$ 32,145	2017 - 2021 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 137,145
Project Balance	$ 7,355	Additional Funding Required	$ 92,645

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 10,000					$ 10,000
Construction	$ 90,000					$ 90,000
						$ -
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$49,102
Water Rates	47%		$43,543
			$0
Total	100%		$92,645

Funding Comments: Funding in 2016 is required for accessibility improvements at Ferguson Point, or alternate location as determined in consultation with the FS.

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07010H

Project Name: FERC: C15 Pesticide Use

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is requested to implement the integrated pest management plan (IPMP). The IPMP addresses pesticide use at EID facilities within the jurisdiction of the El Dorado National Forest (ENF) and Lake Tahoe Basin Management Unit (LTBMU).

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license and USFS 4(e) condition 15.

Project Financial Summary:			
Funded to Date:	$ 693,000	Expenditures through end of year:	$ 671,197
Spent to Date:	$ 597,597	2017 - 2021 Planned Expenditures:	$ 360,000
Cash flow through end of year:	$ 73,600	Total Project Estimate:	$ 1,031,197
Project Balance	$ 21,803	Additional Funding Required	$ 338,197

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Implementation	$ 70,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 310,000
Equipment / Supplies	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 50,000
						$ -
						$ -
TOTAL	$ 80,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 360,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$30,845
Water Rates	47%	$27,353
		$0
Total	100%	$58,197

Funding Comments: Need to update the plan in 2017 which will cost an additional $10k

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07011H

Project Name: FERC: C38 Adaptive Management Program

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is for staff time to implement the adaptive management program (Condition 38) of the FERC license. This program requires coordination with the Ecological Resources Committee (ERC), implementation of the resource monitoring program, and evaluation of monitoring results to determine if resource objectives are achievable and being met.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 14 of the Settlement Agreement, and USFS 4(e) condition 38.

Project Financial Summary:			
Funded to Date:	$ 547,000	Expenditures through end of year:	$ 530,650
Spent to Date:	$ 510,650	2017 - 2021 Planned Expenditures:	$ 250,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 780,650
Project Balance	$ 16,350	Additional Funding Required	$ 233,650

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Implementation	$50,000	$50,000	$50,000	$50,000	$50,000	$ 250,000
						$ -
						$ -
						$ -
TOTAL	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$17,835
Water Rates	47%		$15,816
			$0
Total	100%		$33,650

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07030H

Project Name: FERC: C57 Transportation System Management Plan

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/24/16

Project Description:

Condition 57 states within 1 year of license issuance, the licensee shall file with FERC a transportation system management plan that is approved by the FS for roads on or affecting National Forest System lands. The plan was prepared and approved and established the level of licensee responsibility for project-related roads. Also included in this CIP is the Trails Maintenance Plan. The next plan update is in 2017 in consultation with the Forest Service. Future costs are subject to change based on the scope of the new plan. Camp 1 culvert work is planned to be completed in 2017.

Basis for Priority:

Project is required by Project 184 license and is on-going.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 46,440
Spent to Date:	$ 41,440	2017 - 2021 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 96,440
Project Balance	$ 3,560	Additional Funding Required	$ 46,440

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 10,000					$ 10,000
Design						$ -
Construction	$ 20,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 40,000
						$ -
TOTAL	$ 30,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 50,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$14,013
Water Rates	47%		$12,427
			$0
Total	100%		$26,440

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 08025H

Project Name: FERC C44 Noxious Weed Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/24/16

Project Description:

Mandatory requirement of the FERC license. Funding is requested to implement the noxious weed plan for the prevention and control of noxious weeds at Project No. 184 facilities. The plan was amended in 2012 to reduce annual monitoring requirements to conduct annual surveys only at areas where high priority noxious weeds are known to occur and at areas where ground disturbance occurred during the previous year. The amended plan also specifies that the entire project area only needs to be surveyed every 5 years. This amendment significantly reduced the scope and cost associated with this requirement.

Basis for Priority:

If unfunded, EID would be out of compliance with the FERC license, Section 8 of the Settlement Agreement, and USFS 4(e) condition 44.

Project Financial Summary:			
Funded to Date:	$ 213,342	Expenditures through end of year:	$ 175,743
Spent to Date:	$ 175,743	2017 - 2021 Planned Expenditures:	$ 100,000
Cash flow through end of year:		Total Project Estimate:	$ 275,743
Project Balance	$ 37,599	Additional Funding Required	$ 62,401

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Implementation	$15,000	$15,000	$15,000	$15,000	$30,000	$ 90,000
Reporting	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 10,000
						$ -
						$ -
TOTAL	$ 17,000	$ 17,000	$ 17,000	$ 17,000	$ 32,000	$ 100,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments: The monitoring plan requires the entire project area be surveyed every five years - this survey is scheduled to be conducted in 2021.

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 10007

Project Name: FERC C51.2 RM Caples Boat Launch

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/24/16

Project Description:

This is a mandatory requirement of the October 18, 2006 FERC Order Issuing New License. Required by the new FERC License, Settlement Agreement, and the USFS 4(e) Conditions. Condition 51.2: The licensee shall be responsible for operating and maintaining the boat launching ramp, associated parking lot, and other public facilities constructed at this site for the term of the license. The licensee shall also be responsible for maintenance of signboards. The USFS shall be responsible for maintaining the information on those signboards to USFS standards. Caples Lake Auxiliary Dam maintenance ($5k) responsibility rotates every 5th year with EID responsible from 2015-2019.

Basis for Priority:

EID would not be able to comply with the FERC License, Settlement Agreement and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 182,000	Expenditures through end of year:	$ 161,396
Spent to Date:	$ 157,796	2017 - 2021 Planned Expenditures:	$ 200,000
Cash flow through end of year:	$ 3,600	Total Project Estimate:	$ 361,396
Project Balance	$ 20,604	Additional Funding Required	$ 179,396

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$40,000	$40,000	$40,000	$40,000	$40,000	$ 200,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 200,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$10,280
Water Rates	47%		$9,116
			$0
Total	100%		$19,396

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 15016

Project Name: FERC: C50.2 Caples Lake Campground Re-Construction

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Required by the License Settlement Agreement and the USFS 4(e) Conditions 50.2, the District must reconstruct the paved surfaces, toilets, and water system at the 36-unit USFS Caples Lake Campground, including upgrade of this facility to meet the current FS design standards and the USDA Forest Service Region 5 accessibility standards requirements of the Americans with Disabilities Act (ADA). The construction schedule shows that improvements to the Caples Lake Campground and the Caples Lake Dam Parking Project occurring at the same time to realize cost savings due to the close proximity, similarity of the work to be completed, and construction efficiencies. Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2016 dollars ($1,200,000) and estimated staff time.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.2 and USFS 4(e) Condition requirements. The District is requesting FERC and FS approval of a time extension to October 18, 2019 to allow additional time to complete consultation with the FS, complete environmental review, obtain the necessary permits, and constructthe improvements.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 51,459
Spent to Date:	$ 51,459	2017 - 2021 Planned Expenditures:	$ 1,450,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,501,459
Project Balance	$ (1,459)	Additional Funding Required	$ 1,451,459

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 250,000					$ 250,000
Construction		$ 1,200,000				$ 1,200,000
						$ -
TOTAL	$ 250,000	$ 1,200,000	$ -	$ -	$ -	$ 1,450,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$133,273
Water Rates	47%		$118,186
			$0
Total	100%		$251,459

Funding Comments: Project funding represents the cost estimates agreed upon by USFS and EID in the Dangermond Report for the campground improvements and have been adjusted to reflect 2015 dollars and staff time.

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 16018

Project Name: FERC C40 No Name Creek Gaging

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

The FERC License Settlement Agreement USFS 4(E) Condition No. 40 - Requires that the District install a gaging station on No Name Creek to measure license-specified minimum streamflow requirements of 1 cfs to natural flow and provide continuous stream gage readings transmitted to Camp 5 for monitoring and recording. The gaging station must be designed to comply with United States Geological Survey (USGS) standards and must be completed by December 31, 2017.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.1 and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 50,000
Spent to Date:	$ 17,666	2017 - 2021 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 32,334	Total Project Estimate:	$ 100,000
Project Balance	$ (0)	Additional Funding Required	$ 50,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 50,000					$ 50,000
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2017 Amount
Water Rates	47%	$23,500
Water FCCs	53%	$26,500
		$0
Total	100%	$50,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 16019

Project Name: FERC C40 Ogilby Creek Gaging

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

The FERC License Settlement Agreement USFS 4(E) Condition No. 40 - Requires that the District install a gaging station on Ogilby Creek to measure license-specified minimum streamflow requirements that range from 1 to 2 cfs or natural flow depending on the time of year. Continuous stream gage readings must also be transmitted to Camp 5 for monitoring and recording. The gaging station must be designed to comply with United States Geological Survey (USGS) standards and must be completed by December 31, 2017.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.1 and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 60,970	Expenditures through end of year:	$ 60,970
Spent to Date:	$ 27,104	2017 - 2021 Planned Expenditures:	$ 60,000
Cash flow through end of year:	$ 33,866	Total Project Estimate:	$ 120,970
Project Balance	$ (0)	Additional Funding Required	$ 60,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 60,000					$ 60,000
						$ -
TOTAL	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$28,200
Water FCCs	53%		$31,800
			$0
Total	100%		$60,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 16020

Project Name: FERC C40 Bull Creek Gaging

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

The FERC License Settlement Agreement USFS 4(E) Condition No. 40 - Requires that the District install a gaging station on Bull Creek to measure license-specified minimum streamflow requirements of 1 cfs to natural flow and provide continuous stream gage readings transmitted to Camp 5 for monitoring and recording. The gaging station must be designed to comply with United States Geological Survey (USGS) standards and must be completed by December 31, 2016.

Basis for Priority:

This project is required to comply with the FERC License Condition No. 50.1 and USFS 4(e) Condition requirements.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 50,000
Spent to Date:	$ 24,041	2017 - 2021 Planned Expenditures:	$ 70,000
Cash flow through end of year:	$ 25,959	Total Project Estimate:	$ 120,000
Project Balance	$ (0)	Additional Funding Required	$ 70,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 70,000					$ 70,000
						$ -
TOTAL	$ 70,000	$ -	$ -	$ -	$ -	$ 70,000

Funding Sources	Percentage	2017 Amount
Water Rates	47%	$32,900
Water FCCs	53%	$37,100
		$0
Total	100%	$70,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 16028

Project Name: Mill Creek Diversion Structure

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

The Mill Creek Diversion was originally constructed as part of the Federal Energy Regulatory Commission Project 184. The structure is no longer in use because the segment of the El Dorado Canal that traversed Mill Creek was replaced by the Mill-Bull Tunnel in 2003. Most of the facilities associated with the diversion were removed during the restoration of the canal bench, which was approved by the U.S. Forest Service. The remaining components of the diversion structure are limited to a steel-reinforced concrete structure approximately 17 feet long by 1.5 feet wide with a maximum height of approximately 3 feet. The U.S. Forestry Service has directed the District to remove the remaining structure. The District is planning on utilizing our crews to remove the structure by approved methods as discussed with the U.S. Forestry Service.

Basis for Priority:

EID would not be in compliance with the Settlement Agreement and USFS 4(e) Condition requirements contained in the FERC License.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 7,675
Spent to Date:	$ 7,675	2017 - 2021 Planned Expenditures:	$ 125,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 132,675
Project Balance	$ 42,325	Additional Funding Required	$ 82,675

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 125,000					$ 125,000
Construction						$ -
						$ -
TOTAL	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000

Funding Sources	Percentage	2017 Amount
Water Rates	47%	$38,857
Water FCCs	53%	$43,818
		$0
Total	100%	$82,675

Funding Comments:

Water Projects

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 11032

Project Name: Main Ditch - Forebay to Reservoir 1

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

The Main Ditch is approximately three miles long and conveys a maximum of 15,080 acre-feet of raw water annually at a maximum rate of 40 cubic feet per second from Forebay Reservoir to the Reservoir 1 Water Treatment Plant. Because the Main Ditch is an unlined earthen canal, a portion of the flow up to 1,300 acre-feet per year, is lost to seepage and evapotranspiration. This water could be made available for drinking water or power generation. The benefits of the project include: improved supply reliability; elimination of contamination potential; reduced operations and maintenance costs; water rights protection from unreasonable use claims; reduction in Folsom Reservoir pumping costs; and on an interim basis, increased hydroelectric revenues. The District has received $568,000 in grant funding from the El Dorado County Water Agency (EDCWA) that has been used to conduct environmental, wetlands, and cultural resources studies, surveys and design work. Additional grant funding has been approved by EDCWA for final design and environmental assessment in the amount of $175,000. The Department of Water Resources and Reclamation have both committed $1 M grants for construction of the project. Final design, right of way aquisition and preparaton of an environmental Impact report are currently underway. The project cost estimate is based on 30% design and includes a 20% construction contingency. Construction is planned to occur over two ditch outage seasons, 2017/18 and 2018/19. Total project estimate is $8,850,000. Estimated annual expenditures are reduced to account for grants and Carson Creek conservation charges.

Basis for Priority:

Improves water quality, conserves water supply, protects health and safety of customer and the public and reduces operations costs.

Project Financial Summary:			
Funded to Date:	**$ 1,360,294**	**Expenditures through end of year:**	**$ 1,048,644**
Spent to Date:	**$ 783,644**	**2017 - 2021 Planned Expenditures:**	**$ 4,300,000**
Cash flow through end of year:	**$ 265,000**	**Total Project Estimate:**	**$ 8,848,644**
Project Balance	**$ 311,650**	**Additional Funding Required**	**$ 3,988,350**

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design/Environmental	$270,000	$220,000	$200,000			$ 690,000
Construction Costs	$500,000	$3,300,000	$3,300,000			$ 7,100,000
Easement Acquisition	$10,000					$ 10,000
Subtotal	**$780,000**	**$3,520,000**	**$3,500,000**			$ 7,800,000
Grant offsets	$300,000	$1,600,000	$1,600,000			$ 3,500,000
NET TOTAL	**$ 480,000**	**$ 1,920,000**	**$ 1,900,000**	**$ -**	**$ -**	**$ 4,300,000**

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$168,350
			$0
			$0
Total	**100%**		**$168,350**

Funding Comments: The project replaces an existing facility, therefore is funded by water rates. Estimated annual capital expenditures have been reduced by grant funding from El Dorado County Water Agency, Department of Water Resources and US Bureau of Reclamation and Carson Creek conservation charge in the amount of approximately $3.5 M. The project is estimated to reduce operations cost by over $300,000 annually.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 11033

Project Name: Summerfield Ditch / Finnon Reservoir

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

This District incurred a legal obligation to provide water to Finnon Lake as a part of the annexation of the Mosquito Area and transfer of the Slab Creek water rights to Folsom Lake. In 2011 the Mosquito Volunteer Fire Association (MVFA), completed the dam restoration project which then triggered the District's obligation. District Staff has reviewed multiple options for delivery of either raw or treated water to supplement filling the reservoir. The most economical alternative involves conveying treated water to the reservoir. Existing funds from 2012 have supported obtaining a discharge permit from the Regional Board, design and procurement of the autoflush plumbing, piping, and passive treatment systems, and environmental review for the construction. After several years of independent negotiations between the MVFA and private property owners, a compromise is near and construction now being anticipated to occur in early 2017. To facilitate a settlement and move forward with the project, the District has agreed to provide additional easement documentation, field survey work, Williamson Act processing and county recording fees. The proposed budget for 2017 includes funds for construction of the flushing system and 300 feet of 6-inch pipeline by District Crews.

Basis for Priority:

The project is a legal obligation required by prior agreements with the Mosquito Volunteer Fire Agency.

Project Financial Summary:			
Funded to Date:	$ 153,151	Expenditures through end of year:	$ 137,946
Spent to Date:	$ 132,946	2017 - 2021 Planned Expenditures:	$ 30,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 167,946
Project Balance	$ 15,205	Additional Funding Required	$ 14,795

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction Costs	$30,000					$ 30,000
						$ -
TOTAL	$ 30,000	$ -	$ -	$ -	$ -	$ 30,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$14,795
		$0
		$0
Total	100%	$14,795

Funding Comments: Project involves no planned increase in capacity or new service connections, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 11040

Project Name: Ditch Water Rights SCADA Upgrades

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

In August 2010, the District and USBR executed a Warren Act Contract for the Rediversion of the Ditch Water Rights. A requirement of that contract is to report diversions at several gaging stations to the USBR on a regular basis. In order to provide accurate and reliable diversion data, the gage stations known as S42, W5, and W4 require upgrading to automation. The automation upgrades consist of installation of telemetry equipment and SCADA. Each station is estimated to cost $5,000 to $10,000 each to install.

Basis for Priority:

Since the Warren Act has been signed, the District is required to report to the USBR. Upgrading the SCADA at the gage stations will provide reliable and accurate reporting.

Project Financial Summary:			
Funded to Date:	$ 40,000	Expenditures through end of year:	$ 34,296
Spent to Date:	$ 24,296	2017 - 2021 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 84,296
Project Balance	$ 5,704	Additional Funding Required	$ 44,296

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 45,000	$ 5,000				$ 50,000
						$ -
TOTAL	$ 45,000	$ 5,000	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$39,296
			$0
			$0
Total	100%		$39,296

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 13013

Project Name: Tank 7 In-Conduit Hydro

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

The proposed Tank 7 In-conduit Hydroelectric Project consists of a 484 kW hydroelectric station on the Pleasant Oak Main where pressure is currently discipated through a pressure reducing station. Annual generation is estimated to be 1,765,000 kilowatt-hours. Final plans and specifications are complete and contractors have been pre-qualified for bidding. A PG&E interconnection application was submitted in May 2016 and final PG&E interconnection negoiations are currently underway. The project is scheduled for bidding in September 2016 with construction starting by the end of 2016.

Basis for Priority:

The project was evaluated over a 30-year planning horizon with 3% debt financing. The expected payback period is 17 years and the net present value is estimated to be $1,590,000. With no sunk costs, the payback period is 15.5 years and net present value $1,860,000. The financial analysis is based on PG&E's Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) program, that will provide a bill credit for the generation portion of the District's PG&E utility bills at Reservoir 7 and other sites. RES-BCT allows a Local Government with one or more eligible renewable generating facilities to export energy to the grid and receive generation credits that can be used to offset electricity charges at one or more other locations.

Project Financial Summary:			
Funded to Date:	$ 720,170	Expenditures through end of year:	$ 496,945
Spent to Date:	$ 446,945	2017 - 2021 Planned Expenditures:	$ 2,641,097
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 3,138,042
Project Balance	$ 223,225	Additional Funding Required	$ 2,417,872

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Engineering and construction admin.	$ 53,300					$ 53,300
PG&E Interconnection	$ 567,162					$ 567,162
Construction	$ 2,020,635					$ 2,020,635
TOTAL	$ 2,641,097	$ -	$ -	$ -	$ -	$ 2,641,097

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$2,417,872
Water FCCs		$0
		$0
Total	100%	$2,417,872

Funding Comments: This project will generate bill offsets for the Tank 7 site and the Folsom Lake Raw Water Pump Station and therefore should be funded with water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 13015

Project Name: Outingdale Lower Tank Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

Originally constructed in 1993, the tank is 22 years old and has suffered extensive corrosion and deterioration of the rafters and their mounting brackets, reducing structural reliability and confidence for continued service. The total combined storage provided by the Upper and Lower Outingdale tanks is insufficient to meet the total of two hour, 1,000 gpm fire flow plus emergency and equalization volume requirements. Epoxy coated bolted tanks such as utilized at Outingdale and other locations within the District have a history of early failure and were proposed to be replaced with fusion bonded/glass lined tanks. On September 12, 2016 the Board directed staff to revise the design to construct an epoxy coated steel bolted tank rather than fusion bonded/glass lined tank in order to minimize initial construction costs. Staff anticipates the re-design will be completed in late 2016 and ready for bidding in early 2017. During the redesign process a revised construction cost estimate will be developed.

Basis for Priority:

This existing asset is critical to the operation of the Outingdale Water Treatment Plant and providing chlorine contact time in accordance with drinking water regulations. The existing tank is currently in a failing condition.

Project Financial Summary:			
Funded to Date:	$ 111,740	Expenditures through end of year:	$ 138,704
Spent to Date:	$ 118,704	2017 - 2021 Planned Expenditures:	$ 500,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 638,704
Project Balance	$ (26,964)	Additional Funding Required	$ 526,964

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Capitalized Labor						$ -
Construction	$ 500,000					$ 500,000
						$ -
TOTAL	$ 500,000	$ -	$ -	$ -	$ -	$ 500,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$526,964
			$0
			$0
Total	100%		$526,964

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 13043

Project Name: Outingdale WTP Automation Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This project is for the replacement of all the automation and the addition of local SCADA recording equipment at Outingdale Water Treatment Plant (OWTP). A new control system and the elimination of an illegally transmitting Tesco radio is required to be able to bring OWTP into our SCADA system. This project will combine the current PLCs into one and replace end of service life automation controllers and radio. This project will also move the connectivity of the plant to a hardware network. Additionally, in 2016 we will add an onsite server to ensure data collection compliance during network outages. Outingdale is a small package plant with primitive SCADA controls. These controls have proven to be cumbersome and unreliable to monitor and control remotely putting the District at risk for compliance and service interruptions. The current controls only allow limited SCADA abilities at best. Adding full automation with onsite recording capability will ensure regulatory compliance. Additionally, engineering evaluation of the plant may be conducted to identify other needed improvements to improve the reliability.

Basis for Priority:

The Tesco PLC unit at OWTP is transmitting on an illegal frequency under the FCC's new regulations, as of 2013, and is not capable of being modified to meet narrow banding compliance. EID has been notified by the FCC to modify all of our licensed frequency to meet narrow banding requirements. The Tesco radio system that OWTP utilizes will be removed in a separate project due to FCC compliance issues. After this removal, we will not be able to monitor or control anything at OWTP remotely. This project must be completed before or at the same time as the Tesco PLC replacement CIP.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 50,817
Spent to Date:	$ 25,817	2017 - 2021 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 125,817
Project Balance	$ (817)	Additional Funding Required	$ 75,817

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Construction	$ 75,000					$ 75,000
						$ -
						$ -
						$ -
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$75,817
Total	100%		$75,817

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 14003

Project Name: Res 3 Tank Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

The ongoing Tank Recoating Program reviews the status of the District's 36 steel water storage tanks, including their structural and coating conditions. The Reservoir 3 tank has been inspected and identified as having experienced severe paint failure, corrosion, and metal loss; placing it high on the current priority list. A design was completed in mid 2016 with the anticipation of construction in late 2016 through 2017. The design considered several repair options of which a replacement of the steel top with a aluminum top was selected. Also the design includes coating replacement of the interior wall and floor, painting of the exterior wall, and includes a sampling station, roof handrail and stairwell.

Basis for Priority:

Maintain reliability of service for a facility critical for potable water transmission from the Reservoir 1 water treatment plant to Placerville and farther west.

Project Financial Summary:			
Funded to Date:	$ 102,231	Expenditures through end of year:	$ 449,257
Spent to Date:	$ 49,257	2017 - 2021 Planned Expenditures:	$ 1,000,000
Cash flow through end of year:	$ 400,000	Total Project Estimate:	$ 1,449,257
Project Balance	$ (347,026)	Additional Funding Required	$ 1,347,026

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 1,000,000					$ 1,000,000
						$ -
TOTAL	$ 1,000,000	$ -	$ -	$ -	$ -	$ 1,000,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$1,347,026
		$0
		$0
Total	100%	$1,347,026

Funding Comments: Project involves upgrade of existing facilities and no planned increase in capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 14027

Project Name: PLC Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

The project involves replacing 8 antiquated and end of life cycle Tesco PLC control panels / radio units. The current units are controllers and radio units. Replacing these units fixes two issues at once. The new PLCs will have a separate modern radio, greatly stabilizing the network and control system. Additionally this also includes the removal of one Tesco repeater site (Res12) and two master Tesco PLCs (Res1 & Res A). Some of these sites are dependent on each other for proper control and radio communication. This interdependency makes it infeasible to replace these sites one at a time. This must be a coordinated effort requiring labor beyond our current staffing levels.

The following sites need to be replaced: Gold Hill Intertie, Dolomite, Union Mine PS, Pollock Pines, Sportsman's PS, Moose Hall Res, Res 2. (3) of these sites can be replaced with a smaller and less expensive control panel - Pollock Pines, Res A (incorporate into the current CL), Res 2 (remote I/O). The remaining (5) sites will need full control panels. These Tesco units are long past life cycle replacement by about 10 to 15 years.

Basis for Priority:

These units are transmitting on an illegal frequency under the FCC's new regulations, as of 2013, and are not capable of being modified to meet compliance. EID has been notified by the FCC to modify all of our licensed frequency to meet narrow banding requirements. The replacement of these units will bring our radio system into compliance and stabilize a fragile water distribution control system. In addition to the great risk of interrupted service to our customers, EID is needlessly spending a lot of resources (Mechanics, Operators, Electrician, & Control Technicians) in an attempt to keep this system running. New parts have not been available for this technology for years. Technical support is not available and the operating software is not supported.

Project Financial Summary:			
Funded to Date:	$ 82,862	Expenditures through end of year:	$ 145,083
Spent to Date:	$ 70,083	2017 - 2021 Planned Expenditures:	$ 80,000
Cash flow through end of year:	$ 75,000	Total Project Estimate:	$ 225,083
Project Balance	$ (62,221)	Additional Funding Required	$ 142,221

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design & PM						$ -
Construction	$ 80,000					$ 80,000
						$ -
						$ -
TOTAL	$ 80,000	$ -	$ -	$ -	$ -	$ 80,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$142,221
			$0
			$0
Total	100%		$142,221

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15009

Project Name: Sly Park Intertie Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

The Sly Park Intertie is a key component of supply reliability in times of drought and during emergencies. It provides water delivery flexibility between Sly Park and Forebay supplies. The Intertie includes approximately 3.4 miles of 22"/30" steel waterline built under emergency conditions just after the 1976-77 drought. The unlined pipeline has corroded significantly, resulting in periodic leaks and is currently out of service. The Sly Park Intertie Improvements were identified as a supply reliability project in the 2013 Integrated Water Resources Master Plan. The project includes lining the pipeline which will extend the life of the facility and maintain reliability/flexibility. With some operational changes, in-conduit hydroelectric development may also be possible to partially offset pipeline rehabilitation capital costs. Previous engineering reports from the mid 1990's and in 2006 explored the possibility of rehabilitating the pipeline with a non-structural liner. The 2006 Basis of Design Report (BODR) concluded that even with 13-30% wall thickness loss, the pipeline had adequate strength for a non-structural lining option. An updated BODR is currently being prepared that will include: a new condition assessment; analysis of changed operations that could potentially reduce pumping head up to 180 feet by pumping water from Reservoir A to Reservoir 1 during annual Forebay outages; and an in-conduit hydroelectic feasibility determination. The ability to move water between Reservoir 1 and Reservoir A will also allow for a long overdue inspection of the 60 year old Camino Conduit between Sly Park Reservoir and Reservoir A.

Basis for Priority:

Lining the pipeline will slow corrosion and extend its life, ensuring water supply flexibility/reliability between the two major gravity supply sources that provide two thirds of the District's water supply.

Project Financial Summary:			
Funded to Date:	$ 556,052	Expenditures through end of year:	$ 118,307
Spent to Date:	$ 68,307	2017 - 2021 Planned Expenditures:	$ 6,600,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 6,718,307
Project Balance	$ 437,745	Additional Funding Required	$ 6,162,255

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design/CM	$300,000	$300,000	$ 300,000	$ 125,000	$ 125,000	$ 1,150,000
Environmental	$50,000	$50,000	$ 275,000			$ 375,000
Construction			$ 500,000	$ 2,500,000	$ 2,000,000	$ 5,000,000
Right of Way			$ 75,000			$ 75,000
TOTAL	$ 350,000	$ 350,000	$ 1,150,000	$ 2,625,000	$ 2,125,000	$ 6,600,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$0
		$0
Total	100%	$0

Funding Comments: The project extends the life of the facility and restores the intended design capacity, therefore is funded by water rates. Estimated expenditures are based on an updated cost estimate from the 2006 BODR and assume the pipeline can be rehabilitated with a non-structural liner. If the pipeline is not fit for service and partial or total replacement is required, construction cost could double.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15024

Project Name: El Dorado Hills Raw Water Pump Station Improvements

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

The adopted 2013 Integrated Water Resources Master Plan recommends construction of a new raw water pump station and firms the capacity of the EDHWTP to 26 mgd. The existing raw water C-side pump station was designed as a temporary facility, in anticipation of a new raw water pump station with a temperature control device (TCD). The TCD, however, is no longer being contemplated. The A and B side intake pumps are nearing the end of their reliable life cycle and the C-side pumps have experienced numerous failures requiring very costly repairs. The existing raw water pump station needs to be upgraded to provide for reliability and long-term operational needs. A concept evaluation was completed in December of 2015 that considered alternatives for a permanent, efficient, and cost effective replacement to meet the 26 MGD firm capacity. The evaluation recommends a new facility with multiple submersible pumps on the inclined slope pumping directly to the El Dorado Hills Water Treatment Plant at an estimated project cost of $20 M. This estimate is based on a conceptual level of confidence and includes a 30% construction contingency. Typical contingencies for conceptual level cost estimates range between 30% and 100%. The contingency used for this cost estimate is at the low end of the range and higher actual costs are likely. Preparation of a Basis of Design Report will begin in late 2016 that will further develop the project, consider phasing, and refine project cost estimates by phase. Final design and environmenal review will follow the BODR with first phase construction planned for 2019/20. Until a phasing plan is developed, one half of the estimated project expenditures are assumed to occur in this CIP planning horizon.

Basis for Priority:

The critical nature of this pump station, age and poor condition of pumps, number of repeated pump failures, difficulty obtaining and high cost of repair parts for 1958 vintage booster pumps is the basis for Priority 1 ranking. This project is needed to maintain service and meet supply demands for public health and safety.

Project Financial Summary:			
Funded to Date:	$ 75,000	Expenditures through end of year:	$ 62,279
Spent to Date:	$ 52,279	2017 - 2021 Planned Expenditures:	$ 9,900,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 9,962,279
Project Balance	$ 12,721	Additional Funding Required	$ 9,887,279

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design/Evironmental	$ 150,000	$ 150,000	$ 400,000	$ 200,000		$ 900,000
Construction Costs			$ 4,500,000	$ 4,500,000		$ 9,000,000
						$ -
TOTAL	$ 150,000	$ 150,000	$ 4,900,000	$ 4,700,000	$ -	$ 9,900,000

Funding Sources	Percentage	2017	Amount
Water Rates	66%		$90,604
Water FCCs	34%		$46,675
Total	100%		$137,279

Funding Comments: The existing pump station has capacity for 17,446 edus. Currently there are 11,446 edus connectioned with 6000 edus of remaining capacity. Therefore the replacement project should be funded with 66% water rates (11,446/17,446) and 24% water FCC (6,000/11,446).

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15025

Project Name: American River Bridge Pipeline

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Brink **Board Approval:** 10/24/16

Project Description:

Caltrans plans to replace the existing Highway 49 bridge over the South Fork of the American River in Coloma/Lotus. The District has an existing waterline on the bridge and road approaches that will be impacted by the proposed project. In coordination with Caltrans, the design of the waterline relocation was completed in 2016 by a consultant retained by the District. Approximately 3,550 feet of 6-inch and 8-inch waterline will be impacted by the Caltrans Project and require relocation at the District's costs since located in the Caltrans right-of-way.

The relocation of the waterline will be performed by a contractor retained by Caltrans. On April 25, 2016 the Board approved a Utility Agreement with Caltrans for this work. Based on estimates performed by the consultant, the estimated costs of the reimbursement to Caltrans is $772,286. Funding was not requested when the Utility Agreement was approved. Caltrans opened bids in October, 2016, but is still evaluating the bids. The estimates below are preliminary numbers. Per the terms of the Utility Agreement, once bids are accepted by Caltrans and actual costs are known, the District is to pay Caltrans the full amount up front. Staff will request Board approval of funding at that time.

Construction is scheduled to occur between 2017 and 2018, and will require inspection by the District and close project management with Caltrans. The District's consultant will need to respond to design questions and prepare record drawings.

Basis for Priority:

The District has a waterline in the Caltrans right-of-way that will be impacted by their proposed project. The District must pay associated relocation costs.

Project Financial Summary:			
Funded to Date:	$ 85,000	Expenditures through end of year:	$ 73,943
Spent to Date:	$ 68,943	2017 - 2021 Planned Expenditures:	$ 1,325,750
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 1,399,693
Project Balance	$ 11,057	Additional Funding Required	$ 1,314,693

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 1,240,750	$ 75,000	$ 10,000			$ 1,325,750
						$ -
TOTAL	$ 1,240,750	$ 75,000	$ 10,000	$ -	$ -	$ 1,325,750

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$1,229,693
			$0
			$0
Total	100%		$1,229,693

Funding Comments: Estimated expenditures are estimates. No design as been completed.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15029

Project Name: Polaris Road Waterline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Much of the Pollock Pines water system was constructed in the 1940's and 50's with steel pipe. The backbone system and many problematic pipelines have been replaced over the last two decades. This project will replace the remaining 4,400 feet of steel pipe in the Polaris Road area and allow for abandonment of approximately 200 feet of private line. Approximately 58 leaks have been repaired along Polaris Road over the past 15 years. This is equivalent to 6.7 breaks/mile-year, exceeding the industry average of 0.25 breaks/mile-year (WEF) by 27 times. Waterline leaks in an aging infrastructure are expected and are prioritized for repair by District crews based on public health risks, severity of leak, property damage threat and impact to customers. The magnitude of water loss and level of customer impact make these waterlines the highest priority for replacement.

Basis for Priority:

Potential interruption to service throughout the District in the event of failures and continued use of expiring equipment that may pose a threat to the health and safety of customers, employees, and the public.

Project Financial Summary:			
Funded to Date:	$ 117,596	Expenditures through end of year:	$ 59,630
Spent to Date:	$ 59,630	2017 - 2021 Planned Expenditures:	$ 1,900,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,959,630
Project Balance	$ 57,966	Additional Funding Required	$ 1,842,034

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 1,900,000					$ 1,900,000
						$ -
TOTAL	$ 1,900,000	$ -	$ -	$ -	$ -	$ 1,900,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$1,842,034
		$0
		$0
Total	100%	$1,842,034

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15030

Project Name: Gilmore Road Waterline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Much of the Pollock Pines water system was constructed in the 1940's and 50's with steel pipe. The backbone system and many problematic pipelines have been replaced over the last two decades. This project will replace the remaining 3,300 feet of steel pipe in the Gilmore Road area and allow for abandonment of approximately 1,400 feet of private line. Approximately 35 leaks have been repaired and numerous water quality complaints related to "rust" have been received along Gilmore Road and adjacent side streets over the past 15 years. This is equivalent to 3.7 breaks/mile-year exceeding the industry average of 0.25 breaks/mile-year (WEF) by 15 times. Waterline leaks in an aging infrastructure are expected and are prioritized for repair by District crews based on public health risks, severity of leak, property damage threat and impact to customers. The magnitude of water loss and level of customer impact make these waterlines the highest priority for replacement. This project may be combined with Polaris Rd replacement and constructed in 2017 if funding allows.

Basis for Priority:

Potential interruption to service throughout the District in the event of failures and continued use of expiring equipment that may pose a threat to the health and safety of customers, employees, and the public.

Project Financial Summary:			
Funded to Date:	$ 119,424	Expenditures through end of year:	$ 74,152
Spent to Date:	$ 74,152	2017 - 2021 Planned Expenditures:	$ 1,590,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,664,152
Project Balance	$ 45,272	Additional Funding Required	$ 1,544,728

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction		$ 1,590,000				$ 1,590,000
						$ -
TOTAL	$ -	$ 1,590,000	$ -	$ -	$ -	$ 1,590,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Diamond Springs Parkway / Hwy 49 Improvements

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Eden-Bishop **Board Approval:** 10/24/16

Project Description:

As part of the County's planned Diamond Springs Parkway project, the County plans to make improvements to Hwy 49 in Diamond Springs that will impact existing waterlines. The majority of the impacted waterlines are located within existing easements, and therefore the County is required to perform the relocations at their costs. Some waterlines are located within the public right of way and must be relocated at the District's cost. Due to limited hydraulic capacity of some of the existing water lines, the District plans to increase their size (from 8" to 12") as part of the project. The District will be responsible for the incremental cost of the upsizing. It is anticipated a project specific reimbursement agreement between the County and the District will be brought to the Board in late 2016. The County anticipates construction to commence in late 2016 and be completed in 2017. The project is currently in design and the estimated annual expenditures listed below are rough estimates.

Basis for Priority:

Some of the waterlines that require relocation are in the public right of way where we do not have Senior rights. Those make this project a Priority 1. The rest of the impacted waterlines are in easements, and must be relocated at the County's costs. However, based on hydraulic modeling, the District desires to increase the size of these facilities as part of the project and will be responsible for the increased cost. This work would be considered Priority 2.

Project Financial Summary:			
Funded to Date:	$ 25,000	Expenditures through end of year:	$ 16,404
Spent to Date:	$ 8,904	2017 - 2021 Planned Expenditures:	$ 295,000
Cash flow through end of year:	$ 7,500	Total Project Estimate:	$ 311,404
Project Balance	$ 8,596	Additional Funding Required	$ 286,404

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Engineering	$ 5,000					$ 5,000
Inspection	$ 40,000					$ 40,000
Construction	$ 250,000					$ 250,000
						$ -
TOTAL	$ 295,000	$ -	$ -	$ -	$ -	$ 295,000

Funding Sources	Percentage	2017 Amount
Water Rates	50%	$143,202
Water FCC's	50%	$143,202
		$0
Total	100%	$286,404

Funding Comments: Expenditures are estimates. County reimbursement agreement has not been negotiated to determine exact District contribution.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16016

Project Name: DOT Construction Projects - Water

Project Category: State/County Road Projects

Priority: 1 **PM:** Brink **Board Approval:** 10/24/16

Project Description:

At Board direction, staff has streamlined contracting procedures with the El Dorado County Department of Transportation (DOT) and City of Placerville for joint projects. EID has many water and sewer lines in roads maintained by the El Dorado County Department of Transportation (DOT). From time to time, DOT initiates a road project where either the EID water, wastewater or recycled waterlines need to be relocated or upgraded, which presents opportunities to join forces with DOT in the project by simultaneously upgrading and/or relocating our facilities. On August 10, 2015 the Board reauthorized the Master Reimbursement Agreement which is utilized for such projects.
This CIP is intended for staff coordination with DOT throughout the year and for minor projects. This CIP will also be used to fund minor water related relocations performed by the County under the Agreement. Larger utility relocation projects will have a specific CIP that identifies all the work associated with that project.

Basis for Priority:

Projects are required by law, regulation, contract, agreement or license. This includes projects required to meet requirements imposed by federal, State, or local governments. This also includes relocation of District facilities located in the public right-of-way as necessitated by County road improvements.

Project Financial Summary:			
Funded to Date:	$ 47,777	Expenditures through end of year:	$ 6,371
Spent to Date:	$ 4,371	2017 - 2021 Planned Expenditures:	$ 125,000
Cash flow through end of year:	$ 2,000	Total Project Estimate:	$ 131,371
Project Balance	$ 41,406	Additional Funding Required	$ 83,594

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$25,000	$25,000	$25,000	$25,000	$25,000	$ 125,000
Construction Costs						$ -
						$ -
TOTAL	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments: Typically work involves replacement or relocation of existing facilities. However, funding split will be further evaluated for each project.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Folsom - EDH Water Treatment Plant Improvements Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This program consists of targeted process, control and facility improvements from the Folsom Lake Intake to and Including the El Dorado Hills Water Treatment Plant. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliablity and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2017 - 2021 Planned Expenditures:	$ 875,000
Cash flow through end of year:		Total Project Estimate:	$ 875,000
Project Balance	$ -	Additional Funding Required	$ 875,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Process Improvements			$ 25,000	$ 25,000	$ 25,000	$ 75,000
Control Improvements				$ 200,000	$ 500,000	$ 700,000
Facility Improvements			$ 100,000			$ 100,000
TOTAL	$ -	$ -	$ 125,000	$ 225,000	$ 525,000	$ 875,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Outingdale Water Intake Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mueller **Board Approval:** 10/24/16

Project Description:

The community of Outingdale is a satellite community, with only one source of water for public health and safety purposes. The source is the existing river intake which consists of a slotted well screen and flexible hose laid across the river bottom. During low river flow conditions, the intake screen experiences insufficient water cover and often vortexes and air binds the suction lift pumps. During the recent drought the river levels were sufficiently low to completely expose the intake screen and totally prevent the pumping or delivery of any water to the community. All water instead had to be delivered to Outingdale by utilizing a bulk haul water tanker truck to bring water from elsewhere within the District's distribution system. New facilities will include 1) a horizontal lateral intake screen within a gravel infiltration gallery in the river bed, (similar to a Ranney Collector Well style infiltration gallery) and 2) a packaged in-ground pump station with two submersible pumps with a capacity of 100 gpm each.

Installation of the facilities will involve minor piping to tie-in the new submersible pump station discharge piping to the existing pump station discharge piping, and abandonment of the old suction lift style centrifugal pumps. Electrical power and control will be run to the new package pump station. The proposed project, with revised horizontal lateral intake well screen will allow continued pumping via the in-ground infiltration gallery despite drought induced low river levels which may occur during drought and significantly improve the reliability of the water supply year round.

Basis for Priority:

Project will improve reliability of the Outingdale infrastructure and supply. The project was awarded Prop 84 implementation grant funding of $160,000 in 2016.

Project Financial Summary:			
Funded to Date:	**$ -**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2017 - 2021 Planned Expenditures:**	**$ 90,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 250,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 90,000**

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction		$ 200,000				$ 200,000
Subtotal	**$ 50,000**	**$ 200,000**				**$ 250,000**
Grant offset		$ 160,000				$ 160,000
NET TOTAL	**$ 50,000**	**$ 40,000**	**$ -**	**$ -**	**$ -**	**$ 90,000**

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$50,000
			$0
			$0
Total	**100%**		**$50,000**

Funding Comments: Preliminary costs estimated at $250,000 with installation by District crews. Annual expenditures reflect cost offset by Prop 84 grant ($160,000).

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Pressure Reducing Station Rehabilitation and Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

The District has numerous pressure reducing stations throughout the service area to keep line pressures within acceptable ranges as it travels from Pollock Pines down to El Dorado Hills. This program is to identify specific stations to rehabilitate, replace or upgrade to maintain service reliability throughout the District. Loss of pressure control or valve failure can result in extensive water line damage or complete failure. Program management expenditures identified include prioritizing and designing each PRS replacement. Actual PRS replacement costs for each individual station will be brought to the Board for specific approval.

Basis for Priority:

Existing stations are incurring increasing maintenance costs and reduced service reliability due to age and degradation.

Project Financial Summary:			
Funded to Date:	$ 134,933	Expenditures through end of year:	$ 86,402
Spent to Date:	$ 56,385	2017 - 2021 Planned Expenditures:	$ 1,438,531
Cash flow through end of year:	$ 30,017	Total Project Estimate:	$ 1,524,933
Project Balance	$ 48,531	Additional Funding Required	$ 1,390,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
EDM2PRS6 PN16002	$48,531					$ 48,531
EDM1PRS5 PN16024	$10,000					$ 10,000
GVPRS2/LPRS1	$50,000					$ 50,000
Moose Hall Valve R&R	$200,000					$ 200,000
DSMPRS22 Control		$60,000				$ 60,000
Francisco Rehab		$60,000				$ 60,000
Reservoir 6		$60,000	$500,000			$ 560,000
Various			$120,000	$150,000	$180,000	$ 450,000
TOTAL	$ 308,531	$ 180,000	$ 620,000	$ 150,000	$ 180,000	$ 1,438,531

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$260,000
		$0
		$0
Total	100%	$260,000

Funding Comments: Projects involve upgrade of existing facilities and no planned increase in capacity, therefore funding is 100% water rates.

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Water**

Project Number: PLANNED

Project Name: Pump Station Rehabilitation and Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

The District has numerous distribution pump stations throughout the water service area that operate to increase pressures to customers at higher elevations. This is an annual program to replace, rehabilitate or upgrade pump stations that have reached the end of their service life. Engineering and O&M staff identify and prioritize pump stations in need of upgrades to ensure reliable supply of the necessary pressure and flow to their respective service areas, and to comply with fire flow requirements and incorporate emergency standby power where needed. Replacement components include pumps, hydropneumatic tanks, electrical control, valves, yard piping, SCADA equipment, and buildings to accommodate equipment.

Basis for Priority:

Potential interruption to service throughout the District in the event of failures and continued use of expiring equipment that may pose a threat to the health and safety of customers, employees, and the public.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2017 - 2021 Planned Expenditures:**	$ 1,050,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 1,050,000
Project Balance	$ -	**Additional Funding Required**	$ 1,050,000

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Design	$ 50,000	$ 100,000	$ 50,000	$ 100,000	$ 50,000	$ 350,000
Crestview			$ 200,000			$ 200,000
Ridgeview					$ 500,000	$ 500,000
Quartz						$ -
Swansboro						$ -
TOTAL	$ 50,000	$ 100,000	$ 250,000	$ 100,000	$ 550,000	$ 1,050,000

Funding Sources	**Percentage**	**2017**	**Amount**
Water Rates	100%		$50,000
			$0
Total	**100%**		**$50,000**

Funding Comments: Work involves planning the upgrade of existing facilities for reliability of service and does not increase capacity.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Reservoir 1 Water Treatment Plant Improvements Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This program consists of targeted process, control and facility improvements at the Reservoir 1 Water Treatment Plant. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliablity and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 3,335,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 3,335,000
Project Balance	$ -	Additional Funding Required	$ 3,335,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design		$ 75,000		$ 100,000		$ 175,000
Spent Backwash Treatment (PN 14015)/Pump Station		$ 160,000	$ 150,000	$ 150,000		$ 460,000
Flash Mixer			$ 75,000			$ 75,000
filter media replace						$ -
Reservoir 1 cover R&R					$ 2,500,000	$ 2,500,000
Process Equipment R&R	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
TOTAL	$ 25,000	$ 260,000	$ 250,000	$ 275,000	$ 2,525,000	$ 3,335,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$25,000
		$0
		$0
Total	100%	$25,000

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Sly Park - Reservoir A Water Treatment Plant Improvements Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This program consists of targeted process, control and facility improvements from the Sly Park Reservoir intake to and including the Reservoir A Water Treatment Plant. Several improvements have been identified to insure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established. This program includes the log boom replacement scheduled in Fall 2016.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliablity and reduce maintenance costs. This program is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ 600,000
Spent to Date:		2017 - 2021 Planned Expenditures:	$ 2,360,000
Cash flow through end of year:	$ 600,000	Total Project Estimate:	$ 2,960,000
Project Balance	$ (600,000)	Additional Funding Required	$ 2,960,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Sly Park Reservoir Intake (PN15019)	$ 100,000					$ 100,000
Res A Chemical Containment (PN14019)	$ 50,000					$ 50,000
Process Improvements			$ 25,000	$ 75,000		$ 100,000
Control Improvements		$ 150,000	$ 100,000	$ 200,000	$ 600,000	$ 1,050,000
Diversion Improvements	$ 60,000					$ 60,000
Filter Valve R&R				$ 400,000	$ 400,000	$ 800,000
Facility Improvements	$ 50,000	$ 50,000	$ 50,000	$ 50,000		$ 200,000
TOTAL	$ 260,000	$ 200,000	$ 175,000	$ 725,000	$ 1,000,000	$ 2,360,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$860,000
		$0
		$0
Total	100%	$860,000

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Storage Replacement & Rehabilitation Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This program consists of targeted replacement and rehabilitation of drinking water storage tanks and reservoirs within the distribution system. The District operates 36 steel storage tanks, ranging in age from 5 to 55 years of age, most of which were constructed in the last 15 years as part of the District line and cover program. Additionally, the District operates 7 floating cover drinking water reservoirs ranging in age from 24 to 31 years of age. This program is to identify specific tanks and reservoirs to rehabilitate, replace, or upgrade to maintain service reliability throughout the District. Program management expenditures identified include prioritizing and designing each tank and reservoir improvement project. Actual replacement costs for each individual tank and reservoir will be brought to the Board for specific approval.

Basis for Priority:

Life cycle replacement of District assets due to age and degradation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 2,550,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,550,000
Project Balance	$ -	Additional Funding Required	$ 2,550,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
Design	$ 100,000	$ 175,000	$ 100,000	$ 100,000	$ 50,000	$ 525,000
Swansboro		$ 1,000,000				$ 1,000,000
Dolomite				$ 1,000,000		$ 1,000,000
Reservoir 6						$ -
Ridgeview						$ -
TOTAL	$ 105,000	$ 1,180,000	$ 105,000	$ 1,105,000	$ 55,000	$ 2,550,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$105,000
Total	100%		$105,000

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Waterline Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This program consists of targeted replacement of leaking waterlines including formerly private lines within the District. Replacing leaking and substandard waterlines in the distribution system will reduce the potential for contamination of the drinking water supply, increase reliability, reduce maintenance expenditures and decrease losses. Pipeline projects are prioritized with Operations and Engineering staff based on frequency of leaks and costs of repairs. These estimates and project locations are subject to change as the projects are better defined.

Basis for Priority:

Continuous line breaks affect water quality and supply reliability to customers and increase maintenance costs. This project is required to protect and preserve the health and safety of customers and the public.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 1,500,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,500,000
Project Balance	$ -	Additional Funding Required	$ 1,500,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning			$ 10,000	$ 10,000	$ 10,000	$ 30,000
Design			$ 90,000	$ 90,000	$ 90,000	$ 270,000
Construction			$ 400,000	$ 400,000	$ 400,000	$ 1,200,000
TOTAL	$ -	$ -	$ 500,000	$ 500,000	$ 500,000	$ 1,500,000

Funding Sources	Percentage	2017 Amount
Water Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments: Project involves storage capacity to meet current regulations only, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: City of Placerville - Western Placerville Interchange Project

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Brink **Board Approval:** 10/24/16

Project Description:

The City of Placerville plans to construct a new off ramp on east bound Highway 50 at Ray Lawyer Drive. The project is known as the "Western Placerville Interchange Phase 2". The project will require rerouting portions of Forni Road to make way for the off ramp. The District has existing waterlines in Forni Road that will be impacted by the project and require relocation at District cost since in the public right of way. Base on preliminary information from the City, approximately 1,800 feet of 12-inch waterline may be impacted.

As the District has done with many similar projects with the County, it is anticipated the District will retain the City's consultant to design the waterline relocation. The relocation work would be performed by a contractor retained by the City. A reimbursement agreement would need to be executed between the City and the District. The City intends to start construction in the fall of 2018.

Basis for Priority:

The District has facilities that are in the public right of way that will be impacted by the planned projects. The relocation must be done at the District's cost to make way for the City's project.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 845,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 845,000
Project Balance	$ -	Additional Funding Required	$ 845,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 75,000					$ 75,000
Construction		$ 385,000	$ 385,000			$ 770,000
						$ -
TOTAL	$ 75,000	$ 385,000	$ 385,000	$ -	$ -	$ 845,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$75,000
			$0
			$0
Total	100%		$75,000

Funding Comments: Relocation of an existing waterline.

Wastewater Projects

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 12021

Project Name: Wastewater SCADA System Reliability Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

This project will replace (19) PLC/RTUs and add the required monitoring equipment (instrumentation) at the following lift stations: Arlette, Bar J, Bass Lake Village, Buckeye, Deer Park, Diamond Industrial, Indian Creek, Marina Hills, Motherlode, North Uplands, Oakridge, Rancho Ponderosa, Starbuck, Summit 2, Summit 5, Summit View 1, Thunderhead, Waterford 8, Waterford 9. This list is subject to change pending lift station(s) that may be upgraded separately under a different CIP.

In 2013 and 2014 staff went through an extensive process to define a standardized PLC system setup for all lift stations. Two PLCs were installed in late 2013 and 2014 by staff to wring out the process for planning future installations. 2017-2018 will see a significant catch up effort to address deferred upgrades of existing out-of-date PLCs used extensively for process control in the collection systems. The existing PLCs are now about 30 years old and 10 years beyond their expected useful life. Additionally, these PLCs only provide 10-20% of the monitoring capabilities compared to current standard PLC's (3 to 5 monitoring points versus 30) meaning these facilities have no ability to report pump failures or incrementally report on wet well levels before reaching the high water limit. Also, they can go up to 24 hours before alerting of a communications or control issue, while current standard PLCs will alert within 5 minutes (a 288% increase in time to detect issues proactively). Locating replacement parts and technical support for the old PLCs is nearly impossible.

This project also includes professional services funding to design the electrical and mechanical elements for installation and integration of the PLCs into the facilities and outside construction to install the new PLC systems. In 2016 the project is in the deisgn phase and it is expected to be underconstruction in 2017 through 2018.

Basis for Priority:

End of Life cycle replacement for PLCs / radios controlling wastewater collections. These units are 10 years beyond end of life (15 years in some cases) and require above normal maintenance attention. The District struggles with finding parts and keeping these units in service. The SCADA Group highly recommends immediate replacement to significantly reduce the risks of sanitary sewer overflows (SSO).

Project Financial Summary:			
Funded to Date:	$ 258,022	Expenditures through end of year:	$ 251,307
Spent to Date:	$ 151,307	2017 - 2021 Planned Expenditures:	$ 1,650,000
Cash flow through end of year:	$ 100,000	Total Project Estimate:	$ 1,901,307
Project Balance	$ 6,715	Additional Funding Required	$ 1,643,285

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design	$ 50,000					$ 50,000
Installation	$ 800,000	$ 800,000				$ 1,600,000
						$ -
TOTAL	$ 850,000	$ 800,000	$ -	$ -	$ -	$ 1,650,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$843,285
			$0
			$0
Total	100%		$843,285

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 13034

Project Name: Wastewater Facilities Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Washko **Board Approval:** 10/24/16

Project Description:

This is a program to replace equipment and facilities in the wastewater system that have failed or reached the end of the useful life. Funding will be used for wastewater systems facilities such as roofs, weather shelters for key equipment, levees, roads, flooring, bathrooms, kitchens, and facilities internal and external paint. A roofing Master Plan will be developed through this CIP.

Basis for Priority:

Maintain existing assests, including life cycle replacement of pump stations, pipelines, flumes, canals, and other assets

Project Financial Summary:			
Funded to Date:	$ 195,897	Expenditures through end of year:	$ 187,397
Spent to Date:	$ 187,397	2017 - 2021 Planned Expenditures:	$ 625,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 812,397
Project Balance	$ 8,500	Additional Funding Required	$ 616,500

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 625,000
						$ -
TOTAL	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 625,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$116,500
			$0
			$0
Total	100%		$116,500

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 14028

Project Name: EDHWWTP Odor Control

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

The District has received odor complaints from near-by residences and businesses that surround the EDHWWTP. The plant has some odor control measures, but lacks odor control sufficient to contain foul odors on the plant site. Containing odors on the plant site is a requirement of the discharge permit and odors emitting offsite are a violation of the permit.

In order to determine the specific treatment processes that are the source of the odors, a plant-wide odor study was conducted in order to evaluate, document and determine the odor sources that can lead to off-site complaints. Air sampling was performed and odor dispersion modeling was conducted to determine community impacts from the various odor sources. The study recommended removing the biofilter media and replacing it with a new underdrain system and new media; this maintenance project was 67% completed in 2016 and the final phase will be completed in 2017 using O&M funding. The study also reccomended to plumb the existing EQ tanks to the biofilter and remove the granular activated carbon (GAC) odor control system that currently scrubs the foul air from the EQ tanks, and some minor modifications to the foul air ducting. The removal of the GAC system will save the District approximately $100,000 each time the carbon has to be replaced. The biofilters have the capacity to handle the hydrogen sulfide from the incoming wastewater balance in the EQ tanks and this will provide a longterm solution for the District. In 2016, operations explored the application of chemical addition to treat the incoming hydrogen sulfide but it was not a cost effective solution.

In 2014 staff had the full project designed which was bid in 2015. The bids received were about $1.4M. Staff has been changing plant processes to mitigate as much odor as possible. Staff will be investigating piping the foul air from the EQ tanks to the existing biofilter. This CIP does not include design and construction costs for piping the foul air.

Basis for Priority: regulatory requirement

Odors emitting from the plant site are a violation of the discharge permit, and the District is subject to additional violations and fines.Customer complaints have increased in 2016.

Project Financial Summary:			
Funded to Date:	$ 180,145	Expenditures through end of year:	$ 179,306
Spent to Date:	$ 164,306	2017 - 2021 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 229,306
Project Balance	$ 839	Additional Funding Required	$ 49,161

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 50,000					$ 50,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2017	Amount
Wastewater FCCs	35%		$17,206
Wastewater Rates	65%		$31,954
			$0
Total	100%		$49,161

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 15023

Project Name: EDHWWTP Solar Rehab

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

The solar power array at EDHWWTP was installed In 2006. In 2016 a new monitoring system was installed that provides monitoring data that will be sent to the District's SCADA system. The data will be used to monitor excess power generated and will be either applied as power credit to another plant meter or sell on the open market as renewable energy credits. The 2017 CIP will cover the design work to replace the four power invertors. Operations plans to run the invertors until failure and proceed with bidding the replacement of the failed invertor on an as needed basis. Staff anticipates approximately one failure every other year until all four inverters are replaced; however the failures may occur at irregualar intervals.

Basis for Priority:

Optimize system efficiency, replace obsolete equipment, pursue additional renewable energy sources.

Project Financial Summary:			
Funded to Date:	$ 176,501	Expenditures through end of year:	$ 78,849
Spent to Date:	$ 28,849	2017 - 2021 Planned Expenditures:	$ 450,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 528,849
Project Balance	$ 97,652	Additional Funding Required	$ 352,348

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 150,000		$ 150,000		$ 150,000	$ 450,000
Construction						$ -
						$ -
TOTAL	$ 150,000	$ -	$ 150,000	$ -	$ 150,000	$ 450,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$52,348
			$0
			$0
Total	100%		$52,348

Funding Comments:

2017 CAPITAL IMPROVEMENT PLAN Program: Wastewater

Project Number: 16007

Project Name: Waterford 7 Lift Station Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

Based on a condition assessment performed by engineering and operations this lift station, which was constructed in 1988 and serves 188 EDU's, has reached the end of its useful life. The lift station is a high priority site scheduled for rehabilitation.

New pumps and controls are required, along with associated piping, flow meters and odor control system. Based on condition assessments, it is assumed the existing fiberglass wet well can be rehabilitated and reused. After a new roof is installed and the building trim painted, the existing building will be reused to house the electrical controls. The site will be repaved and a new fence will be installed around the perimeter. The design is expected to be completed in mid 2016. Staff anticipates that construction will start in late 2016 and carry through 2017.

Basis for Priority:

The lift station will continue to degrade increasing the risk of potential failures in the future which could result in hazards to the public and regulatory fines. OSHA compliance issues for workplace safety.

Project Financial Summary:			
Funded to Date:	$ 143,498	Expenditures through end of year:	$ 300,666
Spent to Date:	$ 100,666	2017 - 2021 Planned Expenditures:	$ 1,240,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 1,540,666
Project Balance	$ (157,168)	Additional Funding Required	$ 1,397,168

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design/CM	$ 20,000					$ 20,000
Construction	$ 1,220,000					$ 1,220,000
						$ -
TOTAL	$ 1,240,000	$ -	$ -	$ -	$ -	$ 1,240,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$1,397,168
			$0
			$0
Total	100%		$1,397,168

Funding Comments: No expansion, just serving existing customers

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16008

Project Name: South Pointe Lift Station Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

Based on a condition assessment performed by engineering and operations this lift station, which was constructed in 1990 and serves over 65 EDU's, has reached the end of its useful life. This lift station has experienced a SSO in the recent past. This lift station electrical system is classified as an arc flash Category 3.

New pumps and controls are required, along with associated piping, flow meters and odor controls. Based on condition assessments, it is assumed the existing fiberglass wet well can be rehabilitated and reused. After a new roof is installed and the building trim painted, the existing building will be reused to house the controls. A new fence will be installed around the perimeter. The lift station is located in the public right of way with no formal easement. As part of the project, the District will obtain a formal easement for the lift station from the County. The design is currently underway and staff anticipates will be ready by late 2016. Construction is schdeuled for 2018.

Basis for Priority:

The lift station will continue to degrade increasing the risk of potential failures in the future which could result in hazards to the public and regulatory fines.

Project Financial Summary:			
Funded to Date:	$ 155,537	Expenditures through end of year:	
Spent to Date:	$ 94,339	2017 - 2021 Planned Expenditures:	$ 1,280,000
Cash flow through end of year:		Total Project Estimate:	$ 1,280,000
Project Balance	$ 61,198	Additional Funding Required	$ 1,218,802

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design/CM/Inspection		$ 180,000				$ 180,000
Construction		$ 1,100,000				$ 1,100,000
						$ -
TOTAL	$ -	$ 1,280,000	$ -	$ -	$ -	$ 1,280,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments: Project replaces an existing lift station for current customers.

2017 CAPITAL IMPROVEMENT PLAN Program: Wastewater

Project Number: 16010

Project Name: Wastewater Equipment Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

This is an annual program to replace equipment and facilities used in the wastewater system that have failed or reached end of useful life. Funding will be used to replace pumps, valves, and other equipment that, with replacement, extend the life of the asset. Below is a list of items in need of repair/replacement for the EDHWWTP, DCWWTP, CHWWTP, and Collections Systems: pumps and valves

EDHWWTP
Secondary pump

DCWWTP
Plant drain pump #2 VFD and replace VFD on pump #1
Add second WAS pump
MCC replacement for the US Filter

CHWWTP
Tail water return rehabilitation / automation
Bar screen replacement
Infiltration Study

EDH Collections
Schedule 80 discharge pipe replacement North Uplands LS
Upsize the pumps at North Uplands LS for needed existing capacity
Replace two 140 Hp pumps at St. Andrews
Replace at leaset 10 manholes on Silva Valley Parkway

DC Collections
Schedule 80 discharge pipe replacement at Bass Lake Village, Pioneer Place, Arlette, and Courtside Manor
Upsize the pumps at Pioneer Place for needed existing capacity
Replace two manholes in Cameron Park near local creek

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:			
Funded to Date:	$ 229,808	Expenditures through end of year:	$ 95,571
Spent to Date:	$ 95,571	2017 - 2021 Planned Expenditures:	$ 1,250,000
Cash flow through end of year:		Total Project Estimate:	$ 1,345,571
Project Balance	$ 134,237	Additional Funding Required	$ 1,115,763

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 1,250,000
						$ -
TOTAL	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 1,250,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	70%		$81,034
Wastewater FCCs	30%		$34,729
Total	100%		$115,763

Funding Comments: Funding split based on available plant capacity

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16017

Project Name: DOT Construction Projects - Wastewater

Project Category: State/County Road Projects

Priority:	1	PM:	Brink	Board Approval:	10/24/16

Project Description:

The Board has directed staff to streamline contracting procedures with the El Dorado County Department of Transportation (DOT) for the two agencies' joint projects. EID has many water and sewer lines in roads maintained by the DOT. From time to time, DOT initiates a road project where either EID water or wastewater need to be relocated or upgraded, which presents opportunities to join forces with DOT in the project by simultaneously upgrading and/or relocating our facilities. On August 10, 2015 the Board reauthorized the Master Reimbursement Agreement which is utilized for such projects.

This CIP is intended for staff coordination with DOT throughout the year and for minor projects. This CIP will also be used to fund minor wastewater related relocations performed by the County under the Agreement. Larger utility relocation projects will have a specific CIP that identifies all the work associated with that project.

Basis for Priority:

Projects are required by law, regulation, contract, agreement or license. This includes projects required to meet requirements imposed by federal, State, or local governments. This also includes relocation of District facilities located in the public right-of-way as necessitated by County road improvements.

Project Financial Summary:			
Funded to Date:	$ 49,728	Expenditures through end of year:	$ 4,522
Spent to Date:	$ 2,522	2017 - 2021 Planned Expenditures:	$ 125,000
Cash flow through end of year:	$ 2,000	Total Project Estimate:	$ 129,522
Project Balance	$ 45,206	Additional Funding Required	$ 79,794

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design/Inspection	$25,000	$25,000	$25,000	$25,000	$25,000	$ 125,000
Construction Costs						$ -
						$ -
TOTAL	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000

Funding Sources	Percentage	0	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments: Funding is 100% rates. Typically work involves replacement or relocation of existing facilities. However, funding split will be further evaluated for each project.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16025

Project Name: Town Center Force Main Phase 2

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

This project has been identified as "high priority" due to two recent pipeline failures including a category 1 SSO failure in March 2016 and a category 3 SSO failure in April 2016. The objective of this project is to reduce the potential of sanitary sewer overflows caused by pipe failures. The eight-inch force main runs from the Town Center lift station for 2.6 miles until it ties into the Mother Lode force main at the E Dorado "Y" located two miles west of El Dorado along Mother Lode Drive. The pipe was constructed in 1981 and serves approximately 167 accounts. The pipe is asbestos cement (AC) pipe which is the same material used in the Mother Lode force main. Like the Mother Lode force main, this pipeline is failing due to the AC pipe's low corrosion resistance from the hydrogen sulfides in the pipeline. Staff recommends that the remianing 12,885-feet 8-inch AC force main be replaced.

Staff attempted to find a reliable method of determining the current force main condition while keeping the force main in service. Unfortunately no such method currently exists. Like the Mother Lode force main, the Town Center force main is expected to eventually fail over the entire remaining AC section. The project is currently under design, however the timing of construction is unkown given the District's financial constraints. More planning is needed to determine if the project will be deferred until the next bond issuance or phased. Construction costs will be updated in the 2018 CIP.

Basis for Priority:

If the pipe is not replaced, subsequent sewer spills may occur. If sewer spills occur, the District may be subject to regulatory fines.

Project Financial Summary:			
Funded to Date:	$ 282,990	Expenditures through end of year:	$ 192,760
Spent to Date:	$ 18,760	2017 - 2021 Planned Expenditures:	$ 90,000
Cash flow through end of year:	$ 174,000	Total Project Estimate:	$ 282,760
Project Balance	$ 90,231	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 90,000					$ 90,000
Construction						$ -
						$ -
TOTAL	$ 90,000	$ -	$ -	$ -	$ -	$ 90,000

Funding Sources	Percentage	2017 Amount
Wastewater Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16026

Project Name: Wastewater Generator Program

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Sullivan	Board Approval:	10/24/16

Project Description:

The District currently has 45 permanently located (stationary) generators within the wastewater collections system. Thirteen are larger than 200 Kw and are emergency standby power at the wastewater and water treatment plants as well as pumping stations. Some of the sewer lift stations also have either diesel or propane generators for emergency power. This program is to replace the failing and aging assets to ensure reliable service and safe operations at our facilities.

Basis for Priority:

Replace failing assets to ensure operation of collection system lift stations.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 27,585
Spent to Date:	$ 12,585	2017 - 2021 Planned Expenditures:	$ 460,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 487,585
Project Balance	$ 22,415	Additional Funding Required	$ 437,585

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 10,000					$ 10,000
Design	$ 50,000					$ 50,000
Construction		$400,000				$ 400,000
						$ -
TOTAL	$ 60,000	$ 400,000	$ -	$ -	$ -	$ 460,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$37,585
			$0
			$0
Total	100%		$37,585

Funding Comments: Project replaces existing assets to ensure reliability in collection system.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16029

Project Name: Promontory 1 Odor Control

Project Category: Reliability & Service Level Improvements

Priority:	3	PM:	Sullivan	Board Approval:	10/24/16

Project Description:

The existing Promontory 1 Lift Station was built in 2000 and serves approximately 600 EDUs. It was located in an open field, with no residences near it. In 2016 the Promontory Village 8 residential development was built and now has houses directly adjacent to the lift station. Due to the proximity to the lift station, residences are experiencing odors from the lift station. As part of the District's approval of the Promontory Village 8 development, the District required the developer provide $35,000 towards a portion of future odor control at Promontory 1 Lift Station. That money has been received from the developer. In 2016 the design was completed and it is anticipated the odor control system will be installed and completed in early 2017.

Basis for Priority:

The District did receive monies from the developer for this project and will be required to construct odor control if complaints received. Project will provide community benefit and increase service levels.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 209,357
Spent to Date:	$ 9,357	2017 - 2021 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 259,357
Project Balance	$ (159,357)	Additional Funding Required	$ 209,357

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 50,000					$ 50,000
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2017 Amount
Wastewater Rates	50%	$104,679
Wastewater FCC's	50%	$104,679
		$0
Total	100%	$209,357

Funding Comments: Lift Station primarily serves existing customers, but the need for odor control due to new development.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16035

Project Name: EDHWWTP PLC2 Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

Replace Filters 1-3 PLC panel. The new panel would be a mirror to filter panel 4 - 6.

Basis for Priority:

The current panel has failed components and is no longer supported. This panel represents a significant financial liability to keep in service.

Project Financial Summary:			
Funded to Date:	$ 25,000	Expenditures through end of year:	$ 25,257
Spent to Date:	$ 257	2017 - 2021 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 100,257
Project Balance	$ (257)	Additional Funding Required	$ 75,257

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 35,000					$ 35,000
Construction	$ 40,000					$ 40,000
						$ -
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$75,257
			$0
			$0
Total	100%		$75,257

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16036

Project Name: DC SCADA Network Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eberhard **Board Approval:** 10/24/16

Project Description:

This project funds the redesign and upgrade of the SCADA network at the Deer Creek wastewater treatment plant to bring it into compliance with current standards in use across the industry and within other District treatment facilities. The current SCADA network infrastructure at this location has multiple issues that impact the security and reliability of this mission-critical network. The network provides continuous monitor and control of the automation processes within the plant, and is also used to alert operators of potential treatment problems or failures before they become costly permit violations.

Basis for Priority:

If this project is not implemented, the existing network infrastructure will remain more vulnerable to various risks that potentially lead to permit violations or worse, including:

- extended plant control system outage caused by network equipment failures,
- critical alerts not being delivered to the on call operators, and
- cyber attack originating from inside or outside of the District's networks.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 50,000
Spent to Date:	$ 802	2017 - 2021 Planned Expenditures:	$ 30,000
Cash flow through end of year:	$ 49,198	Total Project Estimate:	$ 80,000
Project Balance	$ 0	Additional Funding Required	$ 30,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 30,000					$ 30,000
						$ -
TOTAL	$ 30,000	$ -	$ -	$ -	$ -	$ 30,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$30,000
			$0
			$0
Total	100%		$30,000

Funding Comments: The funding for this project is contained in the "Wastewater SCADA Network Reliability Program" .

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Business Park 3 Lift Station Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Brink **Board Approval:** 10/24/16

Project Description:

Based on assessments performed by Engineering and Operations, the Business Park 3 lift station is a priority site for replacement. The Business Park 3 Lift Station was constructed in 1983, serves about 140 EDUs, and has reached the end of its useful life. The site receives gravity flows from within the El Dorado Hills business park. The pumps are original and have had many repairs. The steel wet well, discharge piping and pump rails have severe corrosion. The existing original generator and controls are now obsolete. Complete replacement of the site is required.

Lennar's next phase of their planned Carson Creek development (Unit 2) will require a new lift station. Based on the planned location of that lift station and local topography, it appears feasible that the Business Park 3 lift station could be abandoned and the associated sewer flows diverted to the new the new Carson Creek Unit 2 lift station. A cost sharing agreement for that new lift station would need to be executed with Lennar, similar to what was done for the successful Carson Creek 1 Lift Station that was recently completed. The District would share design and construction costs based on needed capacity.

The District understands Lennar desires to start construction of Unit 2 in 2017. The District is currently reviewing a Facility Plan Report for Unit 2, which will be followed by improvement plans for the new underground sewer and waterlines that will be installed within Unit 2 at Lennar's cost. A cost sharing agreement for the new lift station will need to be prepared and approved by the Board, followed by design and construction of the lift station. The schedule presented below is subject to Lennar's schedule if a joint project is performed. The cost presented below are estimates for the District's-portion of a joint project. Actual costs of the project will be higher, with the balanced paid for by Lennar.

Basis for Priority:

The site has reached the end of its useful life. Failure of the lift station could have severe impacts to customers and result in sanitary sewer overflows. If the District enters into agreement with Lennar for joint, the District will be committed to build this new lift station.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2017 - 2021 Planned Expenditures:	$ 550,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 550,000
Project Balance	$ -	Additional Funding Required	$ 550,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction		$ 200,000	$ 300,000			$ 500,000
						$ -
TOTAL	$ 50,000	$ 200,000	$ 300,000	$ -	$ -	$ 550,000

Funding Sources	Percentage	2017 Amount
Wastewater Rates	100%	$50,000
		$0
Total	100%	$50,000

Funding Comments: was the case with the similar Carson Creek 1 Lift Station project (PN 14020), the dollar amount of the Board-award of the construction project would also include Lennar's portion of the project. Their portion of the costs would be placed in an Escrow account prior to Board approval.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Deer Creek Dissolved Oxygen Automation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan/Washko **Board Approval:** 10/24/16

Project Description:

The Deer Creek aeration basin blowers were installed in 1996 and are near the end of their useful life. The electrical wiring that serves the blowers exceeds normal temperatures due to the location and are showing signs of potential failure. This project will be used to develop a basis of design for replacement of the blowers, new electrical conduit routed away from the blower piping heat sink, new dissolved oxgyen meters to control the new blower and automation of the system to achieve overall cost savings by implementing highly efficient equipment and associated computer controls. It is assumed that the blowers can be replaced in phases allowing for consistent compliance during the upgrade. A grant will be pursued through PG&E as part of this project.

Basis for Priority:

The Deer Creek aeration basin blowers are near the end of their useful life. The electrical wiring that serves the blowers exceeds normal temperatures due to the location and are showing signs of potential failure. Without oxygen for the microbes in the aeration basins the plant can not meet permit.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 25,000
Project Balance	$ -	Additional Funding Required	$ 25,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Planning	$ 25,000					$ 25,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$25,000
			$0
			$0
Total	100%		$25,000

Funding Comments: Funding for the core process control network upgrade was previously in the 2012 SCADA System Reliability Program CIP.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: Planned

Project Name: Deer Creek Main Circuit Breaker

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Electrical Code now requires that incident energy (or electrical arc hazard potential) be calculated and posted on every piece of 3 phase equipment. EID has performed those calculations on the Deer Creek WWTP and the results at the main circuit breakers were so high, that it virtually prohibits the ability to maintain the automatic transfer switch and main circuit breaker. This problem is critical to the operation of the facility as failures in the transfer switch or main circuit breaker could render the plant completely off-line until temporary power can be arranged and tied into the buss. Even if all safety precautions are taken, working on this piece of equipment would still be very hazardous to maintenance personnel.

The purpose of this project is research and present methods and steps toward reducing the arc flash hazard and improve maintenance access to the critical main breaker and backup power components.

Basis for Priority:

Failures in the transfer switch or main circuit breaker could render the plant completely off-line until temporary power can be arranged and tied into the buss.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ 25,000
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 1,100,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 1,125,000
Project Balance	$ (25,000)	Additional Funding Required	$ 1,125,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 100,000					$ 100,000
Construction	$ 200,000	$ 800,000				$ 1,000,000
						$ -
TOTAL	$ 300,000	$ 800,000	$ -	$ -	$ -	$ 1,100,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$325,000
			$0
			$0
Total	100%		$325,000

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Wastewater**

Project Number: **PLANNED**
Project Name: **Fall Protection at Lift Stations**
Project Category: **Regulatory Requirements**

Priority: **3** **PM:** **Mutschler** **Board Approval:** **10/24/16**

Project Description:

OSHA recommends the use of engineering or work practice controls to manage or eliminate hazards to the greatest extent possible. This project will improve the fall hazard at ten lift station wetwells. The suggested system will be designed by a structural engineer and will consists of permanent barricading around the wetwells. Thirty-one lift stations have been identified for improving the fall protection. The ten most critical lift stations that would benefit the most from enhanced fall protection in order of priority are as follows:

1. Promontory 2 – 25' deep, raised lid deck causing tripping hazard
2. Marina 1 – 18' deep high flows small raised deck and piping create tripping hazards
3. NYCLS – 19.5' deep, very wide opening, raised deck creating tripping hazard
4. Prom 1 -18' deep raised lid deck causing tripping hazard
5. Prom 3 – 28' deep raised lid deck causing tripping hazard
6. St Andrews – 16' deep, multiple openings and piping create trip hazards, possible pinch point hazards
7. Town Center – 10' deep, wide opening serviced frequently due to rags and grease
8. ED Lift – 15' deep, multiple openings raised deck
9. Highland Hills – 15' deep, limited access to the opening against the building pinch points
10. Shingle Springs – 12' deep, raised deck serviced frequently

Basis for Priority:

Improve fall restraint for health and safety

Project Financial Summary:			
Funded to Date:	**$ -**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2017 - 2021 Planned Expenditures:**	**$ 200,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 200,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 200,000**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Design	**$ 50,000**					**$ 50,000**
Construction	**$ 150,000**					**$ 150,000**
						$ -
TOTAL	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Wastewater Rates	100%		$200,000
Total	**100%**		**$200,000**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater CHWWTP Electrical Improvements Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This project is to add the required electrical wiring and equipment for reliable process operation, replace end of life pumps and allow for back up power previsions to Camino Heights Wastewater Treatment Plant. This project is currently 95% designed.

Basis for Priority:

In 2016 the District corrected failing and poorly automated equipment at this facility to reduce the man hours required to run day to day operations. During this project staff identified major deficiencies in the electrical system that need to be corrected in order to fully leverage our automation investment. Currently the plant is stiffled by a few key limitations that prevent the plant from being fully remote control capable

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 60,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 60,000
Project Balance	$ -	Additional Funding Required	$ 60,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Design	$ 5,000					$ 5,000
Construction	$ 60,000					$ 60,000
						$ -
						$ -
TOTAL	$ 65,000	$ -	$ -	$ -	$ -	$ 65,000

Funding Sources	Percentage	2017 Amount
Wastewater Rates	100%	$65,000
		$0
		$0
Total	100%	$65,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater Collection System Pipeline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

The District has two large collection systems, El Dorado Hills and Deer Creek Collection Systems. These systems are served by a series of lift stations, force mains, and gravity mains that convey wastewater to the El Dorado Hills Wastewater Treatment Plant and the Deer Creek Wastewater Treatment Plant. Together, the plants serve approximately 22,000 connections. The systems are regulated under the State Water Resources Control Board General Waste Discharge Requirements Order No. 2006-003-DWQ adopted in May 2006 and the amendment to the Monitoring and Reporting Program of the SSR WDR, Order No. WQ 2013-0058-EXEC. The District has approximately 2,334,612 linear feet of pipeline (force main 312,877 and gravity sewer 2,021,735). Fifty-two percent of the pipeline is PVC, 26% asbestos cement, 8% is vitreous clay, 1% is ductile iron and 13% has not been delineated. Life of PVC piping is estimated at 100 years, but some sections of vitreous clay pipe and asbestos cement pipe is failing. This project begins to meet the needs of pipline replacement with the current funding capabilities. The top projects for pipe repair are as follows:

1. Brookline Circle EDH 250' 13 root intrusions vitreous clay
2. Brookline Circle EDH 341' 23 root intrusions vitreous clay
3. Tam O Shanter Dr EDH 145.5' 9 root intrustions vitreous clay
4. Brookline Drive EDH 281' 10 root intrustions vitreous clay
5. Shasta Circle EDH 175' 26 root intrusions vitreous clay
6. Francisco Drive EDH 391' 13 defects, roots, holes, visible gaskets
7. Francisco Drive EDH 36' 9 roots, holes, visible gaskets, crushed pipe asbestos cement
8. Francisco Drive EDH 260' crushed pipe, visible gaskets (5) asbestos cement
9. Mesa Verda Drive EDH 275' 8 root intrusions asbestos cement
10. Yellowstone Court EDH 242' 10 root intrusions, 2 root at service, vitreous clay
11. Shasta Circle EDH 350' 32 root intrusions, full circle cracks, vitreous clay
12. Yellowstone Lane EDH 407' 10 root intrusions, cracks, vitreous clay
13. Yellowstone Lane EDH 390' 23 root intrusions, 3 root at services, full circle cracks, crack at joint
14. Yellowstone Lane EDH 300' 24 root intrusions, 2 root at services
15. Yellowstone Lane EDH 311' 49 root intrusions, cracks
16. Waterman Court EDH 301' 27 root intrusions
17. Governor Drive EDH 307' 18 root intrusions and off-sets
18. Stanford Lane EDH 421' 6 root intrusions
19. Toronto Road DC 412' 8 root intrusions, holes
20. Country Club Dr DC 499', 16 full circle cracks

Basis for Priority:

Maintain credibility with the regulators and public for infrastructure maintenance by having a proactive pipeline replacement program. One significant spill to waters of the state could cost the District $10 per gallon in fines.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ 95,000
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 1,100,000
Cash flow through end of year:	$ 95,000	Total Project Estimate:	$ 1,195,000
Project Balance	$ (95,000)	Additional Funding Required	$ 1,195,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 100,000					$ 100,000
Construction		$ 500,000	$ -	$ 500,000	$ -	$ 1,000,000
TOTAL	$ 100,000	$ 500,000	$ -	$ 500,000	$ -	$ 1,100,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$195,000
Total	100%		$195,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: NEW

Project Name: Wastewater Lift Station Upgrade Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

This program combines future lift station upgrades into a single CIP to plan anticipates expenditures. There are several locations that are being or have been investigated. Those locations include: El Dorado Lift Station, Rancho Ponderosa Lift Station, Thunderhead Lift Station, Summit 3 Lift Station. This program will continue to evaluate all facilities for future work.

The El Dorado Lift Station (EDLS) is the main pumping facility for the Mother Lode (eastern area) of the District to the DCWWTP via the Mother Lode force main. The EDLS is a critical District facility located in the town of El Dorado and currently serves 2534 EDUs. The facility was constructed in 1975 and is in need of major repairs to the majority of the key components to increase reliability and facilitate operations. A basis of design report was completed in 2015 and staff anticipates a full design in 2020 with construction in 2021/2022. Design is budgeted for $300,000 and construction is estimated at $3,200,000.

The Rancho Ponderosa Lift Station is located in the Rescue area. Staff anticipates a complete redesign of the lift station in 2017 with construction in 2018. This facility may need to be relocated due to size limitations, the existing small easement, and access issues. Design is anticipated to cost $100,000 with construction costs estimated at $700,000

The Thunderhead Lift Station is located in the Diamond Springs area. Staff anticipates the lift station will require a complete redesign within the next five years. This lift station would be designed to handle all flows from its collection area and the Motherlode Lift Station collection area. This would allow the elimination of the Motherlode Lift Station under a separate program. Design is anticipated to cost $80,000 with construction costs estimated at $600,000. These costs are not reflected in the project financial summary because a timeline has not been determined for this project. The Motherlode elimination costs are not included in this estimate.

Basis for Priority:

This project provides replacement of failing components at this critical facility; thereby providing safe, reliable collection system assets.

Project Financial Summary:			
Funded to Date:	$ 345,591	Expenditures through end of year:	$ 322,970
Spent to Date:	$ 322,970	2017 - 2021 Planned Expenditures:	$ 2,900,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 3,222,970
Project Balance	$ 22,621	Additional Funding Required	$ 2,877,379

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 100,000			$ 300,000		$ 400,000
Construction		$ 700,000	$ 300,000		$ 1,500,000	$ 2,500,000
TOTAL	$ 100,000	$ 700,000	$ 300,000	$ 300,000	$ 1,500,000	$ 2,900,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	65%		$50,297
Wastewater FCC	35%		$27,083
Total	100%		$77,379

Funding Comments: funding split based on plant capacity

2017	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater SCADA Reliability and Automation Improvements Program

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Strahan	Board Approval:	10/24/16

Project Description:

Maintain the reliability and performance of the current SCADA infrastructure used to manage automated process control through timely upgrades to aging critical infrastructure, including local and wide-area process control networks and security systems. Many of the current computers controlling the plant are near 30-years old and completely obsolete.

Priority 2017 actions include:
Basis of design report for upgrade for the computer system that controls the Deer Creek WWTP will be the first priority. This project will create a basis of design report to replace end-of-life equipment and address reliability, security, alerting, and automation control deficiencies. The project will be a multi-million dollar investment over the next several years.

Basis for Priority:

Maintains the reliability and performance of the current SCADA networks used to manage automated operations and perform regulatory reporting functions of the District. Operating SCADA network equipment beyond end of life may represent significant risks to service reliability, operating expenses, and regulatory compliance.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 585,000
Cash flow through end of year:		Total Project Estimate:	$ 585,000
Project Balance	$ -	Additional Funding Required	$ 585,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
EDH WWTP			$ 45,000	$ 150,000		$ 195,000
Deer Creek WWTP	$ 45,000	$ 150,000				$ 195,000
Collections Facilities				$ 45,000	$ 150,000	$ 195,000
						$ -
TOTAL	$ 45,000	$ 150,000	$ 45,000	$ 195,000	$ 150,000	$ 585,000

Funding Sources	Percentage	2017	Amount
Wastewater Rates	100%		$45,000
			$0
			$0
Total	100%		$45,000

Funding Comments:

Recycled Water Projects

2017 CAPITAL IMPROVEMENT PLAN Program: Recycled Water

Project Number: 16013

Project Name: Recycled Water System Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

There are three existing recycled water distribution pumps at the EDHWWTP. The existing pumps operate at or below peak day recycled water demand. The EDHWWTP has no redundant or back up recycled water pump. If a pump were to fail during the recycled water season, the District would need to supplement additional potable water supply to meet recycled water demand. This project will add a fourth pump in the existing wet well to provide pumping capacity during peak day demands and provide redundancy during times of pump maintenance or back up pumping in the case of pump failure. This project is listed and recommended in the Wastewater Facilities Master Plan.

There are three recycled water distribution pumps at the DCWWTP. Two of the pumps are 28 years old and the third was recently replaced due to excessive wear. The two remaining pumps are showing wear and require a plan for replacement. The cost below do not reflect the replacement of any of the DCWWTP recycle water pumps.

Basis for Priority:

Improves system reliability and performance.

Project Financial Summary:			
Funded to Date:	**$ 50,000**	**Expenditures through end of year:**	**$ 70,443**
Spent to Date:	**$ 3,543**	**2017 - 2021 Planned Expenditures:**	**$ 380,000**
Cash flow through end of year:	**$ 66,900**	**Total Project Estimate:**	**$ 450,443**
Project Balance	**$ (20,443)**	**Additional Funding Required**	**$ 400,443**

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 5,000					$ 5,000
Construction	$ 375,000					$ 375,000
						$ -
TOTAL	$ 380,000	$ -	$ -	$ -	$ -	$ 380,000

Funding Sources	Percentage	2017	Amount
Recycled Water Rates	75%		$300,332
Recycled Water FCCs	25%		$100,111
			$0
Total	**100%**		**$400,443**

Funding Comments: This project adds capacity and improves reliability of the existing system.

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Recycled Water**

Project Number: PLANNED

Project Name: DC Discharge Management

Project Category: Regulatory Requirements

Priority: 3 **PM:** Sullivan **Board Approval:** 10/24/16

Project Description:

The State Water Resources Control Board, Division of Water Rights approved a Temporary Change Petition filed by the District allowing the reduction of treated wastewater discharges from the Deer Creek Wastewater Treatment Plant into Deer Creek in 2014 and 2015. The additional supply was used to meet recycled water demands, thus reducing the amount of potable water supplementation. Staff had difficulty modifying and managing the reduced flows into Deer Creek. Adjusting and monitoring the discharge flow rate had to be managed by staff manually, creating overtime and fatigue. The plant has a storage tank for influent flows, and plant water supply pumps. All three of these systems could be managed/modified to allow for the automatic calculation and throttling of discharge based on legal obligations from the Division of Water Rights. Automation of permit requirements helps assure the District meets the stringent requirements for the discharge and assures regulators that the fish are being protected. The estimated expenditures listed are estimates at this time; no design has been completed.

Basis for Priority:

Water Right acquisition requires optimization and automation to dial in discharge flow rates based on fish population needs along Deer Creek.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2017 - 2021 Planned Expenditures:**	$ 115,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 115,000
Project Balance	$ -	**Additional Funding Required**	$ 115,000

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Study/Planning	$ 5,000					$ 5,000
Design		$ 10,000				$ 10,000
Construction			$ 100,000			$ 100,000
						$ -
TOTAL	$ 5,000	$ 10,000	$ 100,000	$ -	$ -	$ 115,000

Funding Sources	**Percentage**	**2017**	**Amount**
Recycled Water Rates	100%		$5,000
			$0
			$0
Total	**100%**		**$5,000**

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Recycled Water**

Project Number: **PLANNED**

Project Name: **Recycled Water SCADA Remote Control**

Project Category: **Reliability & Service Level Improvements**

Priority: **3** **PM:** **Strahan** **Board Approval:** **10/24/16**

Project Description:

Add remote set point and statistical ability to the Recycled Water SCADA System. This project involves programming of the automation controllers and the SCADA screens.

Basis for Priority:

Automation would eliminate the need for a site visit for routine operational changes. The current system has the hardware in place, but lacks the programming to make remote set point changes and to provide statistical information. The statistical information is typically used for maintenance and troubleshooting reports.

Project Financial Summary:			
Funded to Date:	**$ -**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2017 - 2021 Planned Expenditures:**	**$ 45,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 45,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 45,000**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Design						**$ -**
Construction						**$ -**
Programming	**$ 45,000**					**$ 45,000**
						$ -
TOTAL	**$ 45,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 45,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Recycled Water Rates	100%		$45,000
			$0
			$0
Total	**100%**		**$45,000**

Funding Comments: Funding for the core process control network upgrade was previously in the 2012 SCADA System Reliability Program CIP.

Hydroelectric Projects

2017 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: 03011H

Project Name: Forebay Dam Upgrades

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mueller **Board Approval:** 10/24/16

Project Description:

The reservoir is currently restricted 3 feet below the spillway crest by DSOD and FERC until the safety of the dam is improved. DSOD and FERC require that the dam's stability and freeboard be improved to minimum safety standards. Reservoir sediments under the reservoir negatively impact El Dorado Project operations and have reached concerning levels. The Project significantly defers the cost of sediment removal by instead raising the dam. This not only allows continued water and hydropower production, but it also substantially increases water supply reliability and increases non-rate income to the District via additional hydropower revenue. FERC also requires that the spillway outfall, canal inlet to the reservoir, dam face, the two unused penstocks all be remediated. To mitigate these deficiencies, to optimize power generation and increase emergency water storage, the dam will be buttressed and raised 10 feet.
DSOD has issued their approval of the Project and of the certified EIR completed in 2014. FERC has issued their engineering approval for the Project and will issue their final authorization to construct with the completion of the FERC-required 3-stage License Amendment process. Environmental permitting is ongoing through 2016, and construction is planned to begin in 2017. Project cost estimates will be refined as permit conditions are received and will be updated accordingly.

Basis for Priority:

Public safety is to be maintained and DSOD/FERC have issued a dam safety mandate. The Project is required to achieve the following:
- Safety: Protect life and property below the dam and meet dam safety regulatory mandates of DSOD and FERC
- Reliability: Protect and improve drinking water reliability for the District's customers
- Financial: Protect District ratepayers from the cost of required repairs by optimizing hydroelectric generation and minimizing capital costs

Project Financial Summary:			
Funded to Date:	$ 4,693,906	Expenditures through end of year:	$ 4,529,355
Spent to Date:	$ 4,479,355	2017 - 2021 Planned Expenditures:	$ 20,000,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 24,529,355
Project Balance	$ 164,551	Additional Funding Required	$ 19,835,449

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 1,500,000	$ 9,000,000	$ 9,500,000			$ 20,000,000
						$ -
TOTAL	$ 1,500,000	$ 9,000,000	$ 9,500,000	$ -	$ -	$ 20,000,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$707,788
Water Rates	47%		$627,661
			$0
Total	100%		$1,335,449

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 11004

Project Name: Lake Aloha Dam Regulatory Improvements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mueller **Board Approval:** 10/24/16

Project Description:

Part 12D studies and remediation are required for Lake Aloha Dams: the studies included new hydrologies, stability analysis and outlet tower reinforcement. FERC approved these hydrology and stability studies in 2012. The outlet tower reinforcement design is 90% complete. Maintenance to the masonry joints in the main and auxiliary dams is also planned. Construction is planned for 2018. DSOD has requested that the District notify DSOD of the defferal of the work to 2018.

This project continues the work of the previously approved and funded PN 04002H.

Basis for Priority:

Non-compliance with FERC dam safety regulations.

Project Financial Summary:			
Funded to Date:	$ 276,583	Expenditures through end of year:	$ 30,428
Spent to Date:	$ 30,428	2017 - 2021 Planned Expenditures:	$ 385,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 415,428
Project Balance	$ 246,155	Additional Funding Required	$ 138,845

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design	$ 15,000					$ 15,000
Construction		$ 370,000				$ 370,000
						$ -
TOTAL	$ 15,000	$ 370,000	$ -	$ -	$ -	$ 385,000

Funding Sources	Percentage	2017 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 11005

Project Name: Silver Lake Dam Regulatory Study

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mueller **Board Approval:** 10/24/16

Project Description:

Part 12D studies and remediation work are required and completed for Silver Lake Dam: the studies included performing new flood studies, stability analysis, and structural analysis. The flood study found that the Dam is significantly overtopped and at risk of failure under the extreme hypothetical storm event required by FERC. The results of the flood study are under review by FERC with significant further studies anticipated.

The long-term reliability of the dam came into question in the spring of 2015 when a sink hole was discovered. DSOD restricted the reservoir level, and the District conducted emergency repairs and a corresponding geotechnical investigation program. The likely cause of the sink hole is rotted/rotting interior log cribbing original to the 1876 construction.

The upstream face of Silver Lake Dam is also at the end of its useful life. Four interim repair projects have been employed since the late 1990's to stem leakage through the 50 year old gunite lining to extend its life. The three most recent repairs began in 2006 and were approximately every 2 years thereafter. The gunite continues to thin and crumble making repairs increasingly less durable. The timeline for upstream face work has been extended multiple times. If leakage increases through the dam, DSOD and FERC may require acceleration of the design and construction of the permanent repair.

The District is currently evaluating rehabilitation/replacement alternatives to rectify the three major defects (upstream face, interior fill, spillway capacity). The alternatives analysis has been submitted to FERC and DSOD. District staff will be meeting with the regulatory agenacies in late 2016 early 2017 to discuss the preferred alternative. Staff will need to respond to the agency comments on the alternative analysis and potentially provide updates to the report. Design and construction estimates will be refined during the design and permitting process.

This project continues the work of the previously approved and funded PN 06017H.

Basis for Priority:

Compliance with FERC dam safety program requirements.

Project Financial Summary:			
Funded to Date:	$ 554,234	**Expenditures through end of year:**	$ 385,092
Spent to Date:	$ 355,092	**2017 - 2021 Planned Expenditures:**	$ 1,100,000
Cash flow through end of year:	$ 30,000	**Total Project Estimate:**	$ 1,485,092
Project Balance	$ 169,142	**Additional Funding Required**	$ 930,858

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$100,000	$100,000				$ 200,000
Design			$ 300,000	$ 300,000	$ 300,000	$ 900,000
Construction						$ -
						$ -
TOTAL	$ 100,000	$ 100,000	$ 300,000	$ 300,000	$ 300,000	$ 1,100,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	**100%**		**$0**

Funding Comments: Preliminary construction cost estimate not included in 5 year planning horizon. Construction is assumed to take place beyond 5-years but may be accelerated based on further analysis and regulatory feedback.

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 14024

Project Name: Flume 44 Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Noel **Board Approval:** 10/24/16

Project Description:

Flume 44 is 476 feet in length and last replaced in 1948. The flume is of wood construction and consists of one ground level and three elevated flume segments with a maximum height of 34 feet traversing a large existing landslide. The flume has been relined with plywood in 1997 and 2002. Extensive repairs were made to the flume by District crews between 2002 and 2004. In 2014 a comprehensive inspection and physical testing of the asset was conducted showing that the structural members were in degraded condition. As a result, additional repairs were performed on the asset to allow for the continued operations until a complete phased replacement of the flume can be performed. The project include relining 1,614 feet of canal, widen the bench to provide construction and maintenance access, stabilize the active landslide which the elevated flume traverses, and replace the degraged elevated timber flume with a mechanically stabilized earth bench with a steel reinforced shotcrete canal.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ 795,072	Expenditures through end of year:	$ 557,743
Spent to Date:	$ 557,743	2017 - 2021 Planned Expenditures:	$ 6,919,000
Cash flow through end of year:		Total Project Estimate:	$ 7,476,743
Project Balance	$ 237,329	Additional Funding Required	$ 6,681,671

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction Costs	$3,144,000	$3,700,000				$ 6,844,000
Warranty/FERC QCIP			$75,000			$ 75,000
TOTAL	$ 3,144,000	$ 3,700,000	$ 75,000	$ -	$ -	$ 6,919,000

Funding Sources	Percentage	2017	Amount
Water FCCs	53%		$1,540,536
Water Rates	47%		$1,366,136
			$0
Total	100%		$2,906,671

Funding Comments:

2017 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: 14029

Project Name: Esmeralda Tunnel Emergency Repair

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Noel **Board Approval:** 10/24/16

Project Description:

The Esmeralda Tunnel partially collapsed on September 21, 2014 and subsequently caused the El Dorado Canal annual shutdown to occur earlier than planned. Excluding unforeseen conditions, the project will require a total of 3 phases to stabilize the tunnel for worker safety and replace the degraded timber lined sections with a permanent steel reinforced shotcrete liner. Phase 1 was completed on March, 2015, Phase 2 was completed in January 2016, and Phase 3 will occur between August 19, 2016 and January 30, 2017.

Basis for Priority:

Restore tunnel and canal system to operational status to provide continued water delivery for water supply and hydroelectric power generation

Project Financial Summary:			
Funded to Date:	$ 5,369,030	Expenditures through end of year:	$ 1,500,000
Spent to Date:	$ 4,198,928	2017 - 2021 Planned Expenditures:	$ 100,000
Cash flow through end of year:		Total Project Estimate:	$ 1,600,000
Project Balance	$ 1,170,102	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Construction	$ 100,000					$ 100,000
						$ -
						$ -
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2017 CAPITAL IMPROVEMENT PLAN **Program:** **Hydroelectric**

Project Number: 14041

Project Name: Project 184 SCADA System Hardware Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This project is to replace end of life cycle SCADA Hardware, specifically the Moscad L RTUs and level/flow measurement equipment. Replacement sites are: Alarms 3, 5,12, 14, 18, 20, 22, 23 Spills 10, 20A, 20, 23, 27, 32, 37, 42, 44, 47C, Echo Lake, Silver Lake, Pyramid Creek, Forebay, EDPH, Caples Lake. This system has served the district well and is no longer supported. This CIP would slowly replace the existing system over multiple years.

Basis for Priority:

This equipment is at the end of its life cycle and warrants replacement to retain the reliability of the system. Additionally new replacement parts are not available due to obsolescence. This system cannot be support on a modern computer.

Project Financial Summary:			
Funded to Date:	**$ 77,000**	**Expenditures through end of year:**	**$ 65,313**
Spent to Date:	**$ 45,313**	**2017 - 2021 Planned Expenditures:**	**$ 1,525,000**
Cash flow through end of year:	**$ 20,000**	**Total Project Estimate:**	**$ 1,590,313**
Project Balance	**$ 11,687**	**Additional Funding Required**	**$ 1,513,313**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Design	**$ 150,000**					**$ 150,000**
Construction Monitoring	**$ 75,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 1,275,000**
PH Design	**$ 100,000**					**$ 100,000**
PH Construction		**$ -**				**$ -**
TOTAL	**$ 325,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 1,525,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Water Rates	100%		$313,313
			$0
			$0
Total	**100%**		**$313,313**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 15018

Project Name: Penstock Assessment

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Mueller	Board Approval:	10/24/16

Project Description:

Water is provided from Forebay Reservoir to the El Dorado Powerhouse through a 60-inch diameter penstock for power generation. FERC regulations and our standard operating procedures require the penstock to be inspected and assessed at regular intervals. This project was approved in 2015 to perform a large scale assessment of the penstock and determine if any upgrades or replacements need to be made for continued reliability. Work will continue into 2017 and will identify needed improvements. The cost of these improvements are unknown at this time and are not yet included in the CIP.

Basis for Priority:

The project is to maintain penstock safety and to monitor the long-term wall thickness thinning which occurs over time in penstocks. The penstock is one of the highest pressure and oldest in the United States. The last detailed analysis was conducted by Pacific Gas and Electric Company approximately 30 years ago.

Project Financial Summary:			
Funded to Date:	$ 948,363	Expenditures through end of year:	$ 685,269
Spent to Date:	$ 435,269	2017 - 2021 Planned Expenditures:	$ 80,000
Cash flow through end of year:	$ 250,000	Total Project Estimate:	$ 765,269
Project Balance	$ 263,094	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 80,000					$ 80,000
Design		*				$ -
Construction			*	*		$ -
						$ -
TOTAL	$ 80,000	$ -	$ -	$ -	$ -	$ 80,000

Funding Sources	Percentage	2017	Amount
Water rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments: The Board approved a contract and funding for this project in 2015.

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Hydroelectric**

Project Number: 16022

Project Name: Flume 38-40 Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

In 2014, an inspection of the flumes listed in Table 1 found severe degradation of the wooden flume structures that could result in failure. As a result of the inspection, interim repairs were made to Flumes 39/40 to maintain the safe operation of the flumes until a full replacement can occur.

The proposed project includes localized improvements to canal and conversion of wooden flume structures to reinforced canal structures supported on Mechanically Stabilized Earth (MSE) walls. Project components include all-weather Aggregate Base Rock (AB) surface improvements to Camp X Road, a new canal crossing at the siphon, canal bench AB improvements, conversion of Flumes 38 and 39/40 to canal with a new MSE bench, repair of the landslide at the L-Wall (immediately downstream of 39/40), canal replacement, canal crossing at Road R71, and AB improvements to Road R71 to eliminate helicopter use and provide construciton and maintenance access. Construction is estimated in 2018 but may occur earlier in 2017 if design and permitting is completed in time to facilitate an earlier construction date. Current construction cost estimates are based on a 50% design level plans. The cost estimate will be refined as the project design becomes finalized.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to environmentaly sensitive areas. Additionally, one third of the District's water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	**$ 559,052**	**Expenditures through end of year:**	**$ 158,426**
Spent to Date:	**$ 158,426**	**2017 - 2021 Planned Expenditures:**	**$ 5,250,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 5,408,426**
Project Balance	**$ 400,626**	**Additional Funding Required**	**$ 4,849,374**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Study/Planning						**$ -**
Design	**$ 100,000**					**$ 100,000**
Construction		**$ 4,975,000**	**$ 100,000**			**$ 5,075,000**
Warranty/FERC QCIP			**$ 75,000**			**$ 75,000**
TOTAL	**$ 100,000**	**$ 4,975,000**	**$ 175,000**	**$ -**	**$ -**	**$ 5,250,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	**100%**		**$0**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Annual Canal and Flume Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Gibson **Board Approval:** 10/24/16

Project Description:

Canals and flumes are assessed annually by District staff to assess and prioritize needed improvements that will be implemented during the annual Canal outage. These improvements are needed to extend the service life of the asset and maintain system reliability. Improvements to the degraded canal and flume sections include materials, concrete, shotcrete, helicopter support, equipment, and District crew labor. Canal, flume, and spillway improvements are necessary in order to maintain reliability of the water supply. Annual system improvements will be determined by Hydro Operations each spring for implementation to be achieved during the scheduled Canal outage.

Basis for Priority:

These are projects that provide measurable progress toward achieving the District's goals, but over which the District has a moderate level of control as to when they should be performed.

Project Financial Summary:			
Funded to Date:	$ 446,566	Expenditures through end of year:	$ 446,566
Spent to Date:	$ 82,572	2017 - 2021 Planned Expenditures:	$ 2,500,000
Cash flow through end of year:	$ 363,994	Total Project Estimate:	$ 2,946,566
Project Balance	$ 363,994	Additional Funding Required	$ 2,136,006

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 2,500,000
						$ -
TOTAL	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 2,500,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$63,923
Water FCCs	53%		$72,083
			$0
Total	100%		$136,006

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Flume 30 Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Flume 30 is approximately 475 feet in length and last replaced by PG&E in the early 1990's. Abutment stability measures were implemented during the outage of 2011 to ensure the continued integrity of the entire flume. In 2015, visual inspections and core samples of the wooden structural timbers were collected and analyzed. The findings of the inspection show that when the flume was replaced in the 1990's undersized structural timber was used. This condition is compounded today by the degradation of the sills over the last 25 years that have resulted in overstressing of the wood flume support structure. In 2015, District crews added additonal posts and sills and installed additional supports to the cantilevered ends of each sill end to stabilize the flume to ensure safe operation of the asset until a complete replacement can occur. The geotechnical assessment and design for the project have not been started so the construction costs are not shown in this CIP. Construction cost estimates will be refined and added to the CIP upon completion of the geotechnical assessment and design.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to environmentaly sensitive areas. Additionally, one third of the District's water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 350,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 350,000
Project Balance	$ -	Additional Funding Required	$ 350,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning/Env				$ 100,000	$ 250,000	$ 350,000
Geo/Design						$ -
Construction						$ -
Warranty/QCIP						$ -
TOTAL	$ -	$ -	$ -	$ 100,000	$ 250,000	$ 350,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Flume 45 Section Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Noel **Board Approval:** 10/24/16

Project Description:

This section of Flume 45 is an elevated wood flume approximately 100 feet in length and last replaced in 1945, which was constructed to span a section of the historic rock bench that had previously failed. In 2014 the District crews made interim repairs to ensure the continued safe operation. The replacement of this flume is scheduled to occur during the scheduled canal outage in 2020. Construction cost estimates will be revised upon completion of the geotechnical assessment and design.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 970,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 970,000
Project Balance	$ -	Additional Funding Required	$ 970,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 45,000					$ 45,000
Geo/Design		$ 50,000	$ 100,000			$ 150,000
Construction				$ 750,000		$ 750,000
QCIP					$ 25,000	$ 25,000
TOTAL	$ 45,000	$ 50,000	$ 100,000	$ 750,000	$ 25,000	$ 970,000

Funding Sources	Percentage	2017 Amount
Water Rates	47%	$21,150
Water FCCs	53%	$23,850
		$0
Total	100%	$45,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Flume 46A Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Flume 46A is an elevated flume fiberglass lined wood flume, approximately 144 feet in length, and constructed by PG&E in 1966. The substructure lumber is under sized at 8 x 6 feet instead of 8 x 8 feet. This work is scheduled to occur towards the end of this 5-year horizon. Construction costs will be refined once design is complete.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 197,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 197,000
Project Balance	$ -	Additional Funding Required	$ 197,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning/Enviro			$ -	$ -	$ 85,000	$ 85,000
Geo/Design					$ 112,000	$ 112,000
Construction						$ -
FERC QCIP						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 197,000	$ 197,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **Hydroelectric**

Project Number: **PLANNED**

Project Name: **Flume 47C Canal Conversion**

Project Category: **Reliability & Service Level Improvements**

Priority: **2** **PM:** **Noel** **Board Approval:** **10/24/16**

Project Description:

Flume 47C is an elevated flume, approximately 150 feet in length, and constructed by PG&E in the mid 1950's. In 2016, District construction crews made interium repairs to ensure the continued safe operation until a complete replacement of the flume can occur. The geotechnical assessment and design for the project have not been started so the construction costs shown in this CIP is an estimate based on the average of prior construciton bids received for prior flume replacement projects. Construction cost estimates will be refined upon completion of the geotechnical assessment and design.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to environmentaly sensitive areas. Additionally, one third of the District's water supply would be out of service for an extended period to make emergency repairs resulting in interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	**$ -**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2017 - 2021 Planned Expenditures:**	**$ 1,677,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 1,677,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 1,677,000**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Study/Planning	**$ 40,000**	**$ 40,000**				**$ 80,000**
Design	**$ 67,500**	**$ 67,500**				**$ 135,000**
Construction			**$ 1,387,000**			**$ 1,387,000**
Warranty/FERC QCIP				**$ 75,000**		**$ 75,000**
TOTAL	**$ 107,500**	**$ 107,500**	**$ 1,387,000**	**$ 75,000**	**$ -**	**$ 1,677,000**

Funding Sources	**Percentage**	**2017**	**Amount**
	100%		$107,500
			$0
			$0
Total	**100%**		**$107,500**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Flume 48 Replacement/Tunnel option

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Flume 48 was originally constructed of wood in 1876 and supported by an un-mortared, hand-stacked rock bench located north of Highway 50 near Camp 5. In 1948, the wooden flume was completely replaced. District crews have been performing extensive maintenance work of the asset to extend the service life of the critically degraded structure until the full replacement can occur. The District will begin evaluating two replacement alternatives for this degraded flume. Alternative 1 is to stabilize the hand-stacked rock bench utilizing stabilization measures developed and employed at Flume 41 and the degraded wood flume would be replaced with steel reinforced precast flume. Alternative 2 would be to construct a 500 foot tunnel between Flume 48 and Highway 50 and abandon approximately 700 feet of canal and 448 feet of elevated wood flume. Option 2, if feasible, could result in significantly lower construction costs but would require acquisition of two parcels and a FERC boundary adjustment. Design and construction costs are unknown at this time, and will be updated in 2017 after further alternatives analysis. Construction may need to be deferred until the next bond issuance.

Basis for Priority:

The flumes will continue to deteriorate potentially causing flume failures that may result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, 1/3 of the District's water supply would be out of service for an extended period to make emergency repairs resulting in possible interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 150,000
Project Balance	$ -	Additional Funding Required	$ 150,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 150,000					$ 150,000
Design		*	*	*		$ -
Construction					*	$ -
Warranty-FERC QCIP						$ -
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$70,500
Water FCCs	53%		$79,500
			$0
Total	100%		$150,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Hydro Facility Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Gibson **Board Approval:** 10/24/16

Project Description:

This is a program to replace equipment and facilities used in the hydro system that have failed or reached end of useful life. Funding will be used for hydro facilities rehabilitation such as road and building improvements that will extend the life of the asset. Need to replace UDC tank at the fuel tanks as per county inspection at a cost of $25,000. In the process of planning electric gate install at Camp 5. The powerhouse roof is leaking and needs to be replaced.

Basis for Priority:

Project purpose is to maintain existing assets and prolong their useful service life and reliability.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 700,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 700,000
Project Balance	$ (50,000)	Additional Funding Required	$ 700,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 200,000	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 700,000
						$ -
TOTAL	$ 200,000	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 700,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$250,000
Total	100%		$250,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Pacific Tunnel Improvement Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Noel **Board Approval:** 10/24/16

Project Description:

The Pacific Tunnel was constructed in 1929 and is approximately 300 feet in length. The upstream and downstream tunnel portals were replaced in 2003 and constructed of untreated timber, which are now in degraded condition and must be replaced with new timber or permanent steel reinforced shotcrete portals. The tunnel between the portals is unlined and comprised of soft relatively volcanic rock that has eroded below the high water line. To prevent continued erosion of the tunnel and prevent failure, a new steel reinforced shotcrete liner and invert slab must be installed to stop further erosion of the funnel invert and walls. The geotechnical assessment and design for the project have not been started so the construction costs shown in this CIP is an estimate based on construction costs for the Esmeralda Tunnel. Construction cost estimates will be refined upon completion of the geotechnical assessment and design.

Basis for Priority:

The Pacific Tunnel portals, interior side walls, and invert will continue to degrade that will result in the utilmate collapse of the tunnel if not addressed. Failure of the tunnel would cause interruption of Project 184 water deliveries that provides one-third of the District's water supply and hydroelectric power generation for an extended period in order to make emergency repairs.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 1,917,500
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,917,500
Project Balance	$ -	Additional Funding Required	$ 1,917,500

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning		$ 65,000				$ 65,000
Design			$ 160,000			$ 160,000
Construction				$ 1,667,500	$ 25,000	$ 1,692,500
						$ -
TOTAL	$ -	$ 65,000	$ 160,000	$ 1,667,500	$ 25,000	$ 1,917,500

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Spill 3 Cribwall

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

Spillway No. 3 is located on the south side of the American River above the USFS 30-Mile Tract subdivision. Spillway No. 3 is no longer used due to the presence of erosive soils in the spillway channel. The spillway structure and canal bench at this location is supported by an earth fill bench and degraded timber Cribwall, which was identified for replacement during a recent comprehensive inspection of all flumes and spillways in the Project 184 conveyance between Kyburz and Forebay Reservoir.

Basis for Priority:

The flumes will continue to deteriorate potentially causing flume failures that may result in significant impacts to the public, Highway 50, and the South Fork of the American River. Additionally, 1/3 of the District's water supply would be out of service for an extended period to make emergency repairs resulting in possible interruption of the reliable delivery of water for consumptive use and hydroelectric power generation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 2,072,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,072,000
Project Balance	$ -	Additional Funding Required	$ 2,072,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning	$ 76,500					$ 76,500
Design		$ 106,000				$ 106,000
Construction			$ 1,839,500			$ 1,839,500
Warranty-FERC QCIP				$ 50,000		$ 50,000
TOTAL	$ 76,500	$ 106,000	$ 1,839,500	$ 50,000	$ -	$ 2,072,000

Funding Sources	Percentage	2017	Amount
Water Rates	47%		$35,955
Water FCCs	53%		$40,545
			$0
Total	100%		$76,500

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Weber Dam Access

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Wells **Board Approval:** 10/24/16

Project Description:

District staff routinely inspect Weber dam and the communication device located at the top of the dam. Currently staff must climb up steep terrain and over slippery rock to get to the top of the right and left abutments of the dam. The current access route is difficult during dry weather conditions and can be hazardous during wet weather conditions. An injury has occurred in the past when staff was trying to access the left abutment. This project is needed to provide safe access to staff that routinely access the dam. The project will include better trail access and stairways leading to the top of the dam. The design is expected to be completed in 2016/2017 with construction by District crews in 2017. The cost estimates are preliminary as the geotechnical and design work is not yet underway.

Basis for Priority:

This project is needed to improve the safe access for staff to inspect and maintain the facility.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ 50,000
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 200,000
Project Balance	$ (50,000)	Additional Funding Required	$ 200,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 150,000					$ 150,000
						$ -
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Funding Sources	Percentage	2017 Amount
Water Rates	47%	$94,000
Water FCCs	53%	$106,000
		$0
Total	100%	$200,000

Funding Comments:

Recreation Projects

No projects planned for 2017-2021 CIP

General District Projects

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: 06004G

Project Name: SMUD / El Dorado Agreement Water Rights

Project Category: Regulatory Requirements

Priority: 1 **PM:** Poulsen **Board Approval:** 10/24/16

Project Description:

The Sacramento Municipal Utility District and El Dorado County interests, including EID, signed an agreement in 2005 that allows for the use of SMUD's UARP reservoirs for county water storage. The agreement did not include water rights. The transfer of City of Sacramento's or related water rights is the most logical source and application has been made to the SWRCB for that change. The SMUD/El Dorado Agreement provides EID with 30,000 acre feet of storage annually up to 2030. Thereafter, 40,000 acre feet of storage annually is provided. Additionally the agreement allows for the banking of up to 15,000 acre feet for drought carryover storage in dry year conditions.

EID is a party to a 2007 cost share agreement with the El Dorado Water and Power Authority (EDWPA) to pursue the water rights for the SMUD/El Dorado Agreement. EID's share under that agreement is approximately 36%, with El Dorado County and El Dorado County contributing approximately 32% each. For its fiscal year 2015-16, EDWPA has budgeted $937,500 in member-agency contributions, putting EID's share through June 2016 at approximately $337,500 including capitalized labor. Any costs associated with one-time acquisition of up to 15,000 acre-feet of drought storage are not included in this request, although efforts to do so are ongoing, because of the uncertain timing and cost of such an acquisition.

Basis for Priority:

The District's 2015 Urban Water Management Plan, its 2013 Water Resources Master Plan, and several Water Supply Assessments completed in 2013 all identify this project as a source of water supply to serve the District's long-term needs. Categorized as Priority 1, required by agreement.

Project Financial Summary:			
Funded to Date:	**$ 2,880,187**	**Expenditures through end of year:**	**$ 2,770,697**
Spent to Date:	**$ 2,770,697**	**2017 - 2021 Planned Expenditures:**	**$ 637,500**
Cash flow through end of year:		**Total Project Estimate:**	**$ 3,408,197**
Project Balance	**$ 109,490**	**Additional Funding Required**	**$ 528,010**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Study/Planning	**$337,500**	**$300,000**				**$ 637,500**
Design						**$ -**
Construction						**$ -**
15,000 af acquisition						**$ -**
TOTAL	**$ 337,500**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ 637,500**

Funding Sources	**Percentage**	**2017**	**Amount**
Water FCCs	100%		$228,010
			$0
			$0
Total	**100%**		**$228,010**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 14035

Project Name: Enterprise GIS

Project Category: Reliability & Service Level Improvements

Priority:	3	PM:	Wells / Ranstrom	Board Approval:	10/24/16

Project Description:

Design and integrate enterprise GIS to existing customer information service database and maintenance management system to improve the data quality and efficiency of multiple current business processes. Project enhances software applications and databases used by staff daily on a broad basis to perform essential operations, planning, management, and service functions. Scores of departmental databases supplement these core databases and are largely stand-alone at this time, requiring duplicate sets of data to be maintained in multiple places and causing inefficiency to manage and locate the data, plus confusion and potentially poor decisions when attempting to use data where quality is poor or inconsistent.

Priorities for 2017 include:

- Phase 3: Finish synchronization of Hansen to GIS data
- Phase 4: Implement Field Maintenance and Inspection Mobile Applications to enable personnel in the field to maintain and inspect (for regulatory purposes) all distributed District assets such as pipelines, hydrants, customer connections, and more. Implement broad workforce access to task-specific GIS & Hansen data via web site development.

Priorities beyond 2017 include:

- Phase 5: Implement Treatment Plant Maintenance and Inspection Applications to enable personnel in the field to maintain and inspect (for regulatory purposes) all assets within District treatment plant and pumping station facilities. Implement workforce automation enhancements.
- Phase 6: Additional enhancements to improve efficiency and data quality

Basis for Priority:

Improve the speed and accuracy of critical and essential business processes used daily to perform operations, customer service, billing, financial management, regulatory reporting, and other key functions of the district.

Project Financial Summary:			
Funded to Date:	$ 460,529	Expenditures through end of year:	$ 438,090
Spent to Date:	$ 238,090	2017 - 2021 Planned Expenditures:	$ 500,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 938,090
Project Balance	$ 22,439	Additional Funding Required	$ 477,561

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Phase 3: Sync Hansen to GIS data	$ 50,000					$ 50,000
Phase 4: Workforce web site & mobile access	$ 150,000					$ 150,000
Phase 5/6: Workforce Automation & improve		$ 150,000	$ 150,000			$ 300,000
TOTAL	$ 200,000	$ 150,000	$ 150,000	$ -	$ -	$ 500,000

Funding Sources	Percentage	2017 Amount
Water Rates	60%	$106,537
Wastewater Rates	40%	$71,024
		$0
Total	100%	$177,561

Funding Comments:

2017 CAPITAL IMPROVEMENT PLAN **Program:** **General District**

Project Number: 16003

Project Name: Permit 21112 Change in Point of Diversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Poulsen **Board Approval:** 10/24/16

Project Description:

In 2013, the District adopted the Integrated Water Resources Master Plan which calls for construction of facilities to divert water at the White Rock Penstock, convey the raw water to a new treatment plant in the Western Region, and transmit the treated water. This project is to prepare feasibility studies required to finalize locations and alignments, refine design criteria and sizing, identify land requirements, and update costs estimates. The water to be diverted will be a combination of 1) supplies obtained by the El Dorado Water and Power Authority and made available under the El Dorado-SMUD Cooperation Agreement, and 2) Permit 21112. To take all or any portion of Permit 21112 water upstream, EID must successfully petition the State Water Resources Control Board (SWRCB) for permit changes to add points of diversion and rediversion. The SWRCB Change Petition process encompasses preparation of the Petition (including preliminary engineering, hydrologic, and biological analyses, mapping, legal review, and preliminary meetings with SWRCB staff, California Department of Fish & Wildlife staff, and other stakeholders); California Environmental Quality Act compliance; prosecution of the Petition; evidentiary hearings before the SWRCB if any protests are unresolved; and potentially administrative appeals and litigation. The planned annual expenditures reflect a timeline of Petition preparation in 2016 and 2017, CEQA compliance and Petition prosecution in 2017 and 2018, and Petition prosecution and SWRCB hearing in 2018. Any post-hearing proceedings would require additional funding. Following completion of feasibility studies additional engineering will include pre-design, design and environmental studies for construction and construction of the facilities.

Basis for Priority:

This project provides measurable progress toward achieving the District's goals, meeting demands of increased growth within the District's service area, expansion of services made necessary by new development, and increases water supply and reliability. The Change Petition process can take many years, particularly if it requires a hearing before the SWRCB. Although construction of White Rock diversion facilities will not commence for some time, it is prudent to begin this regulatory approval process well in advance of construction.

Project Financial Summary:			
Funded to Date:	**$ 50,000**	**Expenditures through end of year:**	**$ 2,781**
Spent to Date:	**$ 2,781**	**2017 - 2021 Planned Expenditures:**	**$ 350,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 352,781**
Project Balance	**$ 47,219**	**Additional Funding Required**	**$ 302,781**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Petition Prep						**$ -**
CEQA/Environmental	**$ 150,000**					**$ 150,000**
Petition Prosecution		**$ 100,000**				**$ 100,000**
SWRCB Hearing		**$ 100,000**				**$ 100,000**
TOTAL	**$ 150,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ 350,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Water FCCs	100%		$102,781
			$0
			$0
Total	**100%**		**$102,781**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 16006

Project Name: AMR and Small Meter Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Pritchard **Board Approval:** 10/24/16

Project Description:

Implementation - This project replaces old, inaccurate, or broken meters and adds automated meter read capability to new and existing meters. The project is MISSION REQUIRED because it provides for replacement of inaccurate and non-working meters and enables all meters to be read in time for billing. The LIABILITY/RISK to the District if this project is not implemented includes increased likelihood of employee injury, increased labor expenses for manually reading the meters and inputting manual data into the computer system, and loss of customer confidence due to inaccurate and estimated reads. REGULATORY: Continued implementation of meter replacement and AMR technology keeps the District in compliance with the CUWCC's MOU BMP# 4. SAFETY/SECURITY: This project reduces employee exposure to injury . As of August 18, 2015 there are 23,530 meters that are equipped with radio read devices. Project funding for implementation should allow the District to install approximately 300 radio read meters per year.

Funded - Outingdale - In addition to information listed above, adding Automated Meter Infrastructure (AMI) would allow us to read all of Outingdale (193 meters) from the office, same as Strawberry. This would allow hourly reads for drought consumption data, allowing the District to better manage drought requirements. Real time customer side leak detection would allow treatment plant to run more efficiently with potential reduction in chemicals and all other treatment process costs. This would eliminate a minimum of 80 work hours annually to read the area and perform change of ownership reads with all associated fuel and other vehicle related costs allowing more effort required to repair and maintain meters throughout the District. Project funding for Outingdale AMI would allow installation of antenna and data collection hardware and the upgrade of 161 meters for a total of 193 radio read meters.

Funded - C8R91 - In addition to information listed in implementation, this would alllow us to upgrade 383 meters in Cycle 8 Route 91 located in Cameron Park. With 543 meters total, this is the largest route left in the District that is not read with the vehicle routes. Average time to read with hand held device is 1 minute per read or nine hours. Average time for read with vehicle and laptop is .07 minutes per read or 38 minutes freeing up over 50 work hours per year for other maintenance duties. This area can be upgraded with just a register and meter transciever unit saving approximatley 1/3 of the cost for complete meter replacement. this allow over 10% of Cameron Park meters to be read via vehicle route.

Basis for Priority:

Hiring of additional personnel, collection of inaccurate data, reduced customer satisfaction, increased likelihood of employee injuries, and non-compliance with BMP #4

Project Financial Summary:			
Funded to Date:	$ 300,000	**Expenditures through end of year:**	$ 100,000
Spent to Date:	$ 81,695	**2017 - 2021 Planned Expenditures:**	$ 600,000
Cash flow through end of year:	$ 18,305	**Total Project Estimate:**	$ 700,000
Project Balance	$ 200,000	**Additional Funding Required**	$ 400,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Implementation		$100,000	$100,000	$100,000	$100,000	$ 400,000
Outingdale (Funded)	$100,000					$ 100,000
C8R91 (Funded)	$100,000					$ 100,000
						$ -
TOTAL	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 600,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$0
			$0
Total	**100%**		**$0**

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 16027

Project Name: Network Switch Upgrade (3560)

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Eberhard	Board Approval:	10/24/16

Project Description:

Replaces about 50% of the District's current local area network switch equipment, which has reached end-of-life and is no longer supported by the manufacturer.

Basis for Priority:

Manufacturer is no longer providing technical support or security patches for this equipment. This switch equipment to be replaced provides network connectivity to about half of the District's employee workstations, IP phones, printers, physical security systems, and assorted other equipment.

Project Financial Summary:			
Funded to Date:	$ 352,000	Expenditures through end of year:	$ 200,000
Spent to Date:	$ 53,901	2017 - 2021 Planned Expenditures:	$ 152,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 352,000
Project Balance	$ 298,099	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 152,000					$ 152,000
						$ -
TOTAL	$ 152,000	$ -	$ -	$ -	$ -	$ 152,000

Funding Sources	Percentage	2017	Amount
Water Rates	60%		$0
Wastewater Rates	40%		$0
			$0
Total	100%		$0

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: 16030

Project Name: Solar Assessment and Design

Project Category: Regulatory Requirements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/24/16

Project Description:

At the October 13, 2015 Board meeting, the Board directed staff to investigate power mitigation projects. Three projects were initially identified, in-conduit hydro for Tank 3 and Tank 7, and the addition of a solar field. Out of this investigation, in-conduit hydro at Tank 7 and the addition of a new solar field are the most viable. Project number 13013 is assigned to The Tank 7 project, while the solar field expansion is now project 16030.

Engineering staff will be issuing an RFP to have a Basis of Design Report (BODR) written to evaluate placing two solar fields. The possible locations are at EDHWWTP, DCWWTP, or one other District owned property. The BODR will evaluate EDHWWTP and DCWWTP for a NEMS 2.0 facility, and the other District owned property for a REC-BCT type facility. The sites are also being evaluated for being owner-operated versus entering into a power purchasing agreement, therefore construction costs are not shown. Tariffs, grants, and modeling will be evaluated for each site and alternative.

Basis for Priority:

Provide increased revenues and/or reduced costs.

Project Financial Summary:			
Funded to Date:	**$ 35,000**	**Expenditures through end of year:**	**$ 72,986**
Spent to Date:	**$ 2,986**	**2017 - 2021 Planned Expenditures:**	**$ 350,000**
Cash flow through end of year:	**$ 70,000**	**Total Project Estimate:**	**$ 422,986**
Project Balance	**$ (37,986)**	**Additional Funding Required**	**$ 387,986**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Study/Planning	**$ 125,000**					**$ 125,000**
Design	**$ 225,000**					**$ 225,000**
Construction		*	*	*	*	**$ -**
						$ -
TOTAL	**$ 350,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 350,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Water Rates	50%		$193,993
Water FCCs	50%		$193,993
			$0
Total	**100%**		**$387,986**

Funding Comments: Estimated construction costs are for two 1MW owner operated facilities

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 16031

Project Name: SCADA Hardware Replacement

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Proctor	Board Approval:	10/24/16

Project Description:

This project replaces 9 SCADA computers (approximately 80% of the District's total SCADA computing infrastructure) which have proven to be very reliable but will reach their end of vendor support on 12/31/2016 and cannot be further upgraded. These computers include high availibility features required to host mission critical SCADA software applications managing treatment, distribution, and collections processes for the District's drinking water, wastewater, and hydroelectic systems. The computers, which cost about $35,000 each using deeply discounted piggy-back contracts, are planned to be purchased individually and installation timed to avoid the peak seasonal use period of the plant or system the computer supports. The design and implementation plan follows IT staffs' proven process of closely studying the current design, analyzing past problems, and applying current best practices related to operating and securing computers.

The funding for this project is contained within the Shared IT Computing Reliability Program CIP in the currently adopted 2016-2020 Capital Improvement Plan. The Shared IT Computing Reliability Program is an ongoing project to maintain the reliability and performance of the mission critical shared computing systems required to conduct daily District business.

Basis for Priority:

Rolling CIP to replace end of life cycle SCADA hardware, ensure service reliability and to reduce problem areas of the SCADA system causing overtime.

Project Financial Summary:			
Funded to Date:	$ 458,370	Expenditures through end of year:	$ 200,000
Spent to Date:	$ 45,919	2017 - 2021 Planned Expenditures:	$ 258,370
Cash flow through end of year:	$ 4,081	Total Project Estimate:	$ 458,370
Project Balance	$ 408,370	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Equipment	$ 180,700	$ -	$ -	$ -	$ -	$ 180,700
Capitalized Labor	$ 36,000					$ 36,000
Minor Materials & Contingency	$ 41,670					$ 41,670
						$ -
TOTAL	$ 258,370	$ -	$ -	$ -	$ -	$ 258,370

Funding Sources	Percentage	2017 Amount
Wastewater Rates	40%	$0
Water Rates	60%	$0
		$0
Total	100%	$0

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: 16037

Project Name: SCADA Configuration & Alarm Response

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This project is to replace the current unsupported call out software, SCADAlarm. In addition, this project will be used to correct and replace SCADA graphics and configurations at the HMI level, since they are closely related to the alarm call out software configuration. This will allow the current system to be more user friendly and to more accurately represent the processes they control. The current visualization of the SCADA system is maintenance intensive and is not intuitive to the end user. This can lend itself to operational error and increased operation and reporting time. This also includes additional SCADA licensing to ensure alarm and data access to remote users.

Basis for Priority:

The current alarm software, SCADAlarm is obsolete and unsupported. SCADAlarm has known "bugs" that have caused notification service interruptions, and put the District at risk for regulatory violations District-wide. This software is key to providing reliable service to our ratepayers. Additionally, this software regularly requires staff attention and overtime for corrective maintenance.

Project Financial Summary:			
Funded to Date:	**$ 30,000**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2017 - 2021 Planned Expenditures:**	**$ 225,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 225,000**
Project Balance	**$ 30,000**	**Additional Funding Required**	**$ 195,000**

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Programming	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 225,000**
						$ -
						$ -
						$ -
TOTAL	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 225,000**

Funding Sources	**Percentage**	**2017**	**Amount**
Wastewater Rates	40%		$6,000
Water Rates	60%		$9,000
			$0
Total	**100%**		**$15,000**

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: 2017 Vehicle Replacement

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Warden	Board Approval:	10/24/16

Project Description:

The following vehicle replacements are planned for 2017 - 2021:

2017: 1-1 ton 4X4 mobile workshop, 1-1 ton, water valve truck, 1-1 1/2 ton service truck with crane
2018: 1-1 1/2 ton service truck with crane, 1-1 ton extended cab 4X4 pickup
2019: 1-John Deer excavator, 1-1/2 ton 4X4 pickup,1-1 1/2 ton service truck with crane,1- 4X4 SUV
2020: 1-1/2 ton 4X4 pickup, 1- 1 ton 4X4 service truck,
2021: 3-1/2 ton 4X4 pickup's, 2- 4X4 SUV's, 1- 1 ton 4X4 service truck, 1- 7 yard used dump truck chasses
The planned expenditures are listed below.

Enhances District assets through life-cycle replacement of existing vehicles.

Project Financial Summary:			
Funded to Date:	$ 425,000	Expenditures through end of year:	$ 93,504
Spent to Date:	$ 93,504	2017 - 2021 Planned Expenditures:	$ 1,324,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,417,504
Project Balance	$ 331,496	Additional Funding Required	$ 992,504

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Vehicles	$ 390,000	$ 202,000	$ 304,000	$ 97,000	$ 331,000	$ 1,324,000
						$ -
						$ -
						$ -
TOTAL	$ 390,000	$ 202,000	$ 304,000	$ 97,000	$ 331,000	$ 1,324,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$58,504
			$0
			$0
Total	100%		$58,504

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Cyber Security Improvements

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Eberhard	Board Approval:	10/24/16

Project Description:

This project will enhance and implement technology, plans, policies, and procedures identified by the 2011 Enterprise Security Assessment Report and required to ensure the ongoing cyber security of District data and IT assets.

Priority 2017 actions include:
Replace end of life intrusion protection system (IPS) equipment that monitors for and actively blocks malicious behavior and actors that have gained access to the District's networks.

Basis for Priority:

If this project is not approved the District may not be able to effectively safeguard information against unauthorized use, disclosure, modification, damage, or loss. These projects address elevating concerns from government agencies to adequately protect utility information technology assets from cyber attack.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 600,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 600,000
Project Balance	$ -	Additional Funding Required	$ 600,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Prevention Measures		$250,000				$ 250,000
Detection Measures			$120,000			$ 120,000
Response Measures	$230,000					$ 230,000
						$ -
TOTAL	$ 230,000	$ 250,000	$ 120,000	$ -	$ -	$ 600,000

Funding Sources	Percentage	2017	Amount
Water Rates	60%		$138,000
Wastewater Rates	40%		$92,000
			$0
Total	100%		$230,000

Funding Comments: Funding carried over from prior year in CIP with the same name.

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: PLANNED

Project Name: Diversion Gaging Measurement and Reporting Requirements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 10/24/16

Project Description:

Senate Bill 88 mandated new diversion reporting and measurement requirements for all surface water rights holders within California who divert more than 10 acre-feet per year. SB 88 has a phased effective date between January 2017 and January 2018 depending on size of diversion. The District participated in an ACWA task force in an attempt to eliminate or modify these new requirements, but the law still passed and is now phasing into effect. Staff has initially evaluated the District's water right portfolio and determined many of the facilties currently comply with the new regulation, but some of the smaller diversion facilities for the smaller water rights will require modification to add measurement and/or SCADA communication. The existing budget is an estimate subject to revision as the evaluation is completed the specific needs of each facility and total number of facilities are finalized.

Basis for Priority:

If the District does not comply with this requirement, there would be unacceptable risk to the security of the District's water rights including civil liability up to $500 per day pursuant to Water Code Section 1846.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ 20,000
Spent to Date:	$ -	**2017 - 2021 Planned Expenditures:**	$ 150,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 170,000
Project Balance	$ -	**Additional Funding Required**	$ 170,000

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Design and installation	$ 25,000	$ 25,000	$ -	$ -	$ -	$ 50,000
Staff time	$ 35,000	$ 35,000				$ 70,000
Permitting	$ 15,000	$ 15,000				$ 30,000
						$ -
TOTAL	$ 75,000	$ 75,000	$ -	$ -	$ -	$ 150,000

Funding Sources	**Percentage**	**2017**	**Amount**
			$0
Water Rates	100%		$75,000
			$0
Total	**100%**		**$75,000**

Funding Comments:

2017 CAPITAL IMPROVEMENT PLAN Program: General District

Project Number: PLANNED

Project Name: Enterprise Software Application Improvements

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Ranstrom **Board Approval:** 10/24/16

Project Description:

Initiatives to improve the data quality and efficiency of essential business processes though strategic improvements to enterprise database applications. Currently over 250 software applications and scores of databases are used daily by District employees to perform routine job functions including asset management, maintenance management, customer service, records management, financial management, procurement, project management, and geospatial information management. The applications and databases are largely stand-alone at this time, causing duplicate sets of data to be maintained in multiple places and leading to widespread inefficiency, plus confusion and potentially poor decisions when using data where the quality is poor or inconsistent.

Priority actions for 2017 include:
- Enterprise Records Management System consolidation to include "content" (e.g. records, documents, images, forms, etc...) currently residing in multiple systems and implement access to asset-related conent from GIS views.

2018 actions include:
- Streamline business workflows (e.g. forms routing and approval; automate records archiving and retention policies; etc...).
- Operations Data Integration automating the compilation of operations data from SCADA, LIMS, and other sources for operations trend analysis, reporting, and improved data sharing among operations, engineering, and other District units.

Future actions incude:
- Replace Hansen 7 database software that has seen no new feature development since 2003 and no longer supports current and evolving regulatory and operational requirements.

Basis for Priority:

Improve the speed and accuracy of critical business processes used to perform operations, customer service, billing, financial management, regulatory reporting, and other key functions of the district.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2017 - 2021 Planned Expenditures:**	$ 2,800,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 2,800,000
Project Balance	$ -	**Additional Funding Required**	$ 2,800,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Maintenance Management Systems	$ 50,000	$ 400,000	$ 300,000			$ 750,000
Performance & Business Management Systems		$ 150,000			$ 50,000	$ 200,000
Customer Service & Billing Systems	$ -			$ 750,000	$ 750,000	$ 1,500,000
Records Management Systems	$ 200,000	$ 150,000				$ 350,000
TOTAL	$ 250,000	$ 700,000	$ 300,000	$ 750,000	$ 800,000	$ 2,800,000

Funding Sources	Percentage	2017	Amount
Water Rates	60%		$150,000
			$0
Total	**60%**		**$150,000**

Funding Comments: Funding carried over from prior year in CIP with the name Business Application Software Enhancement Program.

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: IT Network and Communications Reliability Program

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Ranstrom	Board Approval:	10/24/16

Project Description:

This ongoing project maintains the reliability and performance of the District's networks and shared communications systems required to conduct daily District business by replacing end-of-life or over-utilized equipment and systems, including network switches and routers, phone systems, email systems, and specialized resources enabling communications and collaboration.

Major actions in 2017 include:
- Replace end of life network switches (40% of total units) that serve numerous District facilities and collectively provide connectivity for over 300 network devices, including workstations, printers, phones, and security systems.
- Replace end of life network routers (95% of total units) that serve the wide area network interconnecting all of the District's facilities.

Basis for Priority:

Maintain the reliability and performance of the current business IT network used to perform operations, customer service, billing, financial management, regulatory reporting, security, and other critical and essential functions of the district.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 1,285,000
Cash flow through end of year:		Total Project Estimate:	$ 1,285,000
Project Balance	$ -	Additional Funding Required	$ 1,285,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Core and wide area networking	$ 350,000	$ 300,000				$ 650,000
Local area and access networking	$ 255,000		$ 100,000			$ 355,000
Communications and collaboration systems	$ 100,000	$ 180,000				$ 280,000
TOTAL	$ 705,000	$ 480,000	$ 100,000	$ -	$ -	$ 1,285,000

Funding Sources	Percentage	2017 Amount
Water Rates	60%	$423,000
Wastewater Rates	40%	$282,000
		$0
Total	100%	$705,000

Funding Comments: Funding carried over from prior year in CIP, previously part of the Business IT Infrastructure Reliability Program.

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Radio Telemetry and Network Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

Life cycle replacement of our private radio SCADA network components.

Rolling improvement program

Basis for Priority:

Many of our radios in service are past their service life and are slowly failing. This CIP would allow replacement of older telemetry (generally around 15 years old or more) and any related hardware such as antennas, antenna cable, lighting protectors, etc.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 90,000
Cash flow through end of year:		Total Project Estimate:	$ 90,000
Project Balance	$ -	Additional Funding Required	$ 90,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Hardware	$ 35,000	$ 35,000	$ 10,000	$ 10,000		$ 90,000
						$ -
						$ -
						$ -
TOTAL	$ 35,000	$ 35,000	$ 10,000	$ 10,000	$ -	$ 90,000

Funding Sources	Percentage	2017	Amount
Water Rates	60%		$21,000
Wastewater Rates	40%		$14,000
			$0
Total	100%		$35,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: SCADA Master Plan Implementation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

This CIP is to develop SCADA standards and a detailed CIP plan as recommended by our hired consultant. Please referr to the SCADA Master Plan.

Basis for Priority:

There is the potential for "wasted work" and great operational inefficiencies amounting to the hundreds of thousands of dollars or more by moving forward on SCADA development without a written plan or standard.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 2,296,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,296,000
Project Balance	$ -	Additional Funding Required	$ 2,296,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Develop Standards	$ 500,000	$ 700,000				$ 1,200,000
Develop Detailed CIP Plan			$ 400,000			$ 400,000
Develop KPIs				$ 281,000		$ 281,000
Automatic Reports Generation					$ 415,000	$ 415,000
						$ -
						$ -
TOTAL	$ 500,000	$ 700,000	$ 400,000	$ 281,000	$ 415,000	$ 2,296,000

Funding Sources	Percentage	2017	Amount
Water Rates	60%		$300,000
Wastewater Rates	40%		$200,000
			$0
Total	100%		$500,000

Funding Comments: The project replaces existing facilities, therefore is funded by water rates.

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: PLANNED

Project Name: SCADA Software Efficiency Program

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Strahan **Board Approval:** 10/24/16

Project Description:

Maintain and improve the reliability and performance of the current SCADA infrastructure used to manage automated process control through identifing areas that needlessly consume staff time and workflow.

Rolling improvement program

Basis for Priority:

Continue to develop efficiencies in automatic reports, development templates, operational notification and orginizing software programs.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 225,000
Cash flow through end of year:		Total Project Estimate:	$ 225,000
Project Balance	$ -	Additional Funding Required	$ 225,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Consultant Services	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
Software Purchases	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 100,000
						$ -
						$ -
TOTAL	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 225,000

Funding Sources	Percentage	2017 Amount
Water Rates	60%	$27,000
Wastewater Rates	40%	$18,000
		$0
Total	100%	$45,000

Funding Comments:

2017	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Security Equipment Reliability Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kilburg **Board Approval:** 10/24/16

Project Description:

Integrated security systems have been protecting the District's critical infrastructure and key resources since 2006, providing alarm verification through real-time CCTV system viewing of alarm events. Integrated security systems provide timely detection and law enforcement response elements that mitigate theft, vandalism, trespassing, other potentially serious malevolent incidents, and provide an important emergency response capability consistent with the District's Water Vulnerability Assessment, Emergency Operations and Department Emergency Actions Plans as required by the Federal Safe Drinking Water Act, Title IV - Drinking Water Security and Safety.

Basis for Priority:

Maintain integrated security system operational performance, and provide a real-time emergency response assessment tool.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2017 - 2021 Planned Expenditures:	$ 60,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 60,000
Project Balance	$ -	Additional Funding Required	$ 60,000

Description of Work	Estimated Annual Expenditures					
	2017	2018	2019	2020	2021	Total
Study/Planning						$ -
Design						$ -
Construction	$ 60,000					$ 60,000
						$ -
TOTAL	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000

Funding Sources	Percentage	2017	Amount
Water Rates	100%		$60,000
			$0
			$0
Total	100%		$60,000

Funding Comments:

2017 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: PLANNED

Project Name: Shared IT Computing Reliability Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Ranstrom **Board Approval:** 10/24/16

Project Description:

This ongoing project maintains the reliability and performance of the shared computing environments required to conduct daily District business by replacing end-of-life or over-utilized equipment and systems, including host, data storage and backup systems, and specialized resources to manage the unique requirements of the computing environment.

Major actions in 2017 include:
- Replace end-of-life server equipment that hosts the District's essential enterprise and departmental database applications.
- Replace numerous end-of-life thin-client terminals and PC workstations with more reliable and functional solutions.

Basis for Priority:

Maintain the reliability and performance of the current shared computing environment used to perform operations, customer service, billing, financial management, regulatory reporting, security, and other critical and essential functions of the district. End-of-life equipment means it is no longer supported by the manufacturer and presents a significantly heightened risk of failure or security compromise.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2017 - 2021 Planned Expenditures:**	$ 1,545,000
Cash flow through end of year:		**Total Project Estimate:**	$ 1,545,000
Project Balance	$ -	**Additional Funding Required**	$ 1,545,000

Description of Work	**Estimated Annual Expenditures**					
	2017	**2018**	**2019**	**2020**	**2021**	**Total**
Core computing and central data storage	$ 300,000		$ 300,000	$ 280,000		$ 880,000
Distributed computing and data storage					$ 35,000	$ 35,000
Virtual desktop computing	$ 200,000	$ 300,000				$ 500,000
Computing environment and management	$ 50,000			$ 80,000		$ 130,000
TOTAL	$ 550,000	$ 300,000	$ 300,000	$ 360,000	$ 35,000	$ 1,545,000

Funding Sources	**Percentage**	**2017**	**Amount**
Water Rates	60%		$330,000
Wastewater Rates	40%		$220,000
			$0
Total	**100%**		**$550,000**

Funding Comments: Funding carried over from prior year in CIP, previously part of the Business IT Infrastructure Reliability Program.