El Dorado Irrigation District

FIVE YEAR

Capital Improvement Plan

2018—2022

Approved November 13, 2017

El Dorado Irrigation District

2018-2022 CAPITAL IMPROVEMENT PLAN

Approved November 13, 2017

	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$2,349,371	$3,766,762	$848,195	$619,671	$491,191	$8,075,190
Water	$8,930,000	$15,462,500	$8,482,500	$11,012,500	$9,302,500	$53,190,000
Wastewater	$4,332,380	$3,675,000	$4,200,000	$1,750,000	$2,350,000	$16,307,380
Recycled Water	$50,000	$10,000	$100,000	$0	$0	$160,000
Hydroelectric	$21,195,500	$15,604,500	$12,327,836	$8,035,000	$2,710,000	$59,872,836
Recreation	$100,000	$100,000	$150,000	$0	$50,000	$400,000
General District	$1,982,600	$1,559,000	$782,000	$681,000	$950,000	$5,954,600
TOTAL	**$38,939,851**	**$40,177,762**	**$26,890,531**	**$22,098,171**	**$15,853,691**	**$143,960,006**

2017-2021 CAPITAL IMPROVEMENT PLAN

Approved October 24, 2016

	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	$8,046,018
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

2018 - 2022 Capital Improvement Plan
FERC Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
10007	FERC C51.2 RM Caples Boat Launch	FERC	1	40,000	40,000	40,000	40,000	40,000	200,000
15016	FERC:C50.2 CAPLES LAKE CAMPGROUND	FERC	1	1,600,000	500,000	0	0	0	2,100,000
16028	Mill Creek Diversion Structure	FERC	1	60,000	250,000	0	0	0	310,000
06019H	FERC C35 OYSTER CREEK	FERC	1	100,000	0	0	0	0	100,000
06021H	FERC C37.8 WATER TEMP	FERC	1	25,000	35,000	25,000	35,000	25,000	145,000
06025H	FERC C41 Canal Release point	FERC	1	10,000	0	0	0	0	10,000
06076H	FERC:C38.4B CAPLES Spillway Channel Stabilization	FERC	1	40,000	320,000	0	0	0	360,000
06081H	FERC:C50.8 Pacific Crest Trail Crossing	FERC	1	60,000	200,000	0	0	0	260,000
06082H	FERC:C50.1 SILVER LAKE EAST CG FS Upgrade	FERC	1	20,000	2,200,000	500,000	0	0	2,720,000
06086H	FERC:C33 LAKE ALOHA TROUT	FERC	1	12,000	0	0	0	0	12,000
06087H	FERC:C37.1 FISH MONITORING	FERC	1	0	0	0	65,000	65,000	130,000
06088H	FERC:C37.2 MACROINVERTEB	FERC	1	0	0	0	60,000	60,000	120,000
06089H	FERC:C37.3 AMPHIBIAN MON	FERC	1	17,000	0	0	75,000	0	92,000
06090H	FERC:C37.4 RIPARIAN SPEC	FERC	1	0	0	0	25,000	0	25,000
06091H	FERC:C37.5 RIPARN RECRUIT	FERC	1	0	0	0	25,000	0	25,000
06092H	FERC:C37.7 GEOMORPH EVAL	FERC	1	0	20,000	0	75,000	0	95,000
06096H	FERC:C56 HERITAGE RSRCE	FERC	1	50,000	0	0	0	0	50,000
06097H	FERC C59 Facility Management Plan	FERC	1	0	0	0	0	15,000	15,000
06098H	FERC:C46-9 RECREATION RSC	FERC	1	25,000	0	0	0	0	25,000
07003H	FERC C37.9 WATER QUALITY	FERC	1	80,000	0	80,000	0	80,000	240,000
07005H	FERC C51.3 RM ECHO TRAIL	FERC	1	8,000	8,000	8,000	8,000	8,000	40,000
07006H	FERC C51.5&C51.7 RM USFS	FERC	1	50,371	51,762	53,195	54,671	56,191	266,190
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
07030H	FERC C57 Transportation Management Plan	FERC	1	5,000	5,000	5,000	5,000	5,000	25,000
08025H	FERC C44 Noxious Weed Implementation	FERC	1	17,000	17,000	17,000	32,000	17,000	100,000
				2,349,371	**3,766,762**	**848,195**	**619,671**	**491,191**	**8,075,190**

El Dorado Irrigation District

2018 - 2022 Capital Improvement Plan
Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
15025	American River Bridge Pipeline	WA	1	75,000	0	0	0	0	75,000
16005	Diamond Springs Parkway	WA	1	147,500	0	0	0	0	147,500
16016	DOT Construction Projects - Water	WA	1	25,000	25,000	25,000	25,000	25,000	125,000
16039	Western Placerville Interchange	WA	1	300,000	500,000	0	0	0	800,000
17035	Green Valley Bridge Relocation	WA	1	325,000	0	0	0	0	325,000
06004G	SMUD / El Dorado Agreement Water Rights	WA	1	337,500	337,500	337,500	337,500	337,500	1,687,500
11032	Main Ditch - Forebay to Res 1	WA	2	500,000	2,575,000	2,175,000	0	0	5,250,000
13013	Tank 7 In-Conduit Hydro	WA	2	350,000	0	0	0	0	350,000
14027	PLC Replacement	WA	2	45,000	0	0	0	0	45,000
15009	Sly Park Intertie	WA	2	400,000	550,000	550,000	6,625,000	6,575,000	14,700,000
15024	EDH Raw Water Pump Station Upgrades	WA	2	1,440,000	8,960,000	3,110,000	0	0	13,510,000
16003	Permit 21112 Change in Point of Diversion	WA	2	75,000	200,000	0	0	0	275,000
16048	Outingdale Water Intake Replacement	WA	2	100,000	40,000	0	0	0	140,000
17001	AMR/Small Meter Replacement	WA	2	200,000	100,000	100,000	100,000	100,000	600,000
PLANNED	Res 1 WTP Improvement Program	WA	2	325,000	280,000	100,000	100,000	100,000	905,000
PLANNED	Sly Park - Res A WTP Improvement Program	WA	2	100,000	425,000	300,000	100,000	100,000	1,025,000
PLANNED	Storage Replacement Program	WA	2	2,350,000	200,000	750,000	2,600,000	100,000	6,000,000
PLANNED	Waterline Replacement Program	WA	2	840,000	550,000	550,000	400,000	400,000	2,740,000
PLANNED	Folsom - EDHWTP Improvement Program	WA	2	325,000	100,000	100,000	100,000	100,000	725,000
PLANNED	PRS Replacement Program	WA	2	335,000	320,000	185,000	550,000	890,000	2,280,000
PLANNED	Pump Station Replacement Program	WA	2	300,000	100,000	200,000	75,000	575,000	1,250,000
PLANNED	Ditch Water Rights/SCADA	WA	3	5,000	0	0	0	0	5,000
PLANNED	Construction Storage Facility	WA	3	30,000	200,000	0	0	0	230,000
			TOTAL:	**8,930,000**	**15,462,500**	**8,482,500**	**11,012,500**	**9,302,500**	**53,190,000**

El Dorado Irrigation District

2018 - 2022 Capital Improvement Plan
Wastewater Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
16017	DOT Construction Projects - WW	WW	1	25,000	25,000	25,000	25,000	25,000	125,000
16040	Carson Creek 2 / Business Park 3 Abandonment	WW	1	500,000	70,000	0	0	0	570,000
17023	Rancho Ponderosa LS Relocation	WW	1	80,000	370,000	0	0	0	450,000
PLANNED	Deer Creek Main Circuit Breaker	WW	1	300,000	900,000	0	0	0	1,200,000
14038	EDHWWTP WAS DAFT	WW	2	100,000	0	0	0	0	100,000
15036	Silva Valley - EDH Sewerline	WW	2	100,000	0	0	0	0	100,000
16007	Waterford 7 Lift Station Rehab	WW	2	282,380	0	0	0	0	282,380
16008	South Point Lift Station Rehab	WW	2	0	680,000	600,000	0	0	1,280,000
16025	Town Center Force Main Phase 2	WW	2	265,000	0	1,650,000	0	0	1,915,000
16026	Wastewater Generator Program	WW	2	0	100,000	0	100,000	0	200,000
16030	Solar Assessment and Design	WW	2	170,000	0	0	0	0	170,000
17020	WW Collection System Pipeline Replacement	WW	2	525,000	500,000	500,000	500,000	500,000	2,525,000
17021	Fall Protection at Lift Stations	WW	2	65,000	100,000	0	0	0	165,000
17033	DCWWTP Process Control Design	WW	2	75,000	175,000	0	0	0	250,000
17034	Wastewater Collections Facility Relocation	WW	2	0	0	0	0	0	0
PLANNED	Wastewater Communication Upgrade	WW	2	250,000	250,000	500,000	500,000	0	1,500,000
PLANNED	Strolling Hills Pipeline Improvements	WW	2	150,000	0	0	0	0	150,000
PLANNED	Wastewater Lift Station Upgrade Program	WW	2	0	80,000	600,000	300,000	1,500,000	2,480,000
PLANNED	2018 Wastewater Equipment Replacement Program	WW	2	200,000	200,000	200,000	200,000	200,000	1,000,000
PLANNED	Business Park 1 Odor Control	WW	2	120,000	0	0	0	0	120,000
PLANNED	2018 Wastewater Facility Replacement Program	WW	2	625,000	125,000	125,000	125,000	125,000	1,125,000
PLANNED	EDHWWTP Maintenance Storage	WW	2	500,000	0	0	0	0	500,000
PLANNED	Ridgeview 10 Elimination	WW	3	0	100,000	0	0	0	100,000
			TOTAL:	**4,332,380**	**3,675,000**	**4,200,000**	**1,750,000**	**2,350,000**	**16,307,380**

2018 - 2022 Capital Improvement Plan
Recycled Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
17030	DC Discharge Management	RW	3	5,000	10,000	100,000	0	0	115,000
PLANNED	Recycled Water SCADA Remote Control	RW	3	45,000	0	0	0	0	45,000
			TOTAL:	**50,000**	**10,000**	**100,000**	**0**	**0**	**160,000**

El Dorado Irrigation District

2018 - 2022 Capital Improvement Plan
Hydroelectric Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
17003	HM / Canal Failure DS at Flume 10	HY	1	600,000	0	0	0	0	600,000
17004	HM at Flume 5	HY	1	75,000	0	0	0	0	75,000
17008	HM at Flume 9	HY	1	50,000	0	0	0	0	50,000
17013	Forebay Dam Modifications	HY	1	13,000,000	8,000,000	655,336	0	0	21,655,336
PLANNED	Diversion Gaging Requirements	HY	1	50,000	75,000	25,000	0	0	150,000
PLANNED	Weber Dam Access	HY	1	150,000	0	0	0	0	150,000
PLANNED	Lake Aloha Dam Repairs	HY	1	200,000	0	0	0	0	200,000
PLANNED	Silver Lake Dam Replacement	HY	1	150,000	300,000	300,000	300,000	300,000	1,350,000
14024	Flume 44 Canal Conversion	HY	2	4,900,000	3,925,000	75,000	0	0	8,900,000
14041	Project 184 SCADA System HW Replacement	HY	2	438,000	300,000	300,000	85,000	350,000	1,473,000
16022	Flume 38-40 Canal Conversion	HY	2	100,000	0	0	6,900,000	200,000	7,200,000
16044	Pacific Tunnel Portal Rehab	HY	2	65,000	160,000	1,742,500	50,000	0	2,017,500
16046	Powerhouse Roof	HY	2	125,000	100,000	0	0	0	225,000
17025	Flume 45 Abutment Replacement	HY	2	0	0	95,000	100,000	1,060,000	1,255,000
17026	Flume 47C Replacement	HY	2	0	1,494,500	75,000	0	0	1,569,500
17027	Spill 3 Cribwall	HY	2	182,500	0	0	0	0	182,500
17041	Flume 30 Replacement	HY	2	300,000	350,000	8,250,000	0	0	8,900,000
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	100,000	200,000	0	0	0	300,000
PLANNED	Hydro Facility Replacement Program	HY	2	100,000	100,000	100,000	100,000	100,000	500,000
PLANNED	Penstock Stabilization and Repair	HY	2	110,000	100,000	210,000	0	0	420,000
PLANNED	Flume 46A Canal Conversion	HY	2	0	0	0	0	200,000	200,000
			TOTAL:	**21,195,500**	**15,604,500**	**12,327,836**	**8,035,000**	**2,710,000**	**59,872,836**

2018 - 2022 Capital Improvement Plan
Recreation Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
PLANNED	Recreation Facility Replacement Program	RE	2	50,000	0	50,000	0	50,000	150,000
PLANNED	Sly Park Recreation Area Facility Improvements	RE	2	50,000	100,000	100,000	0	0	250,000
			TOTAL:	**100,000**	**100,000**	**150,000**	**0**	**50,000**	**400,000**

General District Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2018 PLANNED	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2018-2022 TOTAL
16027	Network Switch Upgrade (3560)	GD	2	178,600	0	0	0	0	178,600
16037	SCADA Configuration & Alarm Response	GD	2	45,000	0	0	0	0	45,000
PLANNED	2018 Vehice Replacement	GD	2	622,000	304,000	97,000	331,000	410,000	1,764,000
PLANNED	Shared IT Computing Reliability Program	GD	2	250,000	200,000	0	45,000	450,000	945,000
PLANNED	IT Network and Communications Reliability Program	GD	2	382,000	400,000	10,000	20,000	45,000	857,000
PLANNED	Security Equipment Reliability Program	GD	2	60,000	0	0	0	0	60,000
PLANNED	SCADA Master Plan Implementation	GD	2	250,000	200,000	0	0	0	450,000
PLANNED	Cyber Security Improvements	GD	2	0	250,000	120,000	230,000	0	600,000
PLANNED	Radio TLM and Network Replacement Program	GD	2	35,000	35,000	10,000	10,000	0	90,000
17018	SCADA Software Efficiency Program	GD	3	45,000	45,000	45,000	45,000	45,000	225,000
PLANNED	Hansen 7 Software Replacement	GD	3	0	125,000	500,000	0	0	625,000
PLANNED	Mobile GIS and MMS	GD	3	115,000	0	0	0	0	115,000
			TOTAL:	**1,982,600**	**1,559,000**	**782,000**	**681,000**	**950,000**	**5,954,600**

FERC
Projects

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06019H

Project Name: FERC: C35 Oyster Creek

Project Category: Regulatory Requirements

Priority:	1	PM:	Money	Board Approval:	11/13/17

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 approved the District's revised plan in 2013. Environmental permitting is ongoing through 2017 with construction anticipated to begin in fall of 2018.

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:	$ 268,389
Spent to Date:	$ 234,078	2018 - 2022 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 34,312	Total Project Estimate:	$ 368,389
Project Balance	$ 26,561	Additional Funding Required	$ 73,439

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 100,000					$ 100,000
						$ -
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$38,923
Water Rates	47%	$34,516
		$0
Total	100%	$73,439

Funding Comments:

2018 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:** 11/13/17

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:	$ 254,500	Expenditures through end of year:	$ 248,406
Spent to Date:	$ 223,406	2018 - 2022 Planned Expenditures:	$ 145,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 393,406
Project Balance	$ 6,094	Additional Funding Required	$ 138,906

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring	$15,000	$25,000	$15,000	$25,000	$15,000	$ 95,000
Reporting	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
Staff Time	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
						$ -
TOTAL	$ 25,000	$ 35,000	$ 25,000	$ 35,000	$ 25,000	$ 145,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$10,020
Water Rates	47%	$8,886
		$0
Total	100%	$18,906

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06025H

Project Name: FERC: C41 Canal Release Points

Project Category: Regulatory Requirements

Priority: 1 **PM:** Noel **Board Approval:** 11/13/17

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 2018 to include upgrades that have been implemented (e.g., Spillway 46), identify future upgrades, and evaluate the condition of spillway channels. Future design and construction 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	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 10,000					$ 10,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 10,000	$ -	$ -	$ -	$ -	$ 10,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06076H

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

Project Category: Regulatory Requirements

Priority: 1 **PM:** Money **Board Approval:** 11/13/17

Project Description:

This Project is a requirement of the conditions of the FERC license including Section 8 of the El Dorado Relicensing Settlement Agreement, USFS 4(e) condition 38.4b, and SWRCB Water Quality Certification condition 5. These conditions require a stabilization plan (Plan) be developed and implemented in the spillway channel below the Caples Lake Auxiliary Dam where historic operations have caused unstable channel conditions and areas of erosion. The USFS and SWRCB required the District conduct an alternatives analysis to evaluate stabilization of the channel at three different flow regimes: 60 cfs, 120 cfs, and 250 cfs in order to determine the appropriate level of mitigation necessary to stabilize the spillway channel. In June 2017, the District received USFS and SWRCB conditional approval to proceed with design of he 60 cfs stabilization alternative. The District is currently preparing a final Plan incorporating comments from the USFS and SWRCB conditional approvals and will distribute for USFS, SWRCB, and FERC approval later in 2017. Once the Plan is approved by these agencies, the District plans to initiate environmental review and permitting and currently anticipates construction in fall 2018 or 2019, depending on when all necessary regulatory authorizations are received.

Basis for Priority:

If unfunded, EID would be out of 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:	$ 417,816
Spent to Date:	$ 401,341	2018 - 2022 Planned Expenditures:	$ 360,000
Cash flow through end of year:	$ 16,475	Total Project Estimate:	$ 777,816
Project Balance	$ 15,041	Additional Funding Required	$ 344,959

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 40,000					$ 40,000
Design						$ -
Construction		$ 320,000				$ 320,000
TOTAL	$ 40,000	$ 320,000	$ -	$ -	$ -	$ 360,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$13,228
Water Rates	47%		$11,731
			$0
Total	100%		$24,959

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06081H

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

Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 11/13/17

Project Description:

This project is a requirement of the FERC License, Settlement Agreement, and the USFS 4(e) Condition 50.8 which states the licensee shall construct a crossing to meet FS design standards for the Pacific Crest National Scenic Trail across the Echo Conduit at a location agreed to by the FS.
The District has coordinated with the FS regarding the location and general design concepts of the crossing. The District has obtained USFS approval, and is awaiting FERC's approval of a time extension to October 18, 2018 to allow additional time to complete consultation with the FS regarding the design of the crossing, complete environmental review, obtain any necessary permits, and construct the crossing.
Funding is required to conduct cultural resource and biological resource assessments, perform design, and to construct the bridge in accordance with USFS standards.

Basis for Priority:

Project is required by Project 184 license.

Project Financial Summary:			
Funded to Date:	$ 12,000	Expenditures through end of year:	$ 8,006
Spent to Date:	$ 8,006	2018 - 2022 Planned Expenditures:	$ 260,000
Cash flow through end of year:		Total Project Estimate:	$ 268,006
Project Balance	$ 3,994	Additional Funding Required	$ 256,006

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 20,000					$ 20,000
Design	$ 40,000					$ 40,000
Construction		$ 200,000				$ 200,000
TOTAL	$ 60,000	$ 200,000	$ -	$ -	$ -	$ 260,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$29,683
Water Rates	47%		$26,323
			$0
Total	100%		$56,006

Funding Comments: Final construction costs TBD after consultation with USFS

2018	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:** 11/13/17

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 2017 dollars ($2,200,000). The District is required to install a new water system within the campground to the source. The existing source is located approximately 2.5 miles away from the campground, however the District's well is located approximately 1 mile away. The District is working with the USFS to utilize the District's well as the new source to the campground. 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 2018 and anticipated construction in 2019.

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 construct the improvements.

Project Financial Summary:			
Funded to Date:	$ 223,935	Expenditures through end of year:	$ 119,137
Spent to Date:	$ 94,137	2018 - 2022 Planned Expenditures:	$ 2,720,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 2,839,137
Project Balance	$ 104,798	Additional Funding Required	$ 2,615,202

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 20,000					$ 20,000
Construction (Campground)		$ 2,200,000				$ 2,200,000
Construction (Water System)			$ 500,000			$ 500,000
TOTAL	$ 20,000	$ 2,200,000	$ 500,000	$ -	$ -	$ 2,720,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

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.

2018	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:** 11/13/17

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:	$ 43,694
Spent to Date:	$ 43,694	2018 - 2022 Planned Expenditures:	$ 12,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 55,694
Project Balance	$ 43,306	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$12,000	$0	$0	$0	$0	$ 12,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 12,000	$ -	$ -	$ -	$ -	$ 12,000

Funding Sources	Percentage	2018	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

2018	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:** 11/13/17

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:	$ 290,000	Expenditures through end of year:	$ 254,247
Spent to Date:	$ 204,247	2018 - 2022 Planned Expenditures:	$ 130,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 384,247
Project Balance	$ 35,753	Additional Funding Required	$ 94,247

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring				$ 50,000	$ 50,000	$ 100,000
Staff time				$ 15,000	$ 15,000	$ 30,000
						$ -
TOTAL	$ -	$ -	$ -	$ 65,000	$ 65,000	$ 130,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2018	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:** 11/13/17

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:	$ 216,000	Expenditures through end of year:	$ 190,667
Spent to Date:	$ 140,667	2018 - 2022 Planned Expenditures:	$ 120,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 310,667
Project Balance	$ 25,333	Additional Funding Required	$ 94,667

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring				$ 55,000	$ 55,000	$ 110,000
Staff time				$ 5,000	$ 5,000	$ 10,000
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ 60,000	$ 60,000	$ 120,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018	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:** 11/13/17

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:	$ 268,224
Spent to Date:	$ 267,224	2018 - 2022 Planned Expenditures:	$ 92,000
Cash flow through end of year:	$ 1,000	Total Project Estimate:	$ 360,224
Project Balance	$ 24,776	Additional Funding Required	$ 67,224

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
FYLF/MYLF monitoring				$ 75,000		$ 75,000
SFAR flow fluctuations	$ 5,000	$ -	$ -	$ -	$ -	$ 5,000
Lake Aloha monitoring	$ 12,000	$ -	$ -	$ -	$ -	$ 12,000
						$ -
TOTAL	$ 17,000	$ -	$ -	$ 75,000	$ -	$ 92,000

Funding Sources	Percentage	2018 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.

2018	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:** 11/13/17

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:	$ 34,051
Spent to Date:	$ 34,051	2018 - 2022 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 59,051
Project Balance	$ 949	Additional Funding Required	$ 24,051

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring				$ 20,000		$ 20,000
Staff time				$ 5,000		$ 5,000
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ 25,000	$ -	$ 25,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018	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:** 11/13/17

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:	$ 34,093
Spent to Date:	$ 34,093	2018 - 2022 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 59,093
Project Balance	$ 907	Additional Funding Required	$ 24,093

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring				$ 20,000		$ 20,000
Staff Time				$ 5,000		$ 5,000
						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ 25,000	$ -	$ 25,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018	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:** 11/13/17

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:	$ 102,367
Spent to Date:	$ 102,367	2018 - 2022 Planned Expenditures:	$ 95,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 197,367
Project Balance	$ 1,909	Additional Funding Required	$ 93,091

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Monitoring		$ 20,000		$ 65,000		$ 85,000
Staff time				$ 10,000		$ 10,000
				.		$ -
						$ -
TOTAL	$ -	$ 20,000	$ -	$ 75,000	$ -	$ 95,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06096H

Project Name: FERC: C55 Heritage Resources

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 11/13/17

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:	$ 213,344
Spent to Date:	$ 208,344	2018 - 2022 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 263,344
Project Balance	$ 66,236	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Reporting	$45,000	*	*	*	*	$ 45,000
Staff Time	$ 5,000					$ 5,000
						$ -
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Funding is needed in 2018 to conduct an evaluation of the historic rock walls that are located along the El Dorado Canal.

2018	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:** 11/13/17

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 2022. Future costs are subject to change based on the scope of the new plan. 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:	$ 43,714
Spent to Date:	$ 43,714	2018 - 2022 Planned Expenditures:	$ 15,000
Cash flow through end of year:		Total Project Estimate:	$ 58,714
Project Balance	$ 26,286	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning					$ 15,000	$ 15,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 15,000	$ 15,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2018	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:** 11/13/17

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:	$ 284,888	Expenditures through end of year:	$ 274,070
Spent to Date:	$ 229,935	2018 - 2022 Planned Expenditures:	$ 25,000
Cash flow through end of year:	$ 44,135	Total Project Estimate:	$ 299,070
Project Balance	$ 10,818	Additional Funding Required	$ 14,182

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Survey						$ -
Reporting	$ 25,000					$ 25,000
						$ -
TOTAL	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$7,516
Water Rates	47%	$6,665
		$0
Total	100%	$14,182

Funding Comments:

2018	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:** 11/13/17

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:	$ 472,000	Expenditures through end of year:	$ 468,453
Spent to Date:	$ 466,453	2018 - 2022 Planned Expenditures:	$ 240,000
Cash flow through end of year:	$ 2,000	Total Project Estimate:	$ 708,453
Project Balance	$ 3,547	Additional Funding Required	$ 236,453

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018 Amount
Water FCCs	53%	$40,520
Water Rates	47%	$35,933
		$0
Total	**100%**	**$76,453**

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

2018	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:** 11/13/17

Project Description:

Required by the FERC License, Settlement Agreement, and the USFS 4(e) Condition 51.3, which requires the District to provide funding for the following activities at Echo Lakes Trailhead:

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

Funding under this CIP is required to pay the costs for toilet pumping and capitalized labor for operations staff to clean up litter within the site.

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:	$ 19,298
Spent to Date:	$ 17,798	2018 - 2022 Planned Expenditures:	$ 40,000
Cash flow through end of year:	$ 1,500	Total Project Estimate:	$ 59,298
Project Balance	$ 10,702	Additional Funding Required	$ 29,298

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Services	$5,000	$5,000	$5,000	$5,000	$5,000	$ 25,000
Staff time	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 15,000
						$ -
						$ -
TOTAL	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 40,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018	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:** 11/13/17

Project Description:

Required by the FERC License, Settlement Agreement, and USFS 4(e) Condition 51, which, in part, requires the District to provide funding for the following activities:

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.

Funding under this CIP is required to pay the annual fees to the USFS for special use administration and dispersed area patrol on USFS lands affected by the Project and for capitalized labor to patrol the shoreline and clean up litter at Silver Lake and Caples Lake.

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:	$ 408,029	Expenditures through end of year:	$ 455,517
Spent to Date:	$ 407,146	2018 - 2022 Planned Expenditures:	$ 266,190
Cash flow through end of year:	$ 48,371	Total Project Estimate:	$ 721,707
Project Balance	$ (47,488)	Additional Funding Required	$ 313,678

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Fees	$46,371	$47,762	$49,195	$50,671	$52,191	$ 246,190
Staff time	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 20,000
						$ -
						$ -
TOTAL	$ 50,371	$ 51,762	$ 53,195	$ 54,671	$ 56,191	$ 266,190

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$51,865
Water Rates	47%	$45,994
		$0
Total	100%	$97,859

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07010H

Project Name: FERC: C15 Pesticide Use

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 11/13/17

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:	$ 625,619
Spent to Date:	$ 625,619	2018 - 2022 Planned Expenditures:	$ 360,000
Cash flow through end of year:		Total Project Estimate:	$ 985,619
Project Balance	$ 67,381	Additional Funding Required	$ 292,619

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018	Amount
Water FCCs	53%		$6,688
Water Rates	47%		$5,931
			$0
Total	100%		$12,619

Funding Comments: Need to update the plan in 2018 which is anticipated to cost approximately $10k

2018	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:	11/13/17

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:	$ 587,000	Expenditures through end of year:	$ 568,523
Spent to Date:	$ 548,523	2018 - 2022 Planned Expenditures:	$ 250,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 818,523
Project Balance	$ 18,477	Additional Funding Required	$ 231,523

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018	Amount
Water FCCs	53%		$16,707
Water Rates	47%		$14,816
			$0
Total	100%		$31,523

Funding Comments:

2018	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:** 11/13/17

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. Plan updates include 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 by the end of 2017.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	$ 80,000	Expenditures through end of year:	$ 41,855
Spent to Date:	$ 41,855	2018 - 2022 Planned Expenditures:	$ 25,000
Cash flow through end of year:		Total Project Estimate:	$ 66,855
Project Balance	$ 38,145	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
						$ -
TOTAL	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018 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:** 11/13/17

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:	$ 225,342	Expenditures through end of year:	$ 213,749
Spent to Date:	$ 204,749	2018 - 2022 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 9,000	Total Project Estimate:	$ 313,749
Project Balance	$ 11,593	Additional Funding Required	$ 88,407

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Implementation	$15,000	$15,000	$15,000	$30,000	$15,000	$ 90,000
Reporting	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 10,000
						$ -
						$ -
TOTAL	$ 17,000	$ 17,000	$ 17,000	$ 32,000	$ 17,000	$ 100,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$2,866
Water Rates	47%	$2,541
		$0
Total	100%	$5,407

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 10007

Project Name: FERC C51.1 and 51.2 RM Caples Auxiliary Dam and Boat Launch

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 11/13/17

Project Description:

Required by the FERC License, Settlement Agreement, and the USFS 4(e) Condition 51, which, in part, requires the District to provide funding for the following activities:

1. The licensee shall be responsible for one-half the of the following maintenance at the Caples Lake Auxiliary Dam Parking Area: a) routine cleaning, repair, and maintenance of all constructed features, b) toilet pumping, c) trash removal/litter pick up at the site, d) maintenance of the signboards, and e) vegetation management.

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.

Funding under this CIP is required to pay for services, capitalized labor, and materials necessary for operations and maintenance activities at the Caples Lake Auxiliary Dam parking area and at the Caples Lake Boat Launch.

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:	$ 168,639
Spent to Date:	$ 163,639	2018 - 2022 Planned Expenditures:	$ 200,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 368,639
Project Balance	$ 13,361	Additional Funding Required	$ 186,639

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Services	$25,000	$25,000	$25,000	$25,000	$25,000	$ 125,000
Staff time	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 50,000
Materials	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
						$ -
TOTAL	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 200,000

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$14,119
Water Rates	47%	$12,520
		$0
Total	100%	$26,639

Funding Comments:

2018	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:** 11/13/17

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 current dollars ($1,900,000) and estimated staff time. 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. 50.2 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 construct the improvements.

Project Financial Summary:			
Funded to Date:	$ 529,380	Expenditures through end of year:	$ 73,472
Spent to Date:	$ 73,472	2018 - 2022 Planned Expenditures:	$ 2,100,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,173,472
Project Balance	$ 455,908	Additional Funding Required	$ 1,644,092

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction (Campground)	$ 1,400,000	$ 500,000				$ 1,900,000
Construction (Water System)	$ 200,000					$ 200,000
TOTAL	$ 1,600,000	$ 500,000	$ -	$ -	$ -	$ 2,100,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$606,369
Water Rates	47%		$537,723
			$0
Total	100%		$1,144,092

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 current dollars and staff time.

2018	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 16028

Project Name: Mill Creek Diversion Structure

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Mutschler **Board Approval:** 11/13/17

Project Description:

The Mill Creek Diversion is part of the Federal Energy Regulatory Commission (FERC) 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. At the time of relicensing in 2006, the District had anticipated re-establishing the diversion at this location and therefore Mill Creek was included in several resource monitoring plans required by the FERC license. However, in 2012, the District successfully relocated this water right for diversion at Folsom Reservoir through a Warren Act contract with the U.S. Bureau of Reclamation. Since that time, the District has sought variances from FERC to discontinue resource monitoring on this stream because the diversion is no longer in use. Most of the facilities associated with the diversion were removed during the restoration of the canal bench. 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. Forest Service (USFS) has directed the District to remove the remaining structure because it is located on USFS lands and FERC has directed the District to request removal of the diversion as a project feature included in the FERC license. This project was reviewed by FERC during a 2015 project inspection and will be subject to review at the next inspection scheduled for 2020. The District is planning to remove the structure in 2018 or 2019 depending on when all necessary regulatory authorizations are received.

Basis for Priority:

EID would not be in compliance with the requirements of the FERC License.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 19,807
Spent to Date:	$ 19,807	2018 - 2022 Planned Expenditures:	$ 310,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 329,807
Project Balance	$ 30,193	Additional Funding Required	$ 279,807

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 60,000					$ 60,000
Construction		$ 250,000				$ 250,000
						$ -
TOTAL	$ 60,000	$ 250,000	$ -	$ -	$ -	$ 310,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$14,009
Water FCCs	53%	$15,798
		$0
Total	100%	$29,807

Funding Comments:

Water Projects

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 06004G

Project Name: SMUD / El Dorado Agreement Water Rights

Project Category: Regulatory Requirements

Priority: 1 **PM:** Poulsen **Board Approval:** 11/13/17

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. 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	**2018 - 2022 Planned Expenditures:**	$ 1,687,500
Cash flow through end of year:		**Total Project Estimate:**	$ 4,458,197
Project Balance	$ 109,490	**Additional Funding Required**	$ 1,578,010

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$337,500	$337,500	$337,500	$ 337,500	$ 337,500	$ 1,687,500
Design						$ -
Construction						$ -
15,000 af acquisition						$ -
TOTAL	$ 337,500	$ 337,500	$ 337,500	$ 337,500	$ 337,500	$ 1,687,500

Funding Sources	Percentage	2018	Amount
Water FCCs	100%		$228,010
			$0
			$0
Total	**100%**		**$228,010**

Funding Comments:

2018	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:** 11/13/17

Project Description:

The Upper 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 1,800 acre-feet per year on average, is lost to seepage and evapotranspiration. This water could be made available for drinking water or power generation. Piping the Upper Main Ditch provides: 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 in the long term; 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 from EDCWA has been applied for final design and EIR preparation in the amount of $251,500. The Department of Water Resources and Reclamation have both committed $1 M grants for construction of the project. Final design, right of way acquisition and preparation of an environmental impact report are currently underway. The project cost estimate is based on 60% design and includes a 20% construction contingency. Construction is planned to begin Fall 2018. Total project cost is in the range of $9.6 M - $10.4 M depending on the alignment chosen. 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:	**$ 1,956,056**	**Expenditures through end of year:**	**$ 1,592,214**
Spent to Date:	**$ 1,292,214**	**2018 - 2022 Planned Expenditures:**	**$ 5,250,000**
Cash flow through end of year:	**$ 300,000**	**Total Project Estimate:**	**$ 10,442,214**
Project Balance	**$ 363,842**	**Additional Funding Required**	**$ 4,886,158**

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design/Environmental	$250,000	$175,000	$175,000			$ 600,000
Construction Costs	$500,000	$4,100,000	$3,600,000			$ 8,200,000
Easement Acquisition	$50,000					$ 50,000
Subtotal	**$800,000**	**$4,275,000**	**$3,775,000**			$ 8,850,000
Grant offsets	$300,000	$1,700,000	$1,600,000			$ 3,600,000
NET TOTAL	**$ 500,000**	**$ 2,575,000**	**$ 2,175,000**	**$ -**	**$ -**	**$ 5,250,000**

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$136,158
			$0
			$0
Total	**100%**		**$136,158**

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 $3.6 M.

2018	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:** 11/13/17

Project Description:

The Tank 7 In-conduit Hydroelectric Project consists of a 484 kW hydroelectric station on the Pleasant Oak Main where pressure is currently dissipated through a pressure reducing station. Annual generation is estimated to be 1,765,000 kilowatt-hours. Construction is 60% complete and the hydroelectric station is anticipated to be commissioned in early 2018. The PG&E Interconnection Agreement has been executed and final payment made.

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. 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 the Folsom Raw Water Pump Station site. 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:	$ 3,289,816	Expenditures through end of year:	$ 2,933,014
Spent to Date:	$ 1,433,014	2018 - 2022 Planned Expenditures:	$ 350,000
Cash flow through end of year:	$ 1,500,000	Total Project Estimate:	$ 3,283,014
Project Balance	$ 356,802	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Engineering and construction admin.	$ 30,000					$ 30,000
PG&E Interconnection						$ -
Construction	$ 320,000					$ 320,000
TOTAL	$ 350,000	$ -	$ -	$ -	$ -	$ 350,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$0
Water FCCs			$0
			$0
Total	100%		$0

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.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 14027

Project Name: PLC Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Strahan **Board Approval:** 11/13/17

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:	$ 196,862	Expenditures through end of year:	$ 188,354
Spent to Date:	$ 138,354	2018 - 2022 Planned Expenditures:	$ 45,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 233,354
Project Balance	$ 8,508	Additional Funding Required	$ 36,492

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design & PM						$ -
Construction	$ 45,000					$ 45,000
						$ -
						$ -
TOTAL	$ 45,000	$ -	$ -	$ -	$ -	$ 45,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$36,492
			$0
			$0
Total	100%		$36,492

Funding Comments:

2018	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:** 11/13/17

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. 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 includes a new condition assessment; analysis of changed operations that could reduce pumping head up to 180 feet by pumping water from Reservoir A to Reservoir 1 during annual Forebay outages; a rehabilitation methodology versus complete replacement alternatives analysis; and a financial analysis. 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 and provide a longer window for scheduled Reservoir A WTP maintenance. Estimated project cost of $15 M is based on a hybrid lining/replacement combination presented in the December 2016 Draft Evaluation of Rehabilitation Alternatives Technical Memorandum. The technical memorandum also identifies $4.4 M for a new pump station at Reservoir A that would pump water to Reservoir 1 during the Forebay outage. The feasibility of this project element has not been fully investigated to date and therefore is not included in the planning horizon of this CIP. Cost estimates are based on a 10% design level of confidence and include a 30% construction contingency. Typical contingencies for 10% design 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.

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:**	$ 382,323
Spent to Date:	$ 312,323	**2018 - 2022 Planned Expenditures:**	$ 14,700,000
Cash flow through end of year:	$ 70,000	**Total Project Estimate:**	$ 15,082,323
Project Balance	$ 173,729	**Additional Funding Required**	$ 14,526,271

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Engineering	$50,000	$ 300,000	$ 300,000	$ 50,000	$ 50,000	$ 750,000
Environmental		$ 200,000	$ 200,000	$ 75,000	$ 25,000	$ 500,000
Condition Assessment	$350,000					$ 350,000
Right of Way		$ 50,000	$ 50,000			$ 100,000
Construction Management/Inspection				$ 500,000	$ 500,000	$ 1,000,000
Construction				$ 6,000,000	$ 6,000,000	$ 12,000,000
TOTAL	$ 400,000	$ 550,000	$ 550,000	$ 6,625,000	$ 6,575,000	$ 14,700,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$226,271
			$0
Total	**100%**		**$226,271**

Funding Comments: The project extends the life of the facility and restores the intended design capacity, therefore is funded by water rates.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15024

Project Name: Folsom Raw Raw Water Pump Station Improvements

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Money **Board Approval:** 11/13/17

Project Description:

The 2013 Integrated Water Resources Master Plan recommends construction of a new Folsom Raw Water Pump Station (FLRWPS) to improve the reliability of this water supply source for El Dorado Hills. The existing raw water C-side intake pumps were designed as a temporary facility in anticipation of a new raw water pump station with a temperature control device (TCD). The original TCD is no longer being contemplated and the temporary C-Side pumps have completely failed as designed. The A-side intake pumps are at the end of their useful life and the B-side pumps have several years of useful life remaining. The 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 EDHWTP 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 began in April 2017 that is further developing the project, considering phasing, and refining project cost estimates by phase. Final design and environmental review will follow the BODR in late 2017 with the first phase of construction planned to begin Fall 2018. It is anticipated Phase 1 project costs will be in the range of $14 M with Phase 2 improvements occurring beyond the 2018/2022 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 A-side booster pumps is the basis for Priority 1 ranking. This project is needed to maintain service and meet demand for public health and safety purposes.

Project Financial Summary:			
Funded to Date:	$ 1,230,808	Expenditures through end of year:	$ 499,518
Spent to Date:	$ 199,518	2018 - 2022 Planned Expenditures:	$ 13,510,000
Cash flow through end of year:	$ 300,000	Total Project Estimate:	$ 14,009,518
Project Balance	$ 731,290	Additional Funding Required	$ 12,778,710

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design/Evironmental	$ 800,000	$ 10,000	$ 10,000			$ 820,000
Construction management	$ 140,000	$ 450,000	$ 100,000			$ 690,000
Construction Costs	$ 500,000	$ 8,500,000	$ 3,000,000			$ 12,000,000
Grant Offset						$ -
TOTAL	$ 1,440,000	$ 8,960,000	$ 3,110,000	$ -	$ -	$ 13,510,000

Funding Sources	Percentage	2018	Amount
Water Rates	66%		$467,749
Water FCCs	34%		$240,961
Total	100%		$708,710

Funding Comments: The existing pump station has capacity for 17,446 edus. Currently there are 11,446 edu connections with 6000 edus of remaining capacity. Therefore the replacement project should be funded with 66% water rates (11,446/17,446) and 34% water FCC (6,000/17,446).

2018	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:** 11/13/17

Project Description:

Caltrans is replacing 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 is impacted by the proposed project. Approximately 3,550 feet of 6-inch and 8-inch waterline is 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 is being performed by a contractor retained by Caltrans. On April 10, 2017, based on bids received by Caltrans, the Board approved funding for the construction of the project. The project is in active construction and scheduled for completion in 2018.

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. The Board previously approved a Utility Agreement with Caltrans for this work.

Project Financial Summary:			
Funded to Date:	$ 1,652,082	Expenditures through end of year:	$ 1,393,707
Spent to Date:	$ 1,393,707	2018 - 2022 Planned Expenditures:	$ 75,000
Cash flow through end of year:		Total Project Estimate:	$ 1,468,707
Project Balance	$ 258,375	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 75,000					$ 75,000
						$ -
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16003

Project Name: Permit 21112 Change in Point of Diversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Poulsen **Board Approval:** 11/13/17

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 CEQA compliance and Petition prosecution in 2018, and Petition prosecution and SWRCB hearing in 2019. 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:**	**$ 2,865**
Spent to Date:	**$ 2,865**	**2018 - 2022 Planned Expenditures:**	**$ 275,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 277,865**
Project Balance	**$ 47,135**	**Additional Funding Required**	**$ 227,865**

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Petition Prep						$ -
CEQA/Environmental	$ 150,000					$ 150,000
Petition Prosecution		$ 100,000				$ 100,000
SWRCB Hearing		$ 100,000				$ 100,000
Subtotal	$ 150,000	$ 200,000	$ -	$ -	$ -	$ 350,000
EDCWA funding	$ 75,000					$ 75,000
TOTAL	**$ 75,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ 275,000**

Funding Sources	Percentage	2018	Amount
Water FCCs	100%		$27,865
Total	**100%**		**$27,865**

Funding Comments: The District has requested cost share funding assistance from EDCWA

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16005

Project Name: Diamond Springs Parkway / Hwy 49 Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eden-Bishop **Board Approval:** 11/13/17

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. All of the impacted waterlines are located within existing senior easements and therefore the County is required to perform the relocations at their costs. Due to limited hydraulic capacity of some of the existing water lines, the District plans to increase the 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 2017 or early 2018. The County anticipates construction to commence in late 2018.

Basis for Priority:

All of the impacted waterlines are in existing senior 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:	$ 20,724
Spent to Date:	$ 15,724	2018 - 2022 Planned Expenditures:	$ 147,500
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 168,224
Project Balance	$ 4,276	Additional Funding Required	$ 143,224

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Engineering	$ 7,500					$ 7,500
Inspection	$ 15,000					$ 15,000
Construction	$ 110,000					$ 110,000
Water Modeling	$ 15,000					$ 15,000
TOTAL	$ 147,500	$ -	$ -	$ -	$ -	$ 147,500

Funding Sources	Percentage	2018	Amount
Water Rates	0%		$0
Water FCC's	100%		$143,224
Total	100%		$143,224

Funding Comments: Expenditures are estimates based on a draft County reimbursement agreement. The District share will only pay for upsizing of existing facilities with underlying senior easement rights.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16016

Project Name: DOT Construction Projects - Water

Project Category: State/County Road Projects

Priority: 1 **PM:** Wilson **Board Approval:** 11/13/17

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. The agreement is good for five years.

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:	$ 23,204
Spent to Date:	$ 23,204	2018 - 2022 Planned Expenditures:	$ 125,000
Cash flow through end of year:		Total Project Estimate:	$ 148,204
Project Balance	$ 24,573	Additional Funding Required	$ 100,427

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018 Amount
Water Rates	100%	$427
		$0
		$0
Total	100%	$427

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

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Water**

Project Number: 16039

Project Name: City of Placerville - Western Placerville Interchange Project

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Wilson **Board Approval:** 11/13/17

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. Based 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, the District retained the City's consultant to design the waterline relocation. The relocation work would be performed by a contractor retained by the City. The Board approved a reimbursement agreement with the City in 2017. 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:	**$ 107,000**	**Expenditures through end of year:**	**$ 24,121**
Spent to Date:	**$ 14,121**	**2018 - 2022 Planned Expenditures:**	**$ 800,000**
Cash flow through end of year:	**$ 10,000**	**Total Project Estimate:**	**$ 824,121**
Project Balance	**$ 82,879**	**Additional Funding Required**	**$ 717,121**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design						**$ -**
Construction	**$ 300,000**	**$ 500,000**				**$ 800,000**
						$ -
TOTAL	**$ 300,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ 800,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	100%		$217,121
			$0
			$0
Total	**100%**		**$217,121**

Funding Comments: Relocation of existing waterlines.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16048

Project Name: Outingdale Water Intake Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 11/13/17

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:	**$ 26,500**	**Expenditures through end of year:**	**$ 8,033**
Spent to Date:	**$ 3,033**	**2018 - 2022 Planned Expenditures:**	**$ 140,000**
Cash flow through end of year:	**$ 5,000**	**Total Project Estimate:**	**$ 300,000**
Project Balance	**$ 18,467**	**Additional Funding Required**	**$ 121,533**

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction	$ 50,000	$ 200,000				$ 250,000
Subtotal	**$ 100,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ 300,000**
Grant Offset		$ 160,000				$ 160,000
NET TOTAL	**$ 100,000**	**$ 40,000**	**$ -**	**$ -**	**$ -**	**$ 140,000**

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$81,533
			$0
			$0
Total	**100%**		**$81,533**

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17001

Project Name: AMR and Small Meter Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Downey **Board Approval:** 11/13/17

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 September 8, 2017 there are 25,790 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.

C8R91 - In addition to information listed in implementation, this would allow 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 transceiver unit saving approximately 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:	$ 200,000	**Expenditures through end of year:**	$ 199,952
Spent to Date:	$ 46,639	**2018 - 2022 Planned Expenditures:**	$ 600,000
Cash flow through end of year:	$ 153,313	**Total Project Estimate:**	$ 799,952
Project Balance	$ 48	**Additional Funding Required**	$ 599,952

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Implementation	$100,000	$100,000	$100,000	$100,000	$100,000	$ 500,000
C8R91	$100,000					$ 100,000
						$ -
						$ -
TOTAL	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 600,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$199,952
			$0
Total	**100%**		**$199,952**

Funding Comments:

2018 CAPITAL IMPROVEMENT PLAN Program: Water

Project Number: 17035

Project Name: Green Valley Bridge Relocation

Project Category: State/County Road Projects

Priority: 1 **PM:** Wilson **Board Approval:** 11/13/17

Project Description:

El Dorado County plans to construct two new bridges on Green Valley Road one at Mound Springs Creek and one at Indian Creek. The District has existing waterlines and two pressure reducing stations (Green Valley PRS #1 and Greenstone PRS #1) in Green Valley Road that will be impacted by the project and require relocation at District cost since in the public right of way. Based on preliminary information from the County, approximately 900 feet of 8 and 12-inch waterline may be impacted. The relocation work needs to be completed in front of the County's project next year as the District is potentially in conflict with the new bridge abutments. The District has pre-purchased all necessary pressure reducing valves, isolation valves, fittings, and enclosure for the relocation of both pressure reducing stations.

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 County's project.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 34,625
Spent to Date:	$ 14,625	2018 - 2022 Planned Expenditures:	$ 325,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 359,625
Project Balance	$ 15,375	Additional Funding Required	$ 309,625

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design	$ 25,000					$ 25,000
Construction	$ 300,000					$ 300,000
TOTAL	$ 325,000	$ -	$ -	$ -	$ -	$ 325,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$309,625
Total	100%		$309,625

Funding Comments: Relocation of existing facilities.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Construction Storage Facility

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Strahan **Board Approval:** 11/13/17

Project Description:

Build construction storage facility in EID upper yard to house material and equipment for increased security and protection from elements.

Basis for Priority:

Improve efficiency

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 230,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 230,000
Project Balance	$ -	Additional Funding Required	$ 230,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 30,000					$ 30,000
Construction		$ 200,000				$ 200,000
						$ -
TOTAL	$ 30,000	$ 200,000	$ -	$ -	$ -	$ 230,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$30,000
			$0
			$0
Total	100%		$30,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Ditch Water Rights SCADA Upgrades

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Strahan **Board Approval:** 11/13/17

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.

This project is a continuation of PN 11040

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:	$ 35,420
Spent to Date:	$ 35,420	2018 - 2022 Planned Expenditures:	$ 5,000
Cash flow through end of year:		Total Project Estimate:	$ 40,420
Project Balance	$ 4,580	Additional Funding Required	$ 420

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 5,000					$ 5,000
						$ -
TOTAL	$ 5,000	$ -	$ -	$ -	$ -	$ 5,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$420
			$0
			$0
Total	100%		$420

Funding Comments:

2018	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:** Wilson **Board Approval:** 11/13/17

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. This also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability 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:		2018 - 2022 Planned Expenditures:	$ 725,000
Cash flow through end of year:		Total Project Estimate:	$ 725,000
Project Balance	$ -	Additional Funding Required	$ 725,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Plant Assessment/Facility Master Plan	$ 325,000					$ 325,000
Facility Improvements		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 400,000
TOTAL	$ 325,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 725,000

Funding Sources	Percentage	2018 Amount
Water Rates	100%	$325,000
		$0
		$0
Total	100%	$325,000

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

2018	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:** 11/13/17

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	2018 - 2022 Planned Expenditures:	$ 2,280,000
Cash flow through end of year:	$ 30,017	Total Project Estimate:	$ 2,366,402
Project Balance	$ 48,531	Additional Funding Required	$ 2,231,469

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
MHPRS PN17024	$150,000	$150,000				$ 300,000
EDM1 PRS5 PN17016	$10,000					$ 10,000
GVPRS2 PN17014	$40,000					$ 40,000
LVPRS1 PN17015	$40,000					$ 40,000
EDM2 PRS6 PN16002	$70,000					$ 70,000
POM PRS #4 PN 17038	$25,000					$ 25,000
DSM PRS22 Control		$60,000				$ 60,000
Francisco PRS1		$60,000				$ 60,000
EDH PRS3		$50,000				$ 50,000
EDM1 PRS13 RES 6			$60,000	$550,000		$ 610,000
RES2-6 Inlet From MH			$50,000		$650,000	$ 700,000
Greenstone Tank PRS			$75,000			$ 75,000
Arrowbee PRS1					$65,000	$ 65,000
EDM2 PRS5					$100,000	$ 100,000
PVS PRS1					$75,000	$ 75,000
HEP PRS1						$ -
TOTAL	$ 335,000	$ 320,000	$ 185,000	$ 550,000	$ 890,000	$ 2,280,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$286,469
Total	100%		$286,469

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

2018 **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:** Wilson **Board Approval:** 11/13/17

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:	**$ 50,000**	**Expenditures through end of year:**	**$ 25,685**
Spent to Date:	**$ 5,685**	**2018 - 2022 Planned Expenditures:**	**$ 1,250,000**
Cash flow through end of year:	**$ 20,000**	**Total Project Estimate:**	**$ 1,275,685**
Project Balance	**$ 24,315**	**Additional Funding Required**	**$ 1,225,685**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Design	**$ 50,000**			**$ 75,000**	**$ 75,000**	**$ 200,000**
Crestview PN17011			**$ 200,000**			**$ 200,000**
Strawberry Raw Water/Treatment	**$ 250,000**	**$ 100,000**				**$ 350,000**
Ridgeview					**$ 250,000**	**$ 250,000**
Oak Ridge					**$ 250,000**	**$ 250,000**
Monte Vista						**$ -**
Quartz						**$ -**
Swansboro						**$ -**
Upper Rancho Del Sol						**$ -**
TOTAL	**$ 300,000**	**$ 100,000**	**$ 200,000**	**$ 75,000**	**$ 575,000**	**$ 1,250,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	100%		$275,685
			$0
Total	**100%**		**$275,685**

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

2018	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:** Wilson **Board Approval:** 11/13/17

Project Description:

This program consists of targeted process, control and facility improvements at the Reservoir 1 Water Treatment Plant. This also includes any improvements to the Strawberry Water Treatment Plant facility as determined by life cycled assets or regulatory requirements. 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 also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability 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:	$ 15,000	Expenditures through end of year:	$ 12,520
Spent to Date:	$ 12,520	2018 - 2022 Planned Expenditures:	$ 905,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 917,520
Project Balance	$ 2,480	Additional Funding Required	$ 902,520

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Plant Assessment/Facility Master Plan	$ 325,000					$ 325,000
Backwash Pump Station PN15035		$ 180,000				$ 180,000
Facility Improvements		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 400,000
TOTAL	$ 325,000	$ 280,000	$ 100,000	$ 100,000	$ 100,000	$ 905,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$322,520
			$0
			$0
Total	100%		$322,520

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

2018	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:** Wilson **Board Approval:** 11/13/17

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. This also includes any improvements to the Outingdale Water Treatment Plant facility as determined by life cycled assets or regulatory requirements. 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 also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant.

Basis for Priority:

Replacement and improvements to inefficient processes, obsolete controls and substandard facilities will support regulatory compliance, improvement service reliability 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:	$ 459,600	Expenditures through end of year:	$ 349,600
Spent to Date:	$ 144,458	2018 - 2022 Planned Expenditures:	$ 1,025,000
Cash flow through end of year:	$ 205,142	Total Project Estimate:	$ 1,374,600
Project Balance	$ 110,000	Additional Funding Required	$ 915,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Plant Assessment/Facility Master Plan		$ 325,000				$ 325,000
Access Road Restoration			$ 300,000			$ 300,000
Facility Improvements	$ 100,000	$ 100,000		$ 100,000	$ 100,000	$ 400,000
TOTAL	$ 100,000	$ 425,000	$ 300,000	$ 100,000	$ 100,000	$ 1,025,000

Funding Sources	Percentage	2018 Amount
Water Rates	100%	$0
		$0
		$0
Total	100%	$0

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Storage Replacement & Rehabilitation Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 11/13/17

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:	$ 1,527,555	Expenditures through end of year:	$ 759,498
Spent to Date:	$ 243,812	2018 - 2022 Planned Expenditures:	$ 6,000,000
Cash flow through end of year:	$ 515,686	Total Project Estimate:	$ 6,759,498
Project Balance	$ 768,057	Additional Funding Required	$ 5,231,943

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design		$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000
Lower Outingdale PN13015	$ 1,200,000					$ 1,200,000
Reservoir 3 PN14003	$ 800,000					$ 800,000
Swansboro PN17012	$ 350,000					$ 350,000
Reservoir 1 Cover And CT			$ 500,000			$ 500,000
Greenstone (Abandonment)			$ 150,000			$ 150,000
Reservoir 6				$ 2,500,000		$ 2,500,000
Ridgeview						$ -
Dolomite						$ -
TOTAL	$ 2,350,000	$ 200,000	$ 750,000	$ 2,600,000	$ 100,000	$ 6,000,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$1,581,943
Total	100%		$1,581,943

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.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Waterline Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 11/13/17

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:	$ 3,833,470	Expenditures through end of year:	$ 2,285,574
Spent to Date:	$ 855,378	2018 - 2022 Planned Expenditures:	$ 2,740,000
Cash flow through end of year:	$ 1,430,196	Total Project Estimate:	$ 5,025,574
Project Balance	$ 1,547,896	Additional Funding Required	$ 1,192,104

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design	$ 50,000	$ 100,000	$ 50,000	$ 50,000	$ 50,000	$ 300,000
Polaris Street PN15029	$ 250,000					$ 250,000
Gilmore Road PN15030	$ 400,000					$ 400,000
Forest Road PN17031	$ 140,000					$ 140,000
Union Ridge PN17032		$ 200,000				$ 200,000
Salmon Falls PN15031						$ -
Construction (Various)		$ 250,000	$ 500,000	$ 350,000	$ 350,000	$ 1,450,000
TOTAL	$ 840,000	$ 550,000	$ 550,000	$ 400,000	$ 400,000	$ 2,740,000

Funding Sources	Percentage	2018	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.

Wastewater Projects

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 14038

Project Name: EDHWWTP WAS DAFT

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

Project Description:

The waste-activated-sludge diffused-air-floatation-thickener (WAS DAFT) located at the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) has reached the end of its useful life. The WAS DAFT is utilized as a sludge thickener before sludge is pumped to the anaerobic digester.

HydroScience Engineers, Inc. was contracted in mid-2017 to develop plans and specifications to replace the existing WAS DAFT gear box and back pressure valve assembly. It is intended that this plan set will be bid in late 2017 and constructed in 2018.

Basis for Priority:

Maintain existing assets

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 50,000
Spent to Date:	$ 5,200	2018 - 2022 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 44,800	Total Project Estimate:	$ 150,000
Project Balance	$ (0)	Additional Funding Required	$ 100,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 100,000					$ 100,000
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	65%		$65,000
Wastewater FCCs	35%		$35,000
			$0
Total	100%		$100,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 15036

Project Name: Silva Valley/El Dorado Hills

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eden-Bishop **Board Approval:** 11/13/17

Project Description:

The 2013 Wastewater Facility Master Plan (WWMP) identified 2,100 feet of the 18"/21" sewerline along Silva Valley Road and 4,500 feet of 18" sewerline between Silva Valley Rd and the EDH Wastewater Treatment Plant as needing to be replaced by 2018. In order to further refine the extent and timing of improvements required, flow monitoring and survey work to determine manhole invert and ground elevations was completed under Project 14001 and 14002 in 2014. Flow monitoring and survey data has been incorporated into the District collection system model to determine remaining pipeline capacity. The current capacity analysis indicates the peak wet weather flow rate in 12,000 feet of pipeline exceeds design capacity and of that 4,700 feet is in a surcharged condition, i.e. water backing up into manholes. Additional wet weather flow data has been collected to calibrate the model further. Overall project cost is estimated to be upwards of $6 M. Preparation of a Basis of Design Report (BODR) will begin in 2018 that will further develop the project considering wet weather flow data. The BODR will address project phasing, and provide more refined project cost estimates by phase. Because project development is conceptual at this time, construction expenditures are not shown within this CIP planning horizon but are expected to be in the range of $6 M. The 2018 expenditures are for a BODR only.

Basis for Priority:

The collection system model identified these gravity sewerlines as having capacity limitations. If the capacity limitations are not corrected, sanitary sewer overflows could occur and future connections to the collection system will be limited.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 14,820
Spent to Date:	$ 9,820	2018 - 2022 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 114,820
Project Balance	$ 35,180	Additional Funding Required	$ 64,820

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design/Env/CM	$ 100,000					$ 100,000
Construction						$ -
						$ -
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2018 Amount
Wastewater FCCs	66%	$42,781
Wastewater Rates	34%	$22,039
		$0
Total	100%	$64,820

Funding Comments: The project corrects an existing capacity limitation and provides capacity for new wastewater customers, therefore is funded with a combination of wastewater rates and FCCs.

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16007

Project Name: Waterford 7 Lift Station Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Money **Board Approval:** 11/13/17

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.

The project is under construction and is expected to be complete mid December 2017 to Mid January 2018. New pumps and controls are required, along with associated piping, flow meters and odor control system. Based on condition assessments, the existing fiberglass wet well will be rehabilitated and reused and a new bypass manhole will be constructed on site. A new roof will be installed and the building trim painted, the existing building will be reused to house the electrical controls. The site will be repaved to provide a more accessible working surface for district crews.

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:	$ 1,261,282	Expenditures through end of year:	$ 975,707
Spent to Date:	$ 175,707	2018 - 2022 Planned Expenditures:	$ 282,380
Cash flow through end of year:	$ 800,000	Total Project Estimate:	$ 1,258,087
Project Balance	$ 285,575	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design/CM	$ 20,000					$ 20,000
Construction	$ 262,380					$ 262,380
						$ -
TOTAL	$ 282,380	$ -	$ -	$ -	$ -	$ 282,380

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments: No expansion, just serving existing customers

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16008

Project Name: South Pointe Lift Station Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

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's 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. A new bypass manhole is planned next to the existing wet well to increase operational flexibility. 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 encroachment agreement for the lift station from the County. The design is currently underway and staff anticipates will be ready to bid by late 2018. Construction is scheduled for 2019/2020.

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:	$ 155,537
Spent to Date:	$ 129,342	2018 - 2022 Planned Expenditures:	$ 1,280,000
Cash flow through end of year:	$ 26,195	Total Project Estimate:	$ 1,435,537
Project Balance	$ (0)	Additional Funding Required	$ 1,280,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design/CM/Inspection		$ 180,000				$ 180,000
Construction		$ 500,000	$ 600,000			$ 1,100,000
						$ -
TOTAL	$ -	$ 680,000	$ 600,000	$ -	$ -	$ 1,280,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	100%		$0

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16017

Project Name: DOT Construction Projects - Wastewater

Project Category: State/County Road Projects

Priority: 1 **PM:** Wilson **Board Approval:** 11/13/17

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. The agreement is valid for five years.

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:	$ 18,979
Spent to Date:	$ 18,979	2018 - 2022 Planned Expenditures:	$ 125,000
Cash flow through end of year:		Total Project Estimate:	$ 143,979
Project Balance	$ 30,749	Additional Funding Required	$ 94,251

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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.

2018 CAPITAL IMPROVEMENT PLAN Program: Wastewater

Project Number: 16025

Project Name: Town Center Force Main Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

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 remaining 12,885-feet 8-inch AC force main be replaced.

The remaining pipeline recommended for replacement has been divided into three sections. The first phase was bid in 2017 and construction is expected to be complete in early 2018. The second and third phases are expected to be constructed in years 2020 and 2023 respectively. More planning is needed to determine if the project will be deferred until the next bond issuance or phased.

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:	**$ 1,763,564**	**Expenditures through end of year:**	**$ 1,227,142**
Spent to Date:	**$ 177,142**	**2018 - 2022 Planned Expenditures:**	**$ 1,915,000**
Cash flow through end of year:	**$ 1,050,000**	**Total Project Estimate:**	**$ 3,142,142**
Project Balance	**$ 536,422**	**Additional Funding Required**	**$ 1,378,578**

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design/CM	$ 15,000		$ 200,000			$ 215,000
Construction	$ 250,000		$ 1,450,000			$ 1,700,000
						$ -
TOTAL	$ 265,000	$ -	$ 1,650,000	$ -	$ -	$ 1,915,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	**100%**		**$0**

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16026

Project Name: Wastewater Generator Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

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:	$ 28,654
Spent to Date:	$ 28,654	2018 - 2022 Planned Expenditures:	$ 200,000
Cash flow through end of year:		Total Project Estimate:	$ 228,654
Project Balance	$ 21,346	Additional Funding Required	$ 178,654

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction		$100,000		$100,000		$ 200,000
						$ -
TOTAL	$ -	$ 100,000	$ -	$ 100,000	$ -	$ 200,000

Funding Sources	Percentage	2018 Amount
Wastewater Rates	100%	$0
		$0
		$0
Total	100%	$0

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

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Wastewater**

Project Number: 16030

Project Name: Solar Assessment and Design

Project Category: Regulatory Requirements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

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.

At the September 11, 2017 Board meeting, the Board approved staff to move forward with a Basis of Design Report (BODR) to identify any available tariffs and/or grants available to the District, develop a system advisory model (SAM) to facilitate the evaluation for renewable energy facilities proposed for the District including solar and onsite battery storage, evaluate the costs of interconnection fees with PG&E at each proposed site, and refine project cost estimates based on 30% design level plans and specifications.

Following completion of the BODR staff will return to the board with recommendations for additional renewable energy facilities and will request additional funding to complete the design of these facilities. Construction costs will be heavily dependent on the recommendations of the BODR and if the recommended facilities are owned and financed by the District or by a third party. Therefore, construction cost are not shown at this time.

Basis for Priority:

Provide increased revenues and/or reduced costs.

Project Financial Summary:			
Funded to Date:	**$ 149,518**	**Expenditures through end of year:**	**$ 112,805**
Spent to Date:	**$ 33,191**	**2018 - 2022 Planned Expenditures:**	**$ 170,000**
Cash flow through end of year:	**$ 79,614**	**Total Project Estimate:**	**$ 282,805**
Project Balance	**$ 36,713**	**Additional Funding Required**	**$ 133,287**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning	**$ 20,000**					**$ 20,000**
Design	**$ 150,000**					**$ 150,000**
Construction		*	*	*	*	**$ -**
						$ -
TOTAL	**$ 170,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 170,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	50%		$66,644
Water FCCs	50%		$66,644
			$0
Total	**100%**		**$133,287**

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16040

Project Name: Business Park 3 Lift Station Replacement

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Brink **Board Approval:** 11/13/17

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) requires a new lift station. Based on the planned location of that lift station and local topography, the Business Park 3 lift station can be abandoned and the associated sewer flows diverted to the new the new Carson Creek Unit 2 lift station. On January 23, 2017 the Board approved a cost sharing agreement for the new lift station, similar to what was done for the successful Carson Creek 1 Lift Station that was recently completed. The District will share design and construction costs based on needed capacity.

On August 14, 2017, the Board approved the award for a construction contract for the new Carson Creek 2 lift station. In accordance with the Agreement, Lennar as deposited $2,540,154 into an escrow account to fund their portion of the project costs. Construction started in September 2017 and is scheduled to commence through 2018.

Basis for Priority:

The Board approved the construction contract on August 14, 2017. Per the Cost Sharing Agreement with Lennar, the District is to construct the lift station that will serve their development.

Project Financial Summary:			
Funded to Date:	$ 3,181,964	Expenditures through end of year:	$ 351,738
Spent to Date:	$ 151,738	2018 - 2022 Planned Expenditures:	$ 570,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 921,738
Project Balance	$ 2,830,226	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 2,900,000	$ 120,000				$ 3,020,000
Developer Funding	$ (2,400,000)	$ (50,000)				$ (2,450,000)
						$ -
TOTAL	$ 500,000	$ 70,000	$ -	$ -	$ -	$ 570,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$0
			$0
Total	100%		$0

Funding Comments: Funding includes $2,540,154 that was deposited by Lennar in an Escrow Account. Some of that funding covers reimbursement for charges incurred in 2017. The balance to be funded by the District.

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Wastewater**

Project Number: **17020**

Project Name: **Wastewater Collection System Pipeline Replacement**

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

Priority: **1** **PM:** **Money** **Board Approval:** **11/13/17**

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 pipeline replacement with the current funding capabilities. A design contract for the replacement projects was awarded in August, 2017 and is expected to be completein early 2018. Construction contracts for pipeline replacements will be awarded as annual budgets allow. The pipe segments curerently under design and prioritized for repair or replacement 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 intrusions vitreous clay
4. Brookline Drive EDH 281' 10 root intrusions 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:	**$ 168,440**	**Expenditures through end of year:**	**$ 95,148**
Spent to Date:	**$ 5,148**	**2018 - 2022 Planned Expenditures:**	**$ 2,525,000**
Cash flow through end of year:	**$ 90,000**	**Total Project Estimate:**	**$ 2,620,148**
Project Balance	**$ 73,292**	**Additional Funding Required**	**$ 2,451,708**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design	**$ 25,000**					**$ 25,000**
Construction	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 2,500,000**
TOTAL	**$ 525,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 2,525,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Wastewater Rates	100%		$451,708
Total	**100%**		**$451,708**

Funding Comments:

2018 CAPITAL IMPROVEMENT PLAN Program: Wastewater

Project Number: 17021
Project Name: Fall Protection at Lift Stations
Project Category: Regulatory Requirements

Priority: 3 **PM:** Money **Board Approval:** 11/13/17

Project Description:

OSHA recommends the use of engineered 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 proposed systems will be designed by a structural engineer and will consists of permanent barricading around the wetwells to reduce fall hazards to staff while preforming cleaning and routine maintenance. Thirty-one lift stations have been identified for improving the fall protection. The ten most critical lift stations that would benefit 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:	$ 50,000	**Expenditures through end of year:**	$ 50,000
Spent to Date:	$ 2,274	**2018 - 2022 Planned Expenditures:**	$ 165,000
Cash flow through end of year:	$ 47,726	**Total Project Estimate:**	$ 215,000
Project Balance	$ (0)	**Additional Funding Required**	$ 165,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Design/CM	$ 15,000					$ 15,000
Construction	$ 50,000	$ 100,000				$ 150,000
						$ -
TOTAL	$ 65,000	$ 100,000	$ -	$ -	$ -	$ 165,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$65,000
Total	**100%**		**$65,000**

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17023

Project Name: Rancho Ponderosa LS Relocation/Abandonment

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Money **Board Approval:** 11/13/17

Project Description:

The existing Rancho Ponderosa Wastewater Lift Station was constructed without securing a viable property easement to access and service the lift station. Additionally, the existing site is constrained and difficult to access with maintenance equipment. The lift station currently serves 16 EDU's. Access to the site currently requires the use of an adjacent property owner's gated driveway that services their personal residence.

Recently the District was required to negotiate continued access to the site which requires that the District pay the property owner on a monthly basis for access and that the station be relocated prior to December 31, 2018.

This project will evaluate relocating the lift station or bypassing the station with a gravity sewerline. Engineered plans and specifications and a construction contract will then be developed for the selected alternative.

Basis for Priority:

Project is required by law, regulation, contract, agreement, or license.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 1,972
Spent to Date:	$ 1,972	2018 - 2022 Planned Expenditures:	$ 450,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 451,972
Project Balance	$ 48,028	Additional Funding Required	$ 401,972

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 80,000					$ 80,000
Construction		$ 370,000				$ 370,000
						$ -
TOTAL	$ 80,000	$ 370,000	$ -	$ -	$ -	$ 450,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$31,972
			$0
			$0
Total	100%		$31,972

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17033

Project Name: DCWWTP Process Control Design

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

Project Description:

This project's scope is a complete evaluation of Deer Creek's SCADA system. The intention is to identify the areas that require improvements and create a design to correct these deficiencies. This automation design will focus on reliability, regulatory compliance, operating efficiency and power consumption reporting.

Basis for Priority:

Deer Creek's automation system consists of end of life control systems that suffers from incomplete control solutions and reliability issues. Deer Creek's Operational staff has identified multiple automation issues that impact the level of labor required to operate the system and stay in compliance. Additionally, there are no current tools which provide Operations feedback on how plant tuning parameters can affect one of the District's biggest costs of operation, power.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 250,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 250,000
Project Balance	$ 50,000	Additional Funding Required	$ 200,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 75,000					$ 75,000
Design		$ 175,000				$ 175,000
Construction						$ -
						$ -
TOTAL	$ 75,000	$ 175,000	$ -	$ -	$ -	$ 250,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$25,000
			$0
			$0
Total	100%		$25,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17034

Project Name: Wastewater Collections Facility Relocation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wells **Board Approval:** 11/13/17

Project Description:

The corporation yard used to support the sewer collection crew will be moved from Bass Lake to El Dorado Hills Wastewater Treatment Plant if all permits and approvals are obtained. The District contracted all lab services at a cost savings of approximately $500,000 annually leaving a building available on the EDH WWTP site. This building will be modified for crew use. Vehicle parking for the collections fleet, bins for materials storage, and a building for construction storage will be part of the design at the plant.

Basis for Priority:

The property is under contract at this time.

Project Financial Summary:			
Funded to Date:	$ 65,000	Expenditures through end of year:	$ 90,000
Spent to Date:	$ 15,000	2018 - 2022 Planned Expenditures:	$ -
Cash flow through end of year:	$ 75,000	Total Project Estimate:	$ 90,000
Project Balance	$ (25,000)	Additional Funding Required	$ 25,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 20,000					$ 20,000
Design	$ 80,000					$ 80,000
Construction	$ 825,000					$ 825,000
Proceeds from Bass Lake Sale	$ (925,000)					$ (925,000)
TOTAL	$ -	$ -	$ -	$ -	$ -	$ -

Funding Sources	Percentage	2018	Amount
Wastewater rates	100%		$25,000
			$0
			$0
Total	100%		$25,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED
Project Name: 2018 Wastewater Equipment Replacement Program
Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

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. This program differs from ongoing maintenance programs in that the equipment, facilities, and labor attributed to these assets constitute a replacement of a capitalized asset. Assets to be replaced or upgraded under this program include but are not limited to pumps, valves, generators, electrical and instrumentation systems, treatment plant equipment, and collection system assets that with replacement will extend the life of the associated system or facility. Items to be replaced each year will be prioritized using ongoing condition assessments and the asset management policies of the district.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 13,687
Spent to Date:	$ 13,687	2018 - 2022 Planned Expenditures:	$ 1,000,000
Cash flow through end of year:		Total Project Estimate:	$ 1,013,687
Project Balance	$ 36,313	Additional Funding Required	$ 963,687

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 1,000,000
						$ -
TOTAL	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 1,000,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	70%		$114,581
Wastewater FCCs	30%		$49,106
Total	100%		$163,687

Funding Comments: Funding split based on available plant capacity

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: 2018 Wastewater Facility Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

Project Description:

This is a program to replace equipment and facilities used in the wastewater system that have failed or reached end of useful life. Funding will be used for wastewater facility rehabilitation such as mechanical or building improvements that will extend the life of an asset. Examples include roof and fencing replacements at various wastewater lift stations and general building improvements or modifications. Odor control improvements at EDHWWTP will also be evaluated due to continuing odor complaints.

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:	$ -	2018 - 2022 Planned Expenditures:	$ 1,125,000
Cash flow through end of year:		Total Project Estimate:	$ 1,125,000
Project Balance	$ -	Additional Funding Required	$ 1,125,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 625,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 1,125,000
						$ -
TOTAL	$ 625,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 1,125,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$625,000
Total	100%		$625,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Business Park 1 Odor Control

Project Category: Regulatory Requirements

Priority:	2	PM:	Money	Board Approval:	11/13/17

Project Description:

The District has received odor complaints from near-by residences and businesses that surround the EDHWWTP. The Business Park 1 Lift Station in located adjacent to Carson Creek and 0.4 miles southwest of the EDHWWTP. Maintenance staff has reported increased occurrences of hydrogen sulfide (H2S) gas at the lift station and now believe that this may be contributing to odor complaints in the area.

This project would evaluate the source of the H2S gas and evaluate process modification including the addition of odor treatment equipment.

Basis for Priority:

Maintain and enhance existing assets

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 120,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 120,000
Project Balance	$ -	Additional Funding Required	$ 120,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 20,000					$ 20,000
Construction	$ 100,000					$ 100,000
						$ -
TOTAL	$ 120,000	$ -	$ -	$ -	$ -	$ 120,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$120,000
			$0
			$0
Total	100%		$120,000

Funding Comments:

2018 **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:** **11/13/17**

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:**	**$ -**
Spent to Date:	**$ -**	**2018 - 2022 Planned Expenditures:**	**$ 1,200,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 1,200,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 1,200,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design	**$ 100,000**					**$ 100,000**
Construction	**$ 200,000**	**$ 900,000**				**$ 1,100,000**
						$ -
TOTAL	**$ 300,000**	**$ 900,000**	**$ -**	**$ -**	**$ -**	**$ 1,200,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Wastewater Rates	100%		$300,000
			$0
			$0
Total	**100%**		**$300,000**

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: EDHWWTP Maintenance Storage

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wells **Board Approval:** 11/13/17

Project Description:

This project is a companion to PN 17034 - Wastewater Collections Facility Relocation. This new building will be constructed on the existing wastewater plant property, and allow for water and collections staff to share a common facility from which they can provide a wide range of services, including emergency response, as well as routine and preventative maintenance on plant and District-wide assets. This CIP would also cover funding for site access improvements, installation of a water line and fire hydrant, and construction of 4 large material bins that would contain gravel, aggregate base, sand and cut back.

Basis for Priority:

Project enhances reliability of existing assets and resources.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 500,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 500,000
Project Balance	$ -	Additional Funding Required	$ 500,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 500,000					$ 500,000
						$ -
TOTAL	$ 500,000	$ -	$ -	$ -	$ -	$ 500,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	50%		$250,000
Water Rates	50%		$250,000
			$0
Total	100%		$500,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Ridgeview 10 Elimination

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Money **Board Approval:** 11/13/17

Project Description:

In August 2017, the Promontory Open Space Multi-Use Trail Ph.1 project was completed by a private developer. Part of the scope of that project was the construction of a gravity sewer between two adjacent sewer sheds owned and operated by the District. This gravity connection eliminated the need for the Ridgeview 10 Sewer Lift Station which is now bypassed with gravity sewer flow.

This project will provide abandonment services for the Ridgeview 10 Lift Station including the removal of the existing building, wet well, pumps, and appurtenances, abandonment of existing utilities servicing the site, resolution of any environmental concerns, and final sale or disposal of the parcel.

Basis for Priority:

Improve efficiency

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 100,000
Project Balance	$ -	Additional Funding Required	$ 100,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction		$ 100,000				$ 100,000
						$ -
TOTAL	$ -	$ 100,000	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2018 Amount
Wastewater Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Strolling Hills Pipeline Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 11/13/17

Project Description:

The Motherlode Force Main transitions to gravity flow before it enters Strolling Hills Road and continues downhill toward the Deer Creek Wastewater Treatment Plant. Several services are connected directly to the 12-inch PVC pipe that conveys flows along this segment. During large storm events and elevated flows the District has received complaints regarding off gassing of the 12-inch line through plumbing fixtures within private residences likely due to air entrained within the system. This project will attempt to mitigate air entrained within the system by either adding additional hydraulic capacity or adding air jumpers from adjacent manholes.

Basis for Priority:

Maintain and enhance existing assets

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction	$ 100,000					$ 100,000
						$ -
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$150,000
			$0
			$0
Total	100%		$150,000

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater Communication Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

Project Description:

This project will first look at determining the communication feasibility at each wastewater pump station and then determine the priority of replacing the obsolete PLC/RTUs and add the required monitoring equipment (instrumentation) at the lift stations.

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.

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:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 250,000					$ 250,000
Design		$ 250,000				$ 250,000
Construction			$ 500,000	$ 500,000		$ 1,000,000
						$ -
TOTAL	$ 250,000	$ 250,000	$ 500,000	$ 500,000	$ -	$ 1,500,000

Funding Sources	Percentage	2018	Amount
Wastewater Rates	100%		$250,000
			$0
			$0
Total	100%		$250,000

Funding Comments:

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Wastewater**

Project Number: **PLANNED**

Project Name: **Wastewater Lift Station Upgrade Program**

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

Priority: **2** **PM:** **Money** **Board Approval:** **11/13/17**

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, Thunderhead Lift Station, and Summit 3 Lift Station. This program will continue to evaluate all facilities for future work.

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 in 2019 with construction costs estimated at $600,000 in 2020. 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.

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 2021 with construction in 2022/2023. Design is budgeted for $300,000 and construction is estimated at $3,200,000.

The Summit 3 Lift Station will continue to be evaluated as budget allows.

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**	**2018 - 2022 Planned Expenditures:**	**$ 2,480,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 2,802,970**
Project Balance	**$ 22,621**	**Additional Funding Required**	**$ 2,457,379**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design		**$ 80,000**		**$ 300,000**		**$ 380,000**
Construction			**$ 600,000**		**$ 1,500,000**	**$ 2,100,000**
TOTAL	**$ -**	**$ 80,000**	**$ 600,000**	**$ 300,000**	**$ 1,500,000**	**$ 2,480,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Wastewater Rates	65%		$0
Wastewater FCC	35%		$0
Total	**100%**		**$0**

Funding Comments: funding split based on plant capacity

Recycled Water Projects

2018	CAPITAL IMPROVEMENT PLAN	Program:	Recycled Water

Project Number: 17030

Project Name: DC Discharge Management

Project Category: Regulatory Requirements

Priority: 3 **PM:** Money **Board Approval:** 11/13/17

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:	$ 15,000	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 115,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 115,000
Project Balance	$ 15,000	Additional Funding Required	$ 100,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018 Amount
Recycled Water Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2018 **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:** 11/13/17

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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Design						$ -
Construction						$ -
Programming	$ 45,000					$ 45,000
						$ -
TOTAL	$ 45,000	$ -	$ -	$ -	$ -	$ 45,000

Funding Sources	Percentage	2018 Amount
Recycled Water Rates	100%	$45,000
		$0
		$0
Total	100%	$45,000

Funding Comments:

Hydroelectric Projects

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 14024

Project Name: Flume 44 Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

Project Description:

Flume 44 is 476 feet in length and last replaced in 1948. The wooden flume 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 includes installing box culverts on 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 degraded elevated timber flume with a mechanically stabilized earth bench with a box culvert 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:	$ 884,072	Expenditures through end of year:	$ 1,001,239
Spent to Date:	$ 701,239	2018 - 2022 Planned Expenditures:	$ 8,900,000
Cash flow through end of year:	$ 300,000	Total Project Estimate:	$ 9,901,239
Project Balance	$ (117,167)	Additional Funding Required	$ 9,017,167

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction Costs	$4,650,000	$3,800,000				$ 8,450,000
Warranty/FERC QCIP	$ 250,000	$125,000	$75,000			$ 450,000
TOTAL	$ 4,900,000	$ 3,925,000	$ 75,000	$ -	$ -	$ 8,900,000

Funding Sources	Percentage	2018	Amount
Water FCCs	53%		$2,659,098
Water Rates	47%		$2,358,068
			$0
Total	100%		$5,017,167

Funding Comments:

2018 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:** 11/13/17

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:
2017- Complete design of Diversion and (15) monitoring sites
2018 – Construction for the monitoring sites and Diversion. Design for the remaining spillway sites.
2019 - Construction for spill ways sites and any monitoring sites that were not in 2018's budget
2020 - Construction for spill ways sites
2021 – Powerhouse design
2022 – Power house construction

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:	**$ 150,775**	**Expenditures through end of year:**	**$ 150,663**
Spent to Date:	**$ 68,663**	**2018 - 2022 Planned Expenditures:**	**$ 1,473,000**
Cash flow through end of year:	**$ 82,000**	**Total Project Estimate:**	**$ 1,623,663**
Project Balance	**$ 112**	**Additional Funding Required**	**$ 1,472,888**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Spillway Design	**$ 50,000**					**$ 50,000**
Construction Monitoring	**$ 298,000**					**$ 298,000**
Construction Diversion	**$ 90,000**					**$ 90,000**
Construction Spillways		**$ 300,000**	**$ 300,000**			**$ 600,000**
PH Design				**$ 85,000**		**$ 85,000**
PH Construction					**$ 350,000**	**$ 350,000**
TOTAL	**$ 438,000**	**$ 300,000**	**$ 300,000**	**$ 85,000**	**$ 350,000**	**$ 1,473,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	100%		$437,888
			$0
			$0
Total	**100%**		**$437,888**

Funding Comments:

2018	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:** 11/13/17

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 box culvert 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 construction and maintenance access. Construction is estimated to occur in 2020 . 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 environmentally 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:	$ 696,539
Spent to Date:	$ 496,539	2018 - 2022 Planned Expenditures:	$ 7,200,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 7,896,539
Project Balance	$ (137,487)	Additional Funding Required	$ 7,337,487

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design	$ 100,000					$ 100,000
Construction				$ 6,800,000	$ 100,000	$ 6,900,000
Warranty/FERC QCIP				$ 100,000	$ 100,000	$ 200,000
TOTAL	$ 100,000	$ -	$ -	$ 6,900,000	$ 200,000	$ 7,200,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$111,619
Water FCCs	53%	$125,868
		$0
Total	100%	$237,487

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 16044

Project Name: Pacific Tunnel Portal Rehab

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

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 tunnel 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 ultimate 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:	$ 50,000	Expenditures through end of year:	$ 29,943
Spent to Date:	$ 29,943	2018 - 2022 Planned Expenditures:	$ 2,017,500
Cash flow through end of year:		Total Project Estimate:	$ 2,047,443
Project Balance	$ 20,057	Additional Funding Required	$ 1,997,443

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 65,000					$ 65,000
Design		$ 160,000				$ 160,000
Construction			$ 1,667,500	$ 25,000		$ 1,692,500
FERC/QCIP			$ 75,000	$ 25,000		$ 100,000
TOTAL	$ 65,000	$ 160,000	$ 1,742,500	$ 50,000	$ -	$ 2,017,500

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$21,123
Water FCCs	53%	$23,820
		$0
Total	100%	$44,943

Funding Comments:

2018 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: 16046

Project Name: Powerhouse Roof

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kessler **Board Approval:** 11/13/17

Project Description:

The El Dorado Powerhouse roof has been maintained over the past 30 + years by applying an overlay membrane/coating onto previous ones. The roof is leaking and could benefit from drainage improvements. It is unknown if there is any structural damage until the roof covering is removed. The project is to assess the scope of roof repairs to the extent possible without compromising the roofing, to develop a work plan for replacing the roof cover, and to ultimately remove the existing layers of roof covering and replace with a new system. Investigation and development of plans for replacing the roof cover with contingencies for structural repairs if needed are planned for early 2018. The roof covering would also be replaced in 2018.

Basis for Priority:

Maintain existing assets.

Project Financial Summary:			
Funded to Date:	$ 50,000	**Expenditures through end of year:**	$ 3,993
Spent to Date:	$ 3,993	**2018 - 2022 Planned Expenditures:**	$ 225,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 228,993
Project Balance	$ 46,007	**Additional Funding Required**	$ 178,993

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 25,000					$ 25,000
Design						$ -
Construction	$ 100,000	$ 100,000				$ 200,000
						$ -
TOTAL	$ 125,000	$ 100,000	$ -	$ -	$ -	$ 225,000

Funding Sources	Percentage	2018 Amount
Water Rates	100%	$78,993
Water FCCs	0%	$0
		$0
Total	**100%**	**$78,993**

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17003

Project Name: HM / Canal Failure DS at Flume 10

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Noel **Board Approval:** 11/13/17

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure and damaged drainage above Flume 10. A debris slide (mud slide) flowed into the canal downstream of Flume 10 resulting in complete blockage of the canal. The canal breach eroded the canal bench which provides confinement for the canal liner and the liner broke resulting in a complete breach and loss of flow. The breach scoured a channel to the South Fork of the American River and initially destroyed approximately 60 feet of canal. Over the course of days, a total of 390 lineal feet of canal was distressed and over-stressed from undrained soil pressure and debris slide material rendering the system unusable. The failure is on a portion of canal and bench directly downstream from Flume 10 and is located south of Highway 50 near White Hall, CA.

Access to Flume 10 (new Bridge & Road) will include the construction of one canal crossing (bridge) using reinforced box culvert near Ditch Camp 1, excavation of 1,760 cubic yards of earth and rock to prepare a stable base for MSE, and 400 square feet of Tensar Sierrascape wall construction. 250 lineal feet of drainage and 60,000 square feet of all-weather fabric-reinforced aggregate base rock road surface will be constructed. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached the MSE wall facing. The permanent access is designed to achieve a required Factor of Safety of 1.5 for stability in the area integral to support the facility. Flume 10 failure repairs will include excavation of 5,000 cubic yards of earth and rock to prepare a stable base for MSE, and 1,200 square feet of Tensar Sierrascape wall construction. 950 lineal feet of drainage and 2,300 square feet of all-weather fabric-reinforced aggregate base rock road surface will be constructed. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached the MSE wall facing. In June 2017, construction access was prohibited by USFS due failure of the NE wing wall and two cross beams of the SAD Bridge, which delayed the project approximately four months. Currently the project is approximately 70% complete and with the onset of winter the project is anticipated to be completed by late June 2018.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:			
Funded to Date:	$ 9,355,343	Expenditures through end of year:	$ 8,712,072
Spent to Date:	$ 4,712,072	2018 - 2022 Planned Expenditures:	$ 600,000
Cash flow through end of year:	$ 4,000,000	Total Project Estimate:	$ 9,312,072
Project Balance	$ 643,271	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 400,000					$ 400,000
Warranty/FERC QCIP	$ 200,000					$ 200,000
TOTAL	$ 600,000	$ -	$ -	$ -	$ -	$ 600,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$0
Water FCCs	53%	$0
		$0
Total	100%	$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17004

Project Name: HM at Flume 5

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Noel **Board Approval:** 11/13/17

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure above Flume 5. A soil and rock failure came to rest on the uphill side of Flume 5 over-stressing the wooden flume. The slope failure scoured the hillside and destabilized the supporting flume over a length of approximately 80 feet. Additionally, a tension crack appeared in the bench adjacent to the flume over a length of 250 feet that destabilized the flume foundations. These failures rendered the system unusable. Flume 5 is located south of Highway 50 near Kyburz, CA. The project was substantially complete in 2017; several punch list and warranty items remain to be completed in 2018.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:			
Funded to Date:	$ 3,044,560	Expenditures through end of year:	$ 313,174
Spent to Date:	$ 238,174	2018 - 2022 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ 75,000	Total Project Estimate:	$ 388,174
Project Balance	$ 2,731,386	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction						$ -
Warranty/FERC QCIP	$ 75,000					$ 75,000
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$0
Water FCCs	53%	$0
		$0
Total	100%	$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17008

Project Name: HM at Flume 9

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Noel **Board Approval:** 11/13/17

Project Description:

During the storm events of 2017, a significant amount of runoff resulted in soil and rock failure above Flume 9. The soil and rock failure is contained in an engineered rock fall system of cable-net mesh (cable-mesh drapery) and rock anchors that is now over-stressed. The failure is on a slope above a pre-cast concrete flume (Flume 9) operated by El Dorado Irrigation District (District). Flume 9 is located on property owned the District. The project site is located south of Highway 50 near White Hall, CA. The landslide threatens Flume 9 and operation of FERC Project 184.

Flume 9 slope failure repair will include scaling and rock fall system repair of 2,000 square feet of slope, excavation of 200 cubic yards of earth and rock to prepare a stable base for MSE, and 720 square feet of Ultrablock wall construction. 80 lineal feet of subdrain will be constructed at the back of the excavation to provide drainage for the engineered fill and geogrid. MSE would progress in 18" lifts with each lift including a heavy geotextile geogrid attached intermittently the Ultrablock wall. The permanent repair is designed to achieve a required Factor of Safety of 1.5 for stability in the area integral to support the facility. The project was substantially complete in 2017; several punch list and warranty items remain to be completed in 2018.

Basis for Priority:

The El Dorado Canal (Canal) is a linear water conveyance system that consists of several miles of canals, flumes, siphons, and tunnels and is part of FERC Project 184 that provides both hydroelectric power generation and approximately 1/3 of the Districts consumptive water supply. Damage to any part of the Canal may severely reduce or prevent the ability to convey water from the South Fork of the American River and several tributaries to Forebay Reservoir.

Project Financial Summary:			
Funded to Date:	$ 987,030	Expenditures through end of year:	$ 1,535,536
Spent to Date:	$ 35,536	2018 - 2022 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 1,500,000	Total Project Estimate:	$ 1,585,536
Project Balance	$ (548,506)	Additional Funding Required	$ 598,506

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction						$ -
Warranty/FERC QCIP	$ 50,000					$ 50,000
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$281,298
Water FCCs	53%	$317,208
		$0
Total	100%	$598,506

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17013H

Project Name: Forebay Dam Upgrades

Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 11/13/17

Project Description:

Construction is underway. The Board in its August 14, 2017 meeting, authorized funding of $25,155,336, award of a $19,147,500 construction contract to Shimmick, and other associated contracts and contingency. Staff expects FERC to issue full authorization to construct before spring 2018 when construction is scheduled to resume following a winter 2017/2018 shutdown. Construction is planned through December 15, 2019.

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:	$ 25,155,336	Expenditures through end of year:	$ 3,500,000
Spent to Date:	$ 94,574	2018 - 2022 Planned Expenditures:	$ 21,655,336
Cash flow through end of year:		Total Project Estimate:	$ 25,155,336
Project Balance	$ 25,060,762	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 13,000,000	$ 8,000,000	$ 655,336			$ 21,655,336
						$ -
TOTAL	$ 13,000,000	$ 8,000,000	$ 655,336	$ -	$ -	$ 21,655,336

Funding Sources	Percentage	2018 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17025

Project Name: Flume 45 Abutment Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

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 entire flume is scheduled to occur during the scheduled canal outage in the future. This project will only address the abutment section. 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:	$ 50,000	Expenditures through end of year:	$ 71
Spent to Date:	$ 71	2018 - 2022 Planned Expenditures:	$ 1,255,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,255,071
Project Balance	$ 49,929	Additional Funding Required	$ 1,205,071

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning			$ 45,000			$ 45,000
Geo/Design			$ 50,000	$ 100,000		$ 150,000
Construction					$ 1,000,000	$ 1,000,000
QCIP					$ 60,000	$ 60,000
TOTAL	$ -	$ -	$ 95,000	$ 100,000	$ 1,060,000	$ 1,255,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17026

Project Name: Flume 47C Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

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 interim 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 construction bids received for prior flume replacement projects. Construction cost estimates will be refined upon completion of the geotechnical assessment and design. Construction of this project is scheduled to be done by District crews.

Basis for Priority:

The flume will continue to deteriorate potentially causing flume failures that would result in significant impacts to environmentally 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:	$ 50,000	Expenditures through end of year:	$ 275
Spent to Date:	$ 275	2018 - 2022 Planned Expenditures:	$ 1,569,500
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,569,775
Project Balance	$ 49,725	Additional Funding Required	$ 1,519,775

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning		$ 40,000				$ 40,000
Design		$ 67,500				$ 67,500
Construction		$ 1,387,000				$ 1,387,000
Warranty/FERC QCIP			$ 75,000			$ 75,000
TOTAL	$ -	$ 1,494,500	$ 75,000	$ -	$ -	$ 1,569,500

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$0
Water FCCs	53%	$0
		$0
Total	100%	$0

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17027

Project Name: Spill 3 Cribwall

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

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. Funding shown is for preliminary design and studies to develop repair method and costs.

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:	$ 50,000	Expenditures through end of year:	$ 71
Spent to Date:	$ 71	2018 - 2022 Planned Expenditures:	$ 182,500
Cash flow through end of year:	$ -	Total Project Estimate:	$ 182,571
Project Balance	$ 49,929	Additional Funding Required	$ 132,571

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 76,500					$ 76,500
Design	$ 106,000					$ 106,000
Construction						$ -
Warranty-FERC QCIP						$ -
TOTAL	$ 182,500	$ -	$ -	$ -	$ -	$ 182,500

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$62,308
Water FCCs	53%	$70,263
		$0
Total	100%	$132,571

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17041

Project Name: Flume 30 Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 11/13/17

Project Description:

Flume 30 is approximately 350 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 additional 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 project will need to ensure that the trail to the diversion structure on Bull Creek is maintained, the Bull Creek diversion and weir need to be rebuilt, the rock wall abutment will need to be reconstructed and the flume converted to concrete. Due to the location of this flume, all materials and supplies will need to be brought in by helicopter. 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 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 environmentally 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:	$ -	**2018 - 2022 Planned Expenditures:**	$ 8,900,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 8,900,000
Project Balance	$ -	**Additional Funding Required**	$ 8,900,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning/Env	$ 100,000					$ 100,000
Geo/Design	$ 200,000	$ 350,000				$ 550,000
Construction			$ 8,250,000			$ 8,250,000
Warranty/QCIP						$ -
TOTAL	$ 300,000	$ 350,000	$ 8,250,000	$ -	$ -	$ 8,900,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		$141,000
Water FCCs	53%		$159,000
			$0
Total	**100%**		**$300,000**

Funding Comments:

2018	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:** 11/13/17

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	2018 - 2022 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					
	2018	2019	2020	2021	2022	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	2018	Amount
Water Rates	47%		$63,923
Water FCCs	53%		$72,083
			$0
Total	100%		$136,006

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Diversion Gaging Measurement and Reporting Requirements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Wilson **Board Approval:** 11/13/17

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 facilities 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 and 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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	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	$ 50,000	$ 75,000	$ 25,000	$ -	$ -	$ 150,000

Funding Sources	Percentage	2018 Amount
		$0
Water Rates	100%	$50,000
		$0
Total	**100%**	**$50,000**

Funding Comments:

2018	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:** 11/13/17

Project Description:

Flume 46A is an elevated 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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Study/Planning/Enviro			$ -		$ 85,000	$ 85,000
Geo/Design					$ 115,000	$ 115,000
Construction						$ -
FERC QCIP						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 200,000	$ 200,000

Funding Sources	Percentage	2018	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2018	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:** 11/13/17

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 2018 after further alternatives analysis. Construction planned 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:	$ -	2018 - 2022 Planned Expenditures:	$ 300,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 300,000
Project Balance	$ -	Additional Funding Required	$ 300,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning	$ 100,000					$ 100,000
Design		$ 200,000	*	*		$ 200,000
Construction					*	$ -
Warranty-FERC QCIP						$ -
TOTAL	$ 100,000	$ 200,000	$ -	$ -	$ -	$ 300,000

Funding Sources	Percentage	2018 Amount
Water Rates	47%	$47,000
Water FCCs	53%	$53,000
		$0
Total	100%	$100,000

Funding Comments:

2018	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:** 11/13/17

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.

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:	$ -	2018 - 2022 Planned Expenditures:	$ 500,000
Cash flow through end of year:		Total Project Estimate:	$ 500,000
Project Balance	$ -	Additional Funding Required	$ 500,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000
						$ -
TOTAL	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000

Funding Sources	Percentage	2018	Amount
Water Rates	100%		$100,000
Total	100%		$100,000

Funding Comments:

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Hydroelectric**

Project Number: **PLANNED**

Project Name: **Lake Aloha Dam Repairs**

Project Category: **Regulatory Requirements**

Priority: **1** **PM:** **Kessler** **Board Approval:** **11/13/17**

Project Description:

Necessary repairs for Lake Aloha Dams include the reinforcement of the outlet gate tower (as required by CA Division of Safety of Dams), sealing the upstream face of the Main and Auxiliary Dams, and repairing eroded areas at the base of several auxiliary dams on the reservoir side. The design for the outlet tower reinforcement has been modified to a simpler repair method resulting in savings in design and construction costs. Construction is planned for fall 2018.

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

Basis for Priority:

Non-compliance with FERC and DSOD dam safety regulations.

Project Financial Summary:			
Funded to Date:		**Expenditures through end of year:**	
Spent to Date:		**2018 - 2022 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**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning	**$ 10,000**					**$ 10,000**
Design	**$ 10,000**					**$ 10,000**
Construction	**$ 180,000**					**$ 180,000**
						$ -
TOTAL	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**

Funding Sources	**Percentage**	**2018 Amount**
Water FCCs	53%	$106,000
Water Rates	47%	$94,000
		$0
Total	**100%**	**$200,000**

Funding Comments:

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Hydroelectric**

Project Number: **PLANNED**

Project Name: **Penstock Stabilization and Repair**

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

Priority: **2** **PM:** **Kessler** **Board Approval:** **11/13/17**

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. The condition assessment continued into 2017 and identified the following needed improvements. The cost of these improvements are preliminary at this time.

1) Improving access to support conducting O&M and capital improvements safely
2) Relining the interior of the surge tank and the buried section between the penstock tunnel and surge tank at welded joints where the original lining was applied in the field
3) Performing drainage improvements to the high-pressure penstock section where a channel continues to erode including around some of the anchor blocks
4) Stabilizing the bench d/s of the penstock tunnel section where significant rockfall and landslide potential exists
5) Improving the anchoring of the surge tank to meet seismic loading; Work planned for 2018 and 2019 includes improving access, and developing plans and specifications and conducting environmental review/permitting for accomplishing items 1 - 5 above. The repair costs

Basis for Priority:

The project is to maintain penstock safety and service reliability. The ability for the District to receive $5 million - $10 million annually in power generation revenues depends on the availability of the penstock. The penstock is one of the highest pressure and oldest in the United States.

Project Financial Summary:			
Funded to Date:		**Expenditures through end of year:**	**$ -**
Spent to Date:		**2018 - 2022 Planned Expenditures:**	**$ 420,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 420,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 420,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning	**$ 30,000**					**$ 30,000**
Design	**$ 80,000**		**$ 60,000**			**$ 140,000**
Construction		**$ 100,000**	**$ 150,000**			**$ 250,000**
						$ -
TOTAL	**$ 110,000**	**$ 100,000**	**$ 210,000**	**$ -**	**$ -**	**$ 420,000**

Funding Sources	**Percentage**	**2018 Amount**
Water rates	100%	$110,000
		$0
		$0
Total	**100%**	**$110,000**

Funding Comments:

2018 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: PLANNED
Project Name: Silver Lake Dam Replacement
Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 11/13/17

Project Description:

The long-term reliability of the dam came into question in the spring of 2015 when a sink hole was discovered. In response, DSOD restricted the reservoir level, and the District conducted emergency repairs and a corresponding geotechnical investigation. The likely cause of the sink hole was the creation of voids in the dam as a result of rotting interior logs that have been encapsulated as fill and were part of the original rock and soil filled timber crib structure constructed in 1876. Other evidence of voids occurring within the fill of the dam is uneven crest settlement and shifting locations of leakage discharge. In addition, the upstream gunite face of Silver Lake Dam is at the end of its useful life and no longer reliable. Repairs have been employed since the late 1990's to stem leakage and extend the life of the 50-year old gunite. However, the gunite continues to thin, crack and crumble making repairs increasingly less durable and sustainable. Unforeseeable periods of leakage have also caused delayed filling or early drawdown of the reservoir resulting in loss of water supply and power generation. The leakage through the dam has to be controlled to acceptable rates in order to prevent creation of more voids in the dam as caused by soil particle migration (piping).

The District has evaluated rehabilitation/replacement alternatives to remediate the three major defects (upstream face, interior fill, spillway capacity). The alternatives analysis was submitted to FERC and DSOD in fall 2016, and District staff met with their representatives in January 2017. FERC and DSOD agreed with the District's preliminary findings that the most effective, reliable and least cost alternative is to replace the dam. The project will need to undergo a progression of design and environmental activities over the next several years beginning in 2018 with preparing a Basis of Design Memorandum, conducting a geotechnical investigation to establish foundation conditions, and performing initial environmental review and permitting. As these steps evolve and refine the project, the District will be able to estimate the construction cost with greater accuracy.

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

Basis for Priority:

Compliance with FERC and DSOD dam safety program requirements.

Project Financial Summary:			
Funded to Date:		**Expenditures through end of year:**	**$ -**
Spent to Date:		**2018 - 2022 Planned Expenditures:**	**$ 1,350,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 1,350,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 1,350,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning	**$150,000**	**$150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 750,000**
Design		**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 600,000**
Construction					*	**$ -**
TOTAL	**$ 150,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 300,000**	**$ 1,350,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water FCCs	53%		$79,500
Water Rates	47%		$70,500
Total	**100%**		**$150,000**

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.

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Hydroelectric**

Project Number: **PLANNED**

Project Name: **Weber Dam Access**

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

Priority: **1** **PM:** **Money** **Board Approval:** **11/13/17**

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 2017 with construction by District crews in 2018. 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:**	**$ -**
Spent to Date:	**$ -**	**2018 - 2022 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**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design						**$ -**
Construction	**$ 150,000**					**$ 150,000**
						$ -
TOTAL	**$ 150,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 150,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	47%		$70,500
Water FCCs	53%		$79,500
			$0
Total	**100%**		**$150,000**

Funding Comments:

Recreation Projects

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Recreation**

Project Number: **PLANNED**

Project Name: **Recreation Facility Replacement Program**

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

Priority: **2** **PM:** **Hawkins** **Board Approval:** **11/13/17**

Project Description:

This is a program to replace equipment used at District-owned recreation facilities that have failed or reached end of useful life. Funding will be used for recreation facilities rehabilitation such as road and building improvements that will extend the life of the asset. Need to make numerous repairs to the roadways within SPRA, reroute and repair work on trail system, upgrade HVAC in gatehouse, upgrade SPRA water system, increase ADA facilities and continue to expand the forest management program.

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:	**$ -**	**2018 - 2022 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**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning						**$ -**
Design						**$ -**
Construction	**$ 50,000**		**$ 50,000**		**$ 50,000**	**$ 150,000**
						$ -
TOTAL	**$ 50,000**	**$ -**	**$ 50,000**	**$ -**	**$ 50,000**	**$ 150,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Property Tax	100%		$50,000
Total	**100%**		**$50,000**

Funding Comments:

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **Recreation**

Project Number: PLANNED

Project Name: Sly Park Recreation Area Facility Improvments

Project Category: Master Planning

Priority: 2 **PM:** Hawkins **Board Approval:** 11/13/17

Project Description:

The scope of this project will be to analyze and implement park improvements as described in the Sly Park Master Plan. The addition of these new facilities will generate more income, enhance the level of environment protection, improve water quality, provide facilities that enhance the visitors experience and increase the level of safety for park visitors and EID employees. These projects would include but would not be limited too; 1) Repositioning the SPRA entrance gatehouse to increase the distance between the gate and CR E-16, thus reducing traffic back ups on E-16 and the potential for traffic accidents. 2) Expanding the number of day use facilities, improving and enlarging existing day use facilities and improving and enlarging the associated parking areas. This expansion/improvement would help reduce the need to close the park during periods of high use, resulting in increased revenue. These improvements would also reduce camper/day user conflict and would provide a means potentially reduce the impact to the MET accessed day use areas. Day Use access to SPRA was restricted for one (1) to three (3) hours every Sat & Sun, from 5/27/17-9/3/2017 due to reaching facility capacity thresholds. 3) Improved campsite parking spur delineation and campground roadways to reduce soil compaction and improve stormwater runoff control and capture to reduce erosion and improve water quality. Currently, many of the day use areas and campgrounds in SPRA have minimal or zero storm water management systems in place. By clearly delineating parking areas and improving roadways with culverts and oil separators, storm water could be directed and contaminates captured before entering Jenkinson Lake. Clearly defined parking areas will also reduce the amount of soil compaction which will lead to increased revegetation through out SPRA, thus improving water quality.

Basis for Priority:

Continued increased risk to the environment and water quality, health and safety risk for SPRA visitors and EID staff, revenue generation and increased customer satisfaction.

Project Financial Summary:			
Funded to Date:	**$ -**	**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2018 - 2022 Planned Expenditures:**	**$ 250,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 250,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 250,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Study/Planning	**$ 50,000**					**$ 50,000**
Design		**$ 50,000**				**$ 50,000**
Construction		**$ 50,000**	**$ 100,000**			**$ 150,000**
						$ -
TOTAL	**$ 50,000**	**$ 100,000**	**$ 100,000**	**$ -**	**$ -**	**$ 250,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Property Tax	100%		$50,000
			$0
			$0
Total	**100%**		**$50,000**

Funding Comments:

General District Projects

2018 **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:** 11/13/17

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:	$ 26,600
Spent to Date:	$ 173,400	2018 - 2022 Planned Expenditures:	$ 152,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 178,600
Project Balance	$ 178,600	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 178,600					$ 178,600
						$ -
TOTAL	$ 178,600	$ -	$ -	$ -	$ -	$ 178,600

Funding Sources	Percentage	2018 Amount
Water Rates	60%	$0
Wastewater Rates	40%	$0
		$0
Total	100%	$0

Funding Comments:

2018 **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:** 11/13/17

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:	**$ -**	**2018 - 2022 Planned Expenditures:**	**$ 45,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 45,000**
Project Balance	**$ 30,000**	**Additional Funding Required**	**$ 15,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Programming	**$ 45,000**	**$ -**				**$ 45,000**
						$ -
						$ -
						$ -
TOTAL	**$ 45,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 45,000**

Funding Sources	**Percentage**	**2018 Amount**
Wastewater Rates	40%	$6,000
Water Rates	60%	$9,000
		$0
Total	**100%**	**$15,000**

Funding Comments:

2018	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 17018

Project Name: SCADA Software Efficiency Program

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Strahan **Board Approval:** 11/13/17

Project Description:

Maintain and improve the reliability and performance of the current SCADA infrastructure used to manage automated process control through identifying 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 organizing software programs.

Project Financial Summary:			
Funded to Date:	$ 9,684	Expenditures through end of year:	$ 9,684
Spent to Date:	$ -	2018 - 2022 Planned Expenditures:	$ 225,000
Cash flow through end of year:	$ 9,684	Total Project Estimate:	$ 234,684
Project Balance	$ -	Additional Funding Required	$ 225,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	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	2018	Amount
Water Rates	60%		$27,000
Wastewater Rates	40%		$18,000
			$0
Total	100%		$45,000

Funding Comments:

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: **PLANNED**

Project Name: **2018 Vehicle Replacement**

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

Priority: **2** **PM:** **Warden** **Board Approval:** **11/13/17**

Project Description:

The following vehicle replacements are planned for 2018 - 2022:

2018: 1-1 1/2 ton service truck with crane, 1-1 ton extended cab 4X4 pickup, 5 Yard Combination jet/vacuum sewer cleaner "Vac-Con"
2019: 1-John Deere 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 pickups, 2- 4X4 SUV's, 1- 1 ton 4X4 service truck, 1- 7 yard used dump truck chassis
2022: 2-used 6-7 yard dump trucks, 2- 1/2 ton 4X4 pickup,1- 4X4 SUV, 1- 1 ton service truck
The planned expenditures are listed below.

Basis for Priority:

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**	**2018 - 2022 Planned Expenditures:**	**$ 1,764,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 1,857,504**
Project Balance	**$ 331,496**	**Additional Funding Required**	**$ 1,432,504**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Vehicles	**$ 622,000**	**$ 304,000**	**$ 97,000**	**$ 331,000**	**$ 410,000**	**$ 1,764,000**
						$ -
						$ -
						$ -
TOTAL	**$ 622,000**	**$ 304,000**	**$ 97,000**	**$ 331,000**	**$ 410,000**	**$ 1,764,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	100%		$290,504
			$0
			$0
Total	**100%**		**$290,504**

Funding Comments:

2018 **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:** 11/13/17

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.

No priority actions currently planned for 2018.

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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Prevention Measures		$250,000				$ 250,000
Detection Measures			$120,000			$ 120,000
Response Measures				$230,000		$ 230,000
						$ -
TOTAL	$ -	$ 250,000	$ 120,000	$ 230,000	$ -	$ 600,000

Funding Sources	Percentage	2018 Amount
Water Rates	60%	$0
Wastewater Rates	40%	$0
		$0
Total	100%	$0

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

2018 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: PLANNED

Project Name: Hansen 7 Software Replacement

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Ranstrom **Board Approval:** 11/13/17

Project Description:

Project replaces the antiquated Hansen 7 utility management database software with modern Infor Public Sector software configured to support current and evolving regulatory and operational requirements. Project substantially improves daily utility operations management and decision making through integration to several key software platforms and retiring a myriad of workarounds used daily by District employees to perform routine job functions including asset management, maintenance management, customer service, records management, materials management, and fleet management. The workarounds are largely stand-alone, 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.

Basis for Priority:

Hansen 7 has seen no new feature development since 2003 and no longer supports current and evolving regulatory and operational requirements. Modern software will improve the speed and accuracy of critical business processes used to perform operations, customer service, billing, regulatory reporting, and other key functions of the District.

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2018 - 2022 Planned Expenditures:**	$ 625,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 625,000
Project Balance	$ -	**Additional Funding Required**	$ 625,000

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Needs Assessment / Master Plan		$ 125,000				$ 125,000
Maintenance Management Upgrade			$ 500,000			$ 500,000
Customer Service & Billing System Upgrade						$ -
TOTAL	$ -	$ 125,000	$ 500,000	$ -	$ -	$ 625,000

Funding Sources	**Percentage**	**2018 Amount**
Water Rates	60%	$0
Wastewater Rates	40%	$0
Total	**100%**	**$0**

Funding Comments: Funding carried over from prior year CIP named Enterprise Software Application Improvements.

2018	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:** Eberhard **Board Approval:** 11/13/17

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 2018 include:
- Replace end of life network switches that provide connectivity for hundreds of devices in numerous District facilities,
- Replace end of life network routers that interconnect all of the District's facilities
- Replace end-of-life audio/visual equipment in Board Room and Sly Park Conference Room.

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:	$ -	2018 - 2022 Planned Expenditures:	$ 857,000
Cash flow through end of year:		Total Project Estimate:	$ 857,000
Project Balance	$ -	Additional Funding Required	$ 857,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Core and wide area networking	$ 120,000	$ 400,000				$ 520,000
Local area and access networking	$ 212,000		$ 10,000			$ 222,000
Communications and collaboration systems	$ 50,000			$ 20,000	$ 45,000	$ 115,000
TOTAL	$ 382,000	$ 400,000	$ 10,000	$ 20,000	$ 45,000	$ 857,000

Funding Sources	Percentage	2018 Amount
Water Rates	60%	$229,200
Wastewater Rates	40%	$152,800
		$0
Total	100%	$382,000

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

2018	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Mobile GIS and MMS

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Wolf **Board Approval:** 11/13/17

Project Description:

Project implements modern mobile GIS and Maintenance Management System (MMS) access capabilities for field workers using handheld mobile devices and Esri ArcGIS software configured to support current and evolving regulatory and operational requirements. Project substantially improves efficiency of daily utility operations tasks and decision making through integration to several key software platforms and retiring cumbersome processes and aged technology used daily by District employees to perform routine job functions including service requests, maintenance management, and customer service.

Basis for Priority:

Existing solution uses laptop devices mounted in vehicles and requires constant network connectivity to function - which is neither practical nor feasible. These limitations cause duplicate sets of data to be maintained in multiple places and lead to widespread inefficiency, plus confusion and potentially poor decisions when using data where the quality is poor or inconsistent. Modern mobile devices and software apps will improve the speed and accuracy of critical business processes performed routinely by District employees working in the field.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Staff time	$ 30,000					$ 30,000
Professional Services	$ 50,000					$ 50,000
Equipment	$ 35,000					$ 35,000
						$ -
TOTAL	$ 115,000	$ -	$ -	$ -	$ -	$ 115,000

Funding Sources	Percentage	2018 Amount
Water Rates	60%	$69,000
Wastewater Rates	40%	$46,000
		$0
Total	100%	$115,000

Funding Comments: Funding carried over from prior year in CIP, previously part of the Enterprise GIS Program.

2018	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:** 11/13/17

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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	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	2018	Amount
Water Rates	60%		$21,000
Wastewater Rates	40%		$14,000
			$0
Total	100%		$35,000

Funding Comments:

2018	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:** 11/13/17

Project Description:

This CIP is to develop SCADA standards and a detailed CIP plan as recommended by our hired consultant. Please refer 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:	$ -	2018 - 2022 Planned Expenditures:	$ 450,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 450,000
Project Balance	$ -	Additional Funding Required	$ 450,000

Description of Work	Estimated Annual Expenditures					
	2018	2019	2020	2021	2022	Total
Develop Standards	$ 200,000	$ 200,000				$ 400,000
Develop Detailed CIP Plan						$ -
Develop KPIs						$ -
Automatic Reports Generation	$ 50,000					$ 50,000
						$ -
						$ -
TOTAL	$ 250,000	$ 200,000	$ -	$ -	$ -	$ 450,000

Funding Sources	Percentage	2018 Amount
Water Rates	60%	$150,000
Wastewater Rates	40%	$100,000
		$0
Total	100%	$250,000

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

2018	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:	11/13/17

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:	$ -	2018 - 2022 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					
	2018	2019	2020	2021	2022	Total
Study/Planning						$ -
Design						$ -
Construction	$ 60,000					$ 60,000
						$ -
TOTAL	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000

Funding Sources	Percentage	2018 Amount
Water Rates	100%	$60,000
		$0
		$0
Total	100%	$60,000

Funding Comments:

2018 **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:** **Proctor** **Board Approval:** **11/13/17**

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 2018 include:
- Conclude project starting in late 2017 to replace end-of-life data center blade servers and data storage systems that host the District's essential database applications.

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:	**$ -**	**2018 - 2022 Planned Expenditures:**	**$ 945,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 945,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 945,000**

Description of Work	**Estimated Annual Expenditures**					
	2018	**2019**	**2020**	**2021**	**2022**	**Total**
Data center & cloud computing	**$ 250,000**	**$ 200,000**				**$ 450,000**
Distributed computing				**$ 45,000**	**$ 450,000**	**$ 495,000**
TOTAL	**$ 250,000**	**$ 200,000**	**$ -**	**$ 45,000**	**$ 450,000**	**$ 945,000**

Funding Sources	**Percentage**	**2018**	**Amount**
Water Rates	60%		$150,000
Wastewater Rates	40%		$100,000
			$0
Total	**100%**		**$250,000**

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