El Dorado Irrigation District

FIVE YEAR

Capital Improvement Plan

2020—2024

Approved October 15, 2019

El Dorado Irrigation District

2020-2024 CAPITAL IMPROVEMENT PLAN

Approved October 15, 2019

	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$5,721,762	$743,195	$464,671	$381,191	$392,682	$7,703,501
Water	$22,342,500	$25,813,750	$15,303,750	$14,023,750	$27,360,750	$104,844,500
Wastewater	$8,701,493	$6,195,000	$6,085,000	$4,855,000	$8,530,000	$34,366,493
Recycled Water	$175,000	$100,000	$550,000	$550,000	$550,000	$1,925,000
Hydroelectric	$19,615,000	$11,295,000	$4,310,000	$8,395,000	$6,460,000	$50,075,000
Recreation	$150,000	$150,000	$100,000	$200,000	$100,000	$700,000
General District	$2,600,000	$2,351,000	$1,997,000	$1,620,000	$1,290,000	$9,858,000
TOTAL	**$59,305,755**	**$46,647,945**	**$28,810,421**	**$30,024,941**	**$44,683,432**	**$209,472,494**

2019-2023 CAPITAL IMPROVEMENT PLAN

Approved January 28, 2019

	2019 PLANNED	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	FIVE-YEAR PLAN TOTAL
FERC	$3,940,762	$4,298,195	$704,671	$436,191	$352,682	$9,732,501
Water	$9,087,500	$22,817,500	$7,482,500	$6,534,500	$6,252,500	$52,174,500
Wastewater	$7,167,000	$2,940,000	$3,145,000	$5,935,000	$3,710,000	$22,897,000
Recycled Water	$230,000	$185,000	$0	$0	$0	$415,000
Hydroelectric	$27,848,501	$14,551,255	$15,405,000	$3,200,000	$3,050,000	$64,054,756
Recreation	$100,000	$150,000	$150,000	$100,000	$150,000	$650,000
General District	$4,303,500	$3,054,500	$3,007,000	$1,778,000	$2,500,000	$14,643,000
TOTAL	**$52,677,263**	**$47,996,450**	**$29,894,171**	**$17,983,691**	**$16,015,182**	**$164,566,757**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan

FERC Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
06021H	FERC C37.8 Water Temperature	FERC	1	35,000	25,000	35,000	35,000	25,000	155,000
06076H	FERC C38.4b Caples Spillway Channel Stabilization	FERC	1	575,000	0	0	0	0	575,000
06081H	FERC: C50.8 Pacific Crest Trail Crossing	FERC	1	150,000	0	0	0	0	150,000
06082H	FERC: C50.1 Silver Lake Campground East Re-Construction	FERC	1	3,500,000	0	0	0	0	3,500,000
06086H	FERC C33 Lake Aloha Trout Removal	FERC	1	15,000	0	0	0	0	15,000
06087H	FERC C37.1 Fish Monitoring	FERC	1	0	75,000	75,000	0	0	150,000
06088H	FERC: C37.2 Macroinvertebrate Monitoring	FERC	1	0	65,000	65,000	0	0	130,000
06089H	FERC: C37.3 Amphibian Monitoring	FERC	1	20,000	85,000	0	0	0	105,000
06090H	FERC: C37.4 Riparian Species Composition	FERC	1	0	25,000	0	0	0	25,000
06091H	FERC: C37.5 Riparian Vegetation Recruitment	FERC	1	0	25,000	0	0	0	25,000
06092H	FERC: C37.7 Geomorphology Evaluation	FERC	1	10,000	95,000	20,000	20,000	20,000	165,000
06096H	FERC: C55 Heritage Resources	FERC	1	55,000	0	0	0	0	55,000
06097H	FERC: C59 Facility Management Plan	FERC	1	5,000	5,000	15,000	0	0	25,000
06098H	FERC: C46 thru C49 Recreation Resource Management	FERC	1	0	0	0	70,000	10,000	80,000
07003H	FERC: C37.9 Water Quality	FERC	1	0	80,000	0	0	80,000	160,000
07005H	FERC: C51.3 RM Echo Trailhead	FERC	1	8,000	8,000	8,000	8,000	8,000	40,000
07006H	FERC: C51.5 and C51.7 RM USFS Payments	FERC	1	51,762	53,195	54,671	56,191	57,682	273,501
07010H	FERC: C15 Pesticide Use	FERC	1	70,000	70,000	70,000	70,000	70,000	350,000
07011H	FERC: C38 Adaptive Management Program	FERC	1	50,000	50,000	50,000	50,000	50,000	250,000
07030H	FERC: C57 Transportation System Management Plan	FERC	1	50,000	5,000	5,000	5,000	5,000	70,000
08025H	FERC C44 Noxious Weed Monitoring	FERC	1	27,000	37,000	27,000	27,000	27,000	145,000
10007	FERC C51.1 and 51.2 RM Caples Auxiliary Dam and Boat Launch	FERC	1	100,000	40,000	40,000	40,000	40,000	260,000
15016	FERC: C50.2 Caples Lake Campground Re-Construction	FERC	1	1,000,000	0	0	0	0	1,000,000
			TOTAL:	**5,721,762**	**743,195**	**464,671**	**381,191**	**392,682**	**7,703,501**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
16005	Diamond Springs Parkway / Hwy 49 Improvements	WA	1	150,000	0	0	0	0	150,000
17035	Green Valley Bridge Relocation	WA	1	425,000	0	0	0	0	425,000
18025	DOT Construction Projects - Water	WA	1	25,000	25,000	25,000	25,000	25,000	125,000
19007	EDM 1 / EDM 2 Intertie	WA	1	400,000	0	0	0	0	400,000
19008	EDM 1 Relocate / Camino Safety	WA	1	700,000	0	0	0	0	700,000
PLANNED	Diversion Gauging Measurement and Reporting Requirements	WA	1	65,000	0	0	0	0	65,000
PLANNED	Placerville Drive Hangtown Creek Bridge Replacement	WA	1	25,000	50,000	275,000	0	0	350,000
PLANNED	Water Arc Flash Risk Assessment Program	WA	1	65,000	65,000	65,000	65,000	65,000	325,000
06004G	SMUD / El Dorado Agreement Water Rights	WA	2	50,000	0	0	0	0	50,000
11032	Main Ditch - Forebay to Reservoir 1	WA	2	5,580,000	3,860,000	0	0	0	9,440,000
15009	Sly Park Intertie Improvements	WA	2	5,000	100,000	500,000	500,000	12,750,000	13,855,000
15024	Folsom Lake Intake Improvements Project	WA	2	6,650,000	11,050,000	0	0	0	17,700,000
16003	Permit 21112 Change in Point of Diversion	WA	2	300,000	200,000	0	0	0	500,000
16048	Outingdale Water Intake Replacement	WA	2	305,000	0	0	0	0	305,000
17011	Crestview Pump Station Replacement Project	WA	2	25,000	250,000	0	0	0	275,000
17014	Green Valley PRS #2	WA	2	80,000	0	0	0	0	80,000
17015	Lakeview PRS #1	WA	2	90,000	0	0	0	0	90,000
17016	El Dorado Main #1 PRS #5	WA	2	550,000	0	0	0	0	550,000
17031	Forest Road Waterline Relocate	WA	2	90,000	0	0	0	0	90,000
17048	Strawberry Raw Water Pump Station	WA	2	25,000	75,000	350,000	0	0	450,000
18002	Sanders Road Waterline Replacement	WA	2	0	70,000	0	0	0	70,000
18007	Pony Express 8-Inch Waterline Replacement Project	WA	2	100,000	0	0	0	0	100,000
18018	Easy Street Waterline Replacement	WA	2	0	50,000	1,400,000	0	0	1,450,000
18036	Francisco PRS # 1 Upgrade	WA	2	80,000	0	0	0	0	80,000
18040	Forebay Road Waterline Replacement	WA	2	0	50,000	1,850,000	0	0	1,900,000
18048	Critical Water Facility Generators	WA	2	350,000	0	0	0	0	350,000
18065	El Dorado Hills Water Treatment Plant Automation Rehabilitation	WA	2	50,000	1,700,000	0	0	0	1,750,000
19006	AMR and Small Meter Replacement	WA	2	150,000	150,000	150,000	150,000	150,000	750,000
19009	Integrated Water Resources Master Plan Update	WA	2	250,000	0	0	0	0	250,000
19010	Valley View Pump Station #3	WA	2	100,000	0	0	0	0	100,000

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
19016	Main Ditch Litigation	WA	2	100,000	0	0	0	0	100,000
19019	Strawberry Self Cleaning Screens	WA	2	35,000	0	0	0	0	35,000
PLANNED	Construction Equipment	WA	2	395,000	0	0	0	0	395,000
PLANNED	Folsom - EDH Water Treatment Plant Improvements Program	WA	2	0	0	100,000	100,000	100,000	300,000
PLANNED	Meter Test Bench Replacement	WA	2	250,000	30,000	0	0	0	280,000
PLANNED	Pressure Reducing Station Rehabilitation and Replacement Program	WA	2	150,000	910,000	250,000	600,000	315,000	2,225,000
PLANNED	Pump Station Rehabilitation and Replacement Program	WA	2	0	100,000	250,000	100,000	850,000	1,300,000
PLANNED	Reservoir A WTP PLC Replacement	WA	2	110,000	335,000	0	0	0	445,000
PLANNED	Reservoir 1 Water Treatment Plant Improvements Program	WA	2	0	100,000	45,000	225,000	0	370,000
PLANNED	SCADA Water Hardware Replacement Program	WA	2	50,000	50,000	50,000	50,000	50,000	250,000
PLANNED	Serviceline Replacement Program	WA	2	4,050,000	4,850,000	4,850,000	4,850,000	4850000	23,450,000
PLANNED	Sly Park Dam Facility Improvements	WA	2	0	65,000	0	0	0	65,000
PLANNED	Sly Park - Reservoir A Water Treatment Plant Improvements Program	WA	2	0	345,000	350,000	100,000	100,000	895,000
PLANNED	Storage Replacement & Rehabilitation Program	WA	2	100,000	450,000	3,600,000	1,850,000	2,900,000	8,900,000
PLANNED	Waterline Replacement Program	WA	2	0	50,000	50,000	5,050,000	5,050,000	10,200,000
PLANNED	Water Distribution Radio path design	WA	2	0	0	140,000	170,000	0	310,000
PLANNED	Wholesale Meter Replacement	WA	2	15,000	150,000	0	0	0	165,000
PLANNED	960 El Dorado Hills #1 Transmission Line Replacement Project	WA	2	0	0	100,000	0	0	100,000
STUDY03	WTP Assessments	WA	2	345,000	500,000	0	0	0	845,000
PLANNED	Construction Storage Facility	WA	3	0	40,000	750,000	0	0	790,000
PLANNED	EDM Flow integration	WA	3	57,500	143,750	143,750	143,750	143,750	632,500
PLANNED	Lower Ditch Water Rights SCADA Upgrades	WA	3	0	0	10,000	45,000	12,000	67,000
TOTAL				**22,342,500**	**25,813,750**	**15,303,750**	**14,023,750**	**27,360,750**	**104,844,500**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Wastewater Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
17023	Rancho Ponderosa LS Relocation/Abandonment	WW	1	0	480,000	0	0	0	480,000
PLANNED	DOT Construction Projects	WW	1	10,000	10,000	10,000	10,000	10,000	50,000
PLANNED	Wastewater Arc Flash Risk Assessment Program	WW	1	65,000	65,000	65,000	65,000	65,000	325,000
STUDY09	Camino Heights WWTP Study	WW	1	50,000	0	0	0	0	50,000
15036	Silva Valley - El Dorado Hills Sewerline	WW	2	130,000	0	0	0	0	130,000
16008	South Pointe Lift Station Rehabilitation	WW	2	1,918,108	0	0	0	0	1,918,108
16030	Solar Assessment Design	WW	2	483,385	0	0	0	0	483,385
17020	Wastewater Collection System Pipeline Rehabilitation	WW	2	0	0	900,000	0	0	900,000
17033	DCWWTP Process Control Design	WW	2	1,200,000	0	0	0	0	1,200,000
17034	Wastewater Collections Facility Relocation	WW	2	1,480,000	2,225,000	0	0	0	3,705,000
17046	Strolling Hills Pipeline Improvements	WW	2	25,000	25,000	200,000	1,400,000	1,400,000	3,050,000
18003	Wastewater Lift Station Communication Upgrade	WW	2	480,000	580,000	580,000	1,080,000	1,080,000	3,800,000
18027	El Dorado Lift Pipeline Replacement	WW	2	550,000	0	0	0	0	550,000
18035	EDHWWTP WAS DAFT Rehabilitation	WW	2	300,000	930,000	930,000	0	0	2,160,000
18053	EDHWWTP Belt Press PLC Replacement	WW	2	0	280,000	0	0	0	280,000
18063	EDHWWTP Solar Inverters	WW	2	330,000	0	0	0	0	330,000
19005	Town Center Force Main PH4	WW	2	0	0	0	100,000	2,850,000	2,950,000
PLANNED	Closed Circuit Television (CCTV) Sewer Inspection Equipment	WW	2	425,000	0	0	0	0	425,000
PLANNED	Collections Master Radio PLC Replacement	WW	2	150,000	0	0	0	0	150,000
PLANNED	Collections Radio path design	WW	2	215,000	200,000	0	0	0	415,000
PLANNED	EDHWWTP PLC Replacement Project	WW	2	85,000	225,000	275,000	275,000	0	860,000
PLANNED	SCADA Wastewater Hardware Replacement Program	WW	2	50,000	50,000	50,000	50,000	50,000	250,000
PLANNED	Wastewater Asset Replacement Program	WW	2	200,000	200,000	200,000	200,000	200,000	1,000,000
PLANNED	Wastewater Lift Station Upgrade Program	WW	2	80,000	300,000	1,500,000	300,000	1,500,000	3,680,000
PLANNED	Wastewater Pipeline Replacement and Rehabilitation Program	WW	2	100,000	100,000	1,050,000	1,050,000	1,050,000	3,350,000
PLANNED	WWTP Assessments	WW	2	200,000	200,000	0	0	0	400,000
PLANNED	WWTP Process Improvement Program	WW	2	175,000	325,000	325,000	325,000	325,000	1,475,000
Total				**8,701,493**	**6,195,000**	**6,085,000**	**4,855,000**	**8,530,000**	**34,366,493**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Recycled Water Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
PLANNED	Recycled Water Asset Planning	RW	2	100,000	100,000	0	0	0	200,000
PLANNED	Recycled Water Asset Replacement Program	RW	2	0	0	550,000	550,000	550,000	1,650,000
PLANNED	Recycled Water Radio Path Design and Replacement	RW	3	75,000	0	0	0	0	75,000
			TOTAL:	**175,000**	**100,000**	**550,000**	**550,000**	**550,000**	**1,925,000**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Hydroelectric Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
11004	Lake Aloha Dam Repairs	HY	1	110,000	0	0	0	0	110,000
17013	Forebay Dam Upgrades	HY	1	2,000,000	0	0	0	0	2,000,000
17051	Weber Dam Access	HY	1	20,000	0	0	0	0	20,000
19031	Silver Lake Dam Replacement	HY	1	150,000	250,000	600,000	200,000	200,000	1,400,000
PLANNED	Annual Reservoir and Dam Program	HY	1	250,000	50,000	50,000	50,000	50,000	450,000
16022	Flume 38-40 Canal Conversion	HY	2	11,100,000	100,000	0	0	0	11,200,000
16044	Pacific Tunnel Portal Rehab	HY	2	3,200,000	100,000	0	0	0	3,300,000
16046	Powerhouse Roof	HY	2	325,000	0	0	0	0	325,000
17025	Flume 45 Abutment Replacement	HY	2	100,000	100,000	1,500,000	60,000	0	1,760,000
17028	Flume 48 Replacement/Tunnel option	HY	2	220,000	200,000	200,000	5,000,000	5,100,000	10,720,000
17041	Flume 30 Replacement	HY	2	200,000	8,350,000	0	0	0	8,550,000
18010	Penstock Stabilization Improvements	HY	2	420,000	360,000	310,000	150,000	150,000	1,390,000
18013	Project 184 SCADA System Hardware Replacement	HY	2	400,000	300,000	0	0	0	700,000
19024	Echo Conduit Rehabilitation	HY	2	150,000	380,000	300,000	300,000	300,000	1,430,000
PLANNED	Annual Canal and Flume Program	HY	2	500,000	500,000	500,000	500,000	500,000	2,500,000
PLANNED	Flume 46A Canal Conversion	HY	2	0	45,000	155,000	2,000,000	0	2,200,000
PLANNED	Hydro Facility Replacement Program	HY	2	250,000	100,000	100,000	100,000	100,000	650,000
PLANNED	Powerhouse Automation Replacement	HY	2	75,000	125,000	175,000	0	0	375,000
PLANNED	Spare Powerhouse Turbine Runner	HY	2	75,000	0	0	0	0	75,000
STUDY 2020	2020 Canal Release Points Assessment	HY	2	50,000	0	0	0	0	50,000
STUDY 2021	2021 Tunnel Assessment	HY	2	0	35,000	0	0	0	35,000
STUDY 2022	2022 Flume Assessment	HY	2	0	0	50,000	0	0	50,000
STUDY 2023	2023 Canal Assessment	HY	2	0	0	0	35,000	0	35,000
STUDY 2024	2024 Siphon Assessment	HY	2	0	0	0	0	60,000	60,000
19013	Hydro Crew Room Upgrade	HY	3	20,000	130,000	0	0	0	150,000
PLANNED	Camp 5 Facility Power Improvements	HY	3	0	45,000	185,000	0	0	230,000
PLANNED	Diversion Facility Power Improvements	HY	3	0	50,000	185,000	0	0	235,000
PLANNED	Silver Lake Facility Power Improvements	HY	3	0	75,000	0	0	0	75,000
			TOTAL:	**19,615,000**	**11,295,000**	**4,310,000**	**8,395,000**	**6,460,000**	**50,075,000**

El Dorado Irrigation District

2020 - 2024 Capital Improvement Plan
Recreation Projects

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
PLANNED	Recreation Facility Replacement Program	RE	2	50,000	50,000	50,000	50,000	50,000	250,000
PLANNED	Sly Park Recreation Area Facility Improvements	RE	2	75,000	95,000	45,000	100,000	50,000	365,000
18023	Sly Park Recreation Area Day Use Area Improve	RE	3	25,000	5,000	5,000	50,000	0	85,000
			TOTAL:	**150,000**	**150,000**	**100,000**	**200,000**	**100,000**	**700,000**

2020-2024 Capital Improvement Plan
General District

PROJECT NO.	PROJECT DESCRIPTION	PROGRAM	PRIORITY	2020 PLANNED	2021 PLANNED	2022 PLANNED	2023 PLANNED	2024 PLANNED	2020-2024 TOTAL
16037	SCADA Configuration and Alarm Response	GD	2	45,000	45,000	45,000	0	0	135,000
18033	Radio Telemetry and Network Replacement Program	GD	2	45,000	20,000	20,000	15,000	15,000	115,000
18044	WAN Upgrade	GD	2	50,000	50,000	0	0	0	100,000
18055	Hansen 7 Software Replacement	GD	2	800,000	800,000	800,000	0	0	2,400,000
19028	Datacenter SCADA Segmentation	GD	2	50,000	0	0	0	0	50,000
19029	Wyse Laptop Replacement	GD	2	50,000	0	0	0	0	50,000
PLANNED	Boardroom Projection System Replacement and Live Streaming Upgrade	GD	2	90,000	0	0	0	0	90,000
PLANNED	Information Systems Replacement & Development	GD	2	675,000	535,000	165,000	475,000	250,000	2,100,000
PLANNED	Information Technology Infrastructure & Security	GD	2	0	0	50,000	200,000	50,000	300,000
PLANNED	SCADA Master Plan Implementation	GD	2	0	100,000	395,000	400,000	300,000	1,195,000
PLANNED	SCADA Wonderware 2014 Replacement	GD	2	175,000	0	0	0	0	175,000
PLANNED	Security Equipment Reliability Program	GD	2	30,000	30,000	30,000	30,000	30,000	150,000
PLANNED	Vehicle Replacement	GD	2	440,000	621,000	492,000	500,000	645,000	2,698,000
18043	Wireless LAN Upgrade	GD	3	150,000	150,000	0	0	0	300,000
Total				**2,600,000**	**2,351,000**	**1,997,000**	**1,620,000**	**1,290,000**	**9,858,000**

Note: There is a discrepancy between the amount shown in the General District summary compared to the amount on the Planned Information Technology Infrastructure & Security project worksheet. The amount on the project worksheet is correct.

FERC
Projects

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06021H

Project Name: FERC C37.8 Water Temperature

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 299,500	Expenditures through end of year:	$ 277,823
Spent to Date:	$ 262,823	2020 - 2024 Planned Expenditures:	$ 155,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 432,823
Project Balance	$ 21,677	Additional Funding Required	$ 133,323

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Monitoring	$25,000	$15,000	$25,000	$25,000	$15,000	$ 105,000
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	$ 35,000	$ 25,000	$ 35,000	$ 35,000	$ 25,000	$ 155,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$7,061
Water Rates	47%	$6,262
		$0
Total	100%	$13,323

Funding Comments: Temperature monitoring is coordinated with water quality sampling every three years (e.g., 2021 and 2024)

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06076H

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

Project Category: Regulatory Requirements

Priority: 1 **PM:** Delongchamp **Board Approval:** 10/15/19

Project Description:

This Project is a mandatory requirement of the conditions of the FERC license. The stabilization plan has been approved by the regulatory agencies. Design, environmental review and permitting is to be complete by the end of 2019 and construction anticipated to begin in fall of 2020.

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:	$ 646,657	Expenditures through end of year:	$ 603,186
Spent to Date:	$ 513,186	2020 - 2024 Planned Expenditures:	$ 575,000
Cash flow through end of year:	$ 90,000	Total Project Estimate:	$ 1,178,186
Project Balance	$ 38,968	Additional Funding Required	$ 536,032

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 75,000					$ 75,000
Construction	$ 500,000					$ 500,000
TOTAL	$ 575,000	$ -	$ -	$ -	$ -	$ 575,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$284,097
Water Rates	47%		$251,935
Total	**100%**		**$536,032**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06081H

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

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

This project is a requirement of the FERC License, Settlement Agreement, and the USFS 4(e) Condition 50.8 which sates the license 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, Pacific Crest Trail Association and Tahoe Rim Trail Association regarding the location and design of the crossing, and subsequently developed the design for FS review and approval. To schedule construction, the District has obtained USFS approval, and is awaiting FERC's approval of a time extension to October 2020 to allow additional time to complete consultation with the FS, complete environmental review, obtain any necessary permits, and construct the crossing.

Funding is required to conduct final biological resource surveys, update the design per any FS comments, procure a pre-fabricated bridge and install the bridge in summer of 2020.

Basis for Priority:

Project is required by Project 184 license.

Project Financial Summary:			
Funded to Date:	$ 162,960	Expenditures through end of year:	$ 162,960
Spent to Date:	$ 112,177	2020 - 2024 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ 50,783	Total Project Estimate:	$ 312,960
Project Balance	$ (0)	Additional Funding Required	$ 150,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 150,000					$ 150,000
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$79,500
Water Rates	47%	$70,500
		$0
Total	100%	$150,000

Funding Comments:

2020	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:** Delongchamp **Board Approval:** 10/15/19

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 Architectural Barriers Act (ABA). Project funding represents the cost as received by bid and awarded at the August 26, 2019 Board Meeting. 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. This portion of the project is still in design review and will be taken to the Board for award in late 2019. The project was awarded in 2019 and construction is scheduled to begin in Spring 2020.

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:	$ 2,919,282	Expenditures through end of year:	$ 239,101
Spent to Date:	$ 214,101	2020 - 2024 Planned Expenditures:	$ 3,500,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 3,739,101
Project Balance	$ 2,680,181	Additional Funding Required	$ 819,819

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction (Campground)	$ 2,500,000					$ 2,500,000
Construction (Water System)	$ 1,000,000					$ 1,000,000
TOTAL	$ 3,500,000	$ -	$ -	$ -	$ -	$ 3,500,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$434,504
Water Rates	47%	$385,315
Total	100%	$819,819

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06086H

Project Name: FERC C33 Lake Aloha Trout Removal

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 44,683
Spent to Date:	$ 44,683	2020 - 2024 Planned Expenditures:	$ 15,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 59,683
Project Balance	$ 42,317	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$15,000	$0	$0	$0	$0	$ 15,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000

Estimated Funding Sources	Percentage	2020	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

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06087H

Project Name: FERC C37.1 Fish Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 266,720
Spent to Date:	$ 266,720	2020 - 2024 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 416,720
Project Balance	$ 23,280	Additional Funding Required	$ 126,720

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 60,000	$ 60,000			$ 120,000
Staff time		$ 15,000	$ 15,000			$ 30,000
						$ -
TOTAL	$ -	$ 75,000	$ 75,000	$ -	$ -	$ 150,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Monitoring required every 5th and 6th year of the FERC license - next monitoring event in 2021/2022

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06088H

Project Name: FERC: C37.2 Macroinvertebrate Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 188,234
Spent to Date:	$ 188,234	2020 - 2024 Planned Expenditures:	$ 130,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 318,234
Project Balance	$ 27,766	Additional Funding Required	$ 102,234

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 60,000	$ 60,000			$ 120,000
Staff time		$ 5,000	$ 5,000			$ 10,000
						$ -
						$ -
TOTAL	$ -	$ 65,000	$ 65,000	$ -	$ -	$ 130,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments: Monitoring required every 5th and 6th year of the FERC license - next monitoring event in 2021/2022

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06089H

Project Name: FERC: C37.3 Amphibian Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 276,692
Spent to Date:	$ 276,692	2020 - 2024 Planned Expenditures:	$ 105,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 381,692
Project Balance	$ 16,308	Additional Funding Required	$ 88,692

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
FYLF/MYLF monitoring		$ 75,000				$ 75,000
Staff time		$ 10,000				$ 10,000
SFAR flow fluctuations	$ 5,000	$ -	$ -	$ -	$ -	$ 5,000
Lake Aloha monitoring	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000
						$ -
TOTAL	$ 20,000	$ 85,000	$ -	$ -	$ -	$ 105,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$1,957
Water Rates	47%	$1,735
		$0
Total	100%	$3,692

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. FYLF/SNYLF monitoring required every five years of FERC license - next monitoring event in 2021.

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06090H

Project Name: FERC: C37.4 Riparian Species Composition

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 20,000				$ 20,000
Staff time		$ 5,000				$ 5,000
						$ -
						$ -
TOTAL	$ -	$ 25,000	$ -	$ -	$ -	$ 25,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Monitoring required every five years of FERC license - next monitoring event in 2021

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06091H

Project Name: FERC: C37.5 Riparian Vegetation Recruitment

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 20,000				$ 20,000
Staff Time		$ 5,000				$ 5,000
						$ -
						$ -
TOTAL	$ -	$ 25,000	$ -	$ -	$ -	$ 25,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Monitoring required every five years of FERC license - next monitoring event in 2021.

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06092H

Project Name: FERC: C37.7 Geomorphology Evaluation

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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. This CIP also covers five years of post-project geomorphology monitoring for the Oyster Creek Stabilization Plan 06019H and Caples Spillway Channel Stabilization Plan 06076H.

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	2020 - 2024 Planned Expenditures:	$ 165,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 267,367
Project Balance	$ 1,909	Additional Funding Required	$ 163,091

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 65,000				$ 65,000
Staff time		$ 10,000				$ 10,000
Post-project monitoring	$ 10,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 90,000
						$ -
TOTAL	$ 10,000	$ 95,000	$ 20,000	$ 20,000	$ 20,000	$ 165,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$4,288
Water Rates	47%	$3,803
		$0
Total	100%	$8,091

Funding Comments: Monitoring required every five years of FERC license - next monitoring event in 2021. This CIP also includes funds for post-project monitoring for Oyster Creek Stabilization Plan 06019H from 2020 - 2024 and for Caples Spillway Channel Stabilization Plan 06076H from 2021 - 2024.

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06096H

Project Name: FERC: C55 Heritage Resources

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 216,493
Spent to Date:	$ 208,493	2020 - 2024 Planned Expenditures:	$ 55,000
Cash flow through end of year:	$ 8,000	Total Project Estimate:	$ 271,493
Project Balance	$ 63,087	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Reporting	$50,000	*	*	*	*	$ 50,000
Staff Time	$ 5,000					$ 5,000
						$ -
						$ -
TOTAL	$ 55,000	$ -	$ -	$ -	$ -	$ 55,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Funding is needed in 2020 to conduct an evaluation of the historic rock walls that are located along the El Dorado Canal.

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06097H

Project Name: FERC: C59 Facility Management Plan

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/15/19

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:	$ 47,458
Spent to Date:	$ 47,458	2020 - 2024 Planned Expenditures:	$ 25,000
Cash flow through end of year:		Total Project Estimate:	$ 72,458
Project Balance	$ 22,542	Additional Funding Required	$ 2,458

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning			$ 15,000			$ 15,000
Design						$ -
Construction	$ 5,000	$ 5,000				$ 10,000
						$ -
TOTAL	$ 5,000	$ 5,000	$ 15,000	$ -	$ -	$ 25,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 06098H

Project Name: FERC: C46 thru C49 Recreation Resource Management

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/15/19

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:	$ 304,888	Expenditures through end of year:	$ 282,020
Spent to Date:	$ 282,020	2020 - 2024 Planned Expenditures:	$ 80,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 362,020
Project Balance	$ 22,868	Additional Funding Required	$ 57,132

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Survey				$ 70,000		$ 70,000
Reporting					$ 10,000	$ 10,000
						$ -
TOTAL	$ -	$ -	$ -	$ 70,000	$ 10,000	$ 80,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: The Recreation Survey is required every 6 years of license implementation - the next survey will be performed in 2023 and agency consultation in 2024

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07003H

Project Name: FERC: C37.9 Water Quality

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 552,000	Expenditures through end of year:	$ 543,342
Spent to Date:	$ 543,342	2020 - 2024 Planned Expenditures:	$ 160,000
Cash flow through end of year:		Total Project Estimate:	$ 703,342
Project Balance	$ 8,658	Additional Funding Required	$ 151,342

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Monitoring		$ 40,000			$ 40,000	$ 80,000
Lab analysis		$ 25,000			$ 25,000	$ 50,000
Staff time		$ 15,000			$ 15,000	$ 30,000
						$ -
						$ -
TOTAL	$ -	$ 80,000	$ -	$ -	$ 80,000	$ 160,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments: Monitoring required every three years of FERC license - next monitoring event in 2021.

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07005H

Project Name: FERC: C51.3 RM Echo Trailhead

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/15/19

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:	$ 22,893
Spent to Date:	$ 21,393	2020 - 2024 Planned Expenditures:	$ 40,000
Cash flow through end of year:	$ 1,500	Total Project Estimate:	$ 62,893
Project Balance	$ 7,107	Additional Funding Required	$ 32,893

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	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

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$473
Water Rates	47%	$420
		$0
Total	100%	$893

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07006H

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

Project Category: Regulatory Requirements

Priority: 1 **PM:** Hawkins **Board Approval:** 10/15/19

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:	$ 493,029	Expenditures through end of year:	$ 538,466
Spent to Date:	$ 488,704	2020 - 2024 Planned Expenditures:	$ 273,501
Cash flow through end of year:	$ 49,762	Total Project Estimate:	$ 811,967
Project Balance	$ (45,437)	Additional Funding Required	$ 318,938

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Fees	$47,762	$49,195	$50,671	$52,191	$53,682	$ 253,501
Staff time	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 20,000
						$ -
						$ -
TOTAL	$ 51,762	$ 53,195	$ 54,671	$ 56,191	$ 57,682	$ 273,501

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$51,516
Water Rates	47%	$45,684
		$0
Total	100%	$97,199

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07010H

Project Name: FERC: C15 Pesticide Use

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/15/19

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:	$ 833,000	Expenditures through end of year:	$ 751,135
Spent to Date:	$ 751,135	2020 - 2024 Planned Expenditures:	$ 350,000
Cash flow through end of year:		Total Project Estimate:	$ 1,101,135
Project Balance	$ 81,865	Additional Funding Required	$ 268,135

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Implementation	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 300,000
Equipment / Supplies	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 50,000
						$ -
						$ -
TOTAL	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 350,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07011H

Project Name: FERC: C38 Adaptive Management Program

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 622,000	Expenditures through end of year:	$ 599,742
Spent to Date:	$ 579,742	2020 - 2024 Planned Expenditures:	$ 250,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 849,742
Project Balance	$ 22,258	Additional Funding Required	$ 227,742

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Staff time	$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

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$14,703
Water Rates	47%		$13,039
			$0
Total	100%		$27,742

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 07030H

Project Name: FERC: C57 Transportation System Management Plan

Project Category: Regulatory Requirements

Priority: 1 **PM:** Gibson **Board Approval:** 10/15/19

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 2020.

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:	$ 46,246
Spent to Date:	$ 46,246	2020 - 2024 Planned Expenditures:	$ 70,000
Cash flow through end of year:		Total Project Estimate:	$ 116,246
Project Balance	$ 33,754	Additional Funding Required	$ 36,246

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design	$ 5,000					$ 5,000
Construction	$ 45,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 65,000
						$ -
TOTAL	$ 50,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 70,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$8,610
Water Rates	47%		$7,636
			$0
Total	100%		$16,246

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	FERC

Project Number: 08025H

Project Name: FERC C44 Noxious Weed Monitoring

Project Category: Regulatory Requirements

Priority: 1 **PM:** Deason **Board Approval:** 10/15/19

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:	$ 247,342	Expenditures through end of year:	$ 238,860
Spent to Date:	$ 228,860	2020 - 2024 Planned Expenditures:	$ 145,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 383,860
Project Balance	$ 8,482	Additional Funding Required	$ 136,518

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Implementation	$25,000	$35,000	$25,000	$25,000	$25,000	$ 135,000
Reporting	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 10,000
						$ -
						$ -
TOTAL	$ 27,000	$ 37,000	$ 27,000	$ 27,000	$ 27,000	$ 145,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$9,815
Water Rates	47%	$8,703
		$0
Total	100%	$18,518

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

2020	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:** 10/15/19

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:	$ 224,000	Expenditures through end of year:	$ 208,911
Spent to Date:	$ 204,911	2020 - 2024 Planned Expenditures:	$ 260,000
Cash flow through end of year:	$ 4,000	Total Project Estimate:	$ 468,911
Project Balance	$ 15,089	Additional Funding Required	$ 244,911

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	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
Construction	$ 60,000					$ 60,000
TOTAL	$ 100,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 260,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$45,003
Water Rates	47%	$39,908
		$0
Total	100%	$84,911

Funding Comments: 2020 construction expenditure request of $60,000 for sealing and striping of Caples Boat Launch parking lot.

2020	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:** Delongchamp **Board Approval:** 10/15/19

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 Architectural Barriers Act (ABA). Design for the campground re-construction was completed in 2018 with a constrcution contract awarded at the District's August 26, 2019 Board Meeting. Construction began in the Fall of 2019 and will be complete in Spring of 2020.

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:	$ 2,424,032	Expenditures through end of year:	$ 1,697,607
Spent to Date:	$ 447,607	2020 - 2024 Planned Expenditures:	$ 1,000,000
Cash flow through end of year:	$ 1,250,000	Total Project Estimate:	$ 2,697,607
Project Balance	$ 726,425	Additional Funding Required	$ 273,575

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction (Campground)	$ 1,000,000					$ 1,000,000
TOTAL	$ 1,000,000	$ -	$ -	$ -	$ -	$ 1,000,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$144,995
Water Rates	47%	$128,580
Total	100%	$273,575

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.

Water Projects

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 16005

Project Name: Diamond Springs Parkway / Hwy 49 Improvements

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Carrington **Board Approval:** 10/15/19

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.

Construction of Diamond Springs Parkway initiated in 2019. Phase 1 is complete, Phase 2 and 3 will occur in 2020.

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 1 because this is an active construction contract.

Project Financial Summary:			
Funded to Date:	$ 219,100	Expenditures through end of year:	$ 68,545
Spent to Date:	$ 38,545	2020 - 2024 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ 30,000	Total Project Estimate:	$ 218,545
Project Balance	$ 150,555	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Engineering	$ 5,000					$ 5,000
Inspection	$ 20,000					$ 20,000
Construction	$ 125,000					$ 125,000
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCC's	100%		$0
Total	100%		$0

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.

2020	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:** 10/15/19

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 as they are located in the public right of way. Based on the County's current design, approximately 1,000 feet of 8 and 12-inch waterline will need to be relocated along with both pressure reducing stations. The relocation work needs to be completed in front of the County's project scheduled for 2021 as the District is in conflict with the new bridge abutments and road realignment. The District has pre-purchased all necessary pressure reducing valves, isolation valves, fittings, and building enclosure for the relocation of both pressure reducing stations, and is working to complete the relocation design to be bid in early 2020.

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:	$ 105,000	Expenditures through end of year:	$ 95,776
Spent to Date:	$ 90,776	2020 - 2024 Planned Expenditures:	$ 425,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 520,776
Project Balance	$ 9,224	Additional Funding Required	$ 415,776

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 25,000					$ 25,000
Construction	$ 400,000					$ 400,000
TOTAL	$ 425,000	$ -	$ -	$ -	$ -	$ 425,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$415,776
Total	100%		$415,776

Funding Comments: Relocation of existing facilities.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18025

Project Name: DOT Construction Projects - Water

Project Category: State/County Road Projects

Priority: 1 **PM:** Delongchamp **Board Approval:** 10/15/19

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:	$ 90,669	Expenditures through end of year:	$ 81,127
Spent to Date:	$ 41,127	2020 - 2024 Planned Expenditures:	$ 125,000
Cash flow through end of year:	$ 40,000	Total Project Estimate:	$ 206,127
Project Balance	$ 9,542	Additional Funding Required	$ 115,458

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design And Coordination	$25,000	$25,000	$25,000	$25,000	$25,000	$ 125,000
TOTAL	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$15,458
Total	100%		$15,458

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19007

Project Name: EDM 1 / EDM 2 Intertie

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The District is in need of operational flexibility between El Dorado Main #1 and El Dorado Main #2 upstream of Reservoir 3. This intertie will afford the District the opportunity to move water through either transmission main during any necessary shutdowns for maintenance or repairs. The District will be in need of this intertie during the Camino Safety Project on Highway 50 as both El Dorado Main #1 and #2 will need to be relocated at different times during the construction process. This intertie will allow the District to keep water moving from Reservoir 2 to Reservoir 3 thus keeping every customer in water during these shutdowns.

Basis for Priority:

Ability to maintain critical water supply during scheduled and unscheduled work on EDM#1 and EDM#2 between Reservoir 2 and Reservoir 3.

Project Financial Summary:			
Funded to Date:	$ 1,225,843	Expenditures through end of year:	$ 847,644
Spent to Date:	$ 47,644	2020 - 2024 Planned Expenditures:	$ 400,000
Cash flow through end of year:	$ 800,000	Total Project Estimate:	$ 1,247,644
Project Balance	$ 378,199	Additional Funding Required	$ 21,801

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 350,000					$ 350,000
Construction Inspection	$ 50,000					$ 50,000
TOTAL	$ 400,000	$ -	$ -	$ -	$ -	$ 400,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$21,801
Total	100%		$21,801

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19008

Project Name: EDM 1 Relocate / Camino Safety

Project Category: State/County Road Projects

Priority: 1 **PM:** Delongchamp **Board Approval:** 10/15/19

Project Description:

The California Department of Transportation (Caltrans) is presently working on the "U.S. Highway 50 Camino Safety Project" to improve safety on Highway 50 in the Camino Corridor. The project will modify existing roadways to install a concrete median barrier, maintain existing accelertion/decelleration lanes at-grade intersections, construct a new mainline undercrossing to mitigate for loss of left-turn movements, construct access to the new mainline undercrossing for local connectivity, and construct a wildlife crossing. The project is in the Camino area, from Still Meadows Road to Upper Carson Road.

To accomodate the project the District transmission lines EDM1 and EDM2 will need to be relocated. The relocation will be included in Caltrans Project. The District is responsible for 100% of the relocation of EDM1 and Caltrans is responsible for 100% of the relocation of EDM2. Caltrans design engineer estimated the cost for EDM1 Relocation at $467,020. Design was complete in 2019, Caltrans is planning to start construction in early 2020.

Basis for Priority:

The District has facilities in both Right of Way and an Easment that will be impacted by the project. The District must pay a portion of the relocation costs. The Board has previously approved a Utility Agreement for the work.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 55,331
Spent to Date:	$ 19,331	2020 - 2024 Planned Expenditures:	$ 700,000
Cash flow through end of year:	$ 36,000	Total Project Estimate:	$ 755,331
Project Balance	$ (5,331)	Additional Funding Required	$ 705,331

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 500,000					$ 500,000
Construction Inspection	$ 200,000					$ 200,000
TOTAL	$ 700,000	$ -	$ -	$ -	$ -	$ 700,000

Funding Sources	Percentage	2020	Amount
Water Rates	100%		$705,331
Total	100%		$705,331

Funding Comments: Work involves relocation of existing facilities.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Diversion Gauging Measurement and Reporting Requirements

Project Category: Regulatory Requirements

Priority: 1 **PM:** Delongchamp **Board Approval:** 10/15/19

Project Description:

Senate Bill (SB) 88, signed by Governor Brown on June 24, 2015, 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 the District's water right portfolio and determined many of the facilities for the smaller water rights will require modification to add measurement and/or SCADA communication. In June of 2017, the District requested extensions for the remaining 4 diversions in need of gauging. These include Esmerelda Creek, Bull Creek, Bryant Creek (Ogilby), and No Name Creek. The extensions are good for 24 months. Esmerelda Creek, Bull Creek, and Bryant Creek (Ogilby) were completed in 2019. No Name Creek will be completed in 2020.

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:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 65,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 65,000
Project Balance	$ -	Additional Funding Required	$ 65,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
No Name Creek Design	$ 15,000					$ 15,000
No Name Creek Installation	$ 50,000					$ 50,000
TOTAL	$ 65,000	$ -	$ -	$ -	$ -	$ 65,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$65,000
Total	100%		$65,000

Funding Comments: Project consits of installation of new stream gauges to comply with new measurement requirements, project does not increase capacity.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Placerville Drive Hangtown Creek Bridge Replacement

Project Category: State/County Road Projects

Priority: 1 **PM:** Delongchamp **Board Approval:** 10/15/19

Project Description:

The City of Placerville will be replacing the existing Placerville Drive Hangtown Creek Bridge in 2022. Currently the District has an existing 8" waterline in the existing bridge to provide water to western placerville. The District will replace the existing line with a new line in the bridge concurrent with the City's project. This will be bid as part of the City's Project through an agreement with the City of Placerville.

Basis for Priority:

This considered priority 1 because the District must replace the waterline to maintain service to its customers.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 350,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 350,000
Project Balance	$ -	Additional Funding Required	$ 350,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 25,000	$ 50,000				$ 75,000
Construction			$ 275,000			$ 275,000
TOTAL	$ 25,000	$ 50,000	$ 275,000	$ -	$ -	$ 350,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$25,000
Total	100%		$25,000

Funding Comments: Project consists of replacing existing waterline with a new waterline within the new bridge.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Water Arc Flash Risk Assessment Program

Project Category: Regulatory Requirements

Priority: 1 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This program is intended to comply with regulatory requirements imposed by OSHA in regards to electrical safety of qualified workers. Majority of the electrical equipment in the District is no longer in compliance with the current regulatory requirements and National Fire Protection Association code (NFPA 70E 2018 Standard for Electrical Safety in the Workplace). In order for District to comply and avoid potential fines, Arc Flash Risk Assessment needs to be performed for each District facility that contains electrical hazards. Due to large amount of facilities and electrical equipment, this compliance requirement cannot be completed in a single year and must be separated into manageable portions. This program will assure District stays in compliance.

Basis for Priority:

Maintain electrical safety regulatory requirements of OSHA and NFPA70E. Determine replacement and improvement strategy to support regulatory compliance, improve service reliability and safety. This study will protect and preserve the health and safety of employees and the public.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 325,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 325,000
Project Balance	$ -	Additional Funding Required	$ 325,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Professional Services	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000
Capitalized Labor	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 75,000
						$ -
						$ -
TOTAL	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 325,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$65,000
			$0
			$0
Total	100%		$65,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 06004G

Project Name: SMUD / El Dorado Agreement Water Rights

Project Category: Regulatory Requirements

Priority: 2 **PM:** Poulsen **Board Approval:** 10/15/19

Project Description:

The Sacramento Municipal Utility District (SMUD) signed an agreement in 2005 with EID and other El Dorado County interests (El Dorado-SMUD Agreement), that allows for the use of SMUD's Upper American River Project (UARP) reservoirs for water storage and delivery. Specifically, the El Dorado-SMUD Agreement provides EID and the other El Dorado County Interests access to 30,000 acre feet of storage and delivery annually until 2030 and up to 40,000 acre feet thereafter. Additionally, the Agreement allows for the banking of up to 15,000 acre feet for drought carryover storage in dry year conditions. The Agreement requires EID and the other El Dorado County interests to first obtain water rights for this water. Concurrently with El Dorado-SMUD Agreement, EID and the other El Dorado County interests formed a joint powers authority called the El Dorado Water and Power Authority (EDWPA) for this purpose. EDWPA subsequently filed applications with the State Water Resources Control Board (SWRCB) seeking the necessary water rights. Members of EDWPA have shared the costs of pursuing these rights and EID's share has been approximately 36%, with El Dorado County and El Dorado County contributing approximately 32% each. In 2019, EDWPA was dissolved and EID is presently negotiating with El Dorado County and the El Dorado County Water Agency to determine how the agencies should collectively or individually pursue the El Dorado-SMUD Agreement water. The amounts below reflect what is anticipated to continue work on this project until a successor to EDWPA materializes. Further funding will be necessary at that point.

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:	$ 2,510,462
Spent to Date:	$ 2,485,462	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 2,560,462
Project Balance	$ 369,725	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$50,000	$ -	$ -	$ -	$ -	$ 50,000
Design						$ -
Construction						$ -
15,000 af acquisition						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	100%		$0
Total	100%		$0

Funding Comments:

2020	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:** Mueller **Board Approval:** 10/15/19

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 Department of Water Resources and Reclamation have both committed grants totalling over $2 million for construction of the project. The District approved the EIR in 2019 and selected the Blair Road alternative pipeline alignment. A CEQA lawsuit was subsequently filed on the project. Subsequent federal NEPA review is underway. Contingent on resolution of the lawsuit, construction is estimated to start mid-2020 and be complete in 2021.

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:	$ 2,416,198	**Expenditures through end of year:**	$ 2,300,942
Spent to Date:	$ 2,150,942	**2020 - 2024 Planned Expenditures:**	$ 9,440,000
Cash flow through end of year:	$ 150,000	**Total Project Estimate:**	$ 13,740,942
Project Balance	$ 115,256	**Additional Funding Required**	$ 9,324,744

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design/Environmental	$100,000					$ 100,000
Construction	$6,700,000	$3,600,000				$ 10,300,000
Construction Admin	$780,000	$260,000				$ 1,040,000
Subtotal	**$7,580,000**	**$3,860,000**				$ 11,440,000
Grant offsets	$2,000,000					$ 2,000,000
NET TOTAL	$ 5,580,000	$ 3,860,000	$ -	$ -	$ -	$ 9,440,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$5,464,744
Total	**100%**		**$5,464,744**

Funding Comments: The project replaces an existing facility, therefore is funded by water rates. The District has two remaining grants to offset future construction costs totaling approximately $2 million. In addition, $1.4 million in funding from EDCWA and the Carson Creek conservation charge has/will be collected to offset total project costs.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15009

Project Name: Sly Park Intertie Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

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 Jenkinson Reservoir 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) confirmed the previous engineering analysis that even with 13-30% wall thickness loss. An updated BODR in 2018 includes 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, rehabilitation options, direct 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. The estimated pipeline construction project cost at this time is $24 million for an open cut replacement based on the December 2018 Draft Evaluation of Rehabilitation Alternatives Technical Memorandum. 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. Construction is tentatively planned to begin in 2024, therefore partial construction costs are included in the cash projections below.

Basis for Priority:

Replacement of the pipeline and installation of a new pump station will 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:	$ 599,552	**Expenditures through end of year:**	$ 542,606
Spent to Date:	$ 542,606	**2020 - 2024 Planned Expenditures:**	$ 13,855,000
Cash flow through end of year:		**Total Project Estimate:**	$ 14,397,606
Project Balance	$ 56,946	**Additional Funding Required**	$ 13,798,054

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Engineering	$5,000	$50,000	$300,000	$ 300,000		$ 655,000
Environmental		$ 50,000	$ 150,000	$ 150,000		$ 350,000
Right of Way			$ 50,000	$ 50,000		$ 100,000
Construction Management/Inspection					$ 750,000	$ 750,000
Construction					$ 12,000,000	$ 12,000,000
TOTAL	$ 5,000	$ 100,000	$ 500,000	$ 500,000	$ 12,750,000	$ 13,855,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	**100%**		**$0**

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 15024

Project Name: Folsom Lake Intake Improvements Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Money **Board Approval:** 10/15/19

Project Description:

The Folsom Lake Raw Water Intake delivers EID water supplied from Folsom Lake to the El Dorado Hills Water Treatment Plant (EDHWTP) and is critical to service reliability for the El Dorado Hills service area. The intake needs to be upgraded to provide for reliability, long-term operational needs, and temperature control. In 2005, the District entered into a cooperation agreement with the U.S. Bureau of Reclamation for the design and construction of a Temperature Control Device for the benefit and propagation of Chinook salmon and steelhead trout in the lower American River. The federal funding amount, which is specified for the District's facility pursuant to federal legislation, was fifty percent of the eligible costs not to exceed $6,250,000. Minimum federal funding of $5.7 million is included, and staff is seeking additional funding appropriations based on final project elements. The Board approved a Mitigated Negative Declaration for the project in 2019. Staff is anticipating a contract award in early 2020 after further design refinements and environmental permits are completed. Construction is anticipated to run through 2020 with final completion in late 2021.

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:	$ 1,493,464	Expenditures through end of year:	$ 1,427,011
Spent to Date:	$ 1,427,011	2020 - 2024 Planned Expenditures:	$ 17,700,000
Cash flow through end of year:		Total Project Estimate:	$ 19,127,011
Project Balance	$ 66,453	Additional Funding Required	$ 17,633,547

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design/Environmental	$ 100,000	$ 100,000				$ 200,000
Construction management	$ 250,000	$ 350,000				$ 600,000
Construction Costs	$ 7,300,000	$ 15,300,000				$ 22,600,000
USBR Cooperative Agreement Offset	$ (1,000,000)	$ (4,700,000)				$ (5,700,000)
TOTAL	$ 6,650,000	$ 11,050,000	$ -	$ -	$ -	$ 17,700,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	67%		$4,410,976
Water FCCs	33%		$2,172,570
Total	100%		$6,583,547

Funding Comments: Funding ratio is based on existing installed capacity (16 mgd) compared to the new capacity of 24 mgd.

2020	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:** 10/15/19

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 made available by the Sacramento Municiple Utilities District under the El Dorado-SMUD Cooperation Agreement, and 2) Permit 21112. To take all or any portion of Permit 21112 water upstream of Folsom Reservoir, EID must successfully petition the State Water Resources Control Board (SWRCB) for permit changes to add points of diversion and reinversion. 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 for CEQA compliance and Petition prosecution in 2020-2021. Any post-SWRCB 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 in 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:	$ 242,409	Expenditures through end of year:	$ 163,533
Spent to Date:	$ 113,533	2020 - 2024 Planned Expenditures:	$ 500,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 663,533
Project Balance	$ 78,876	Additional Funding Required	$ 421,124

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Petition Prep						$ -
CEQA/Environmental	$ 300,000					$ 300,000
Petition Prosecution		$ 100,000				$ 100,000
SWRCB Hearing		$ 100,000				$ 100,000
TOTAL	**$ 300,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ 500,000**

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	100%		$221,124
Total	**100%**		**$221,124**

Funding Comments:

2020	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:	10/15/19

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 water tanker truck to bring water from elsewhere within the District's distribution system. New facilities will include will have two low lift pumps with a capacity of 100 gpm each that will be pumped through a sand separator and into a small tank, and then two 100 GPM high lift pumps to lift water to the treatment plant.

Installation of the facilities will involve minor piping to tie-in the new 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 placed inside of its own building adjacent to the new pump station. The proposed project will significantly improve the reliability of the water supply year round and allow operational flexibility during drought conditions. Design should be completed by late 2019 and environmental permits will soon follow. Construction of the new station is proposed to be in 2020 provided all permits have been obtained.

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:	**$ 186,500**	**Expenditures through end of year:**	**$ 138,990**
Spent to Date:	**$ 88,990**	**2020 - 2024 Planned Expenditures:**	**$ 305,000**
Cash flow through end of year:	**$50,000**	**Total Project Estimate:**	**$ 603,990**
Project Balance	**$ 47,511**	**Additional Funding Required**	**$ 257,490**

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 15,000					$ 15,000
Construction	$ 450,000					$ 450,000
Subtotal	**$ 465,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 465,000**
Grant Offset	$ 160,000					$ 160,000
NET TOTAL	**$ 305,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 305,000**

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$257,490
Total	**100%**		**$257,490**

Funding Comments: Annual expenditures reflect cost offset by Prop 84 grant ($160,000).

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17011

Project Name: Crestview Pump Station Replacement Project

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Wilson	Board Approval:	10/15/19

Project Description:

The District has numerous distribution pump stations throughout the water service area that operate to increase pressures to customers at higher elevations. The District has 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.

The Crestview Pump Station is in need of replacement due to maintenance issues with an existing buried pneumatic tank which was not able to be certified for the operating pressure due to the inability to examine the entire structure. The existing single pump is also located within a confined space and is a potential maintenance hazard. Without the benefit of a second pump 25 customers are taken out of water for any regular maintenance.

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:	$ 6,737
Spent to Date:	$ 6,737	2020 - 2024 Planned Expenditures:	$ 275,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 281,737
Project Balance	$ 43,263	Additional Funding Required	$ 231,737

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 25,000					$ 25,000
Construction		$ 250,000				$ 250,000
TOTAL	$ 25,000	$ 250,000	$ -	$ -	$ -	$ 275,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17014

Project Name: Green Valley PRS #2

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

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. The District has a pressure reducing station program that identifies 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. The Green Valley Pressure Reducing Station #2 is in need of replacement due to maintenance issues on infrastructure that has outlived its useful life. Additionally, the valves are located below ground and require a confined space permit to access. This project will move the valves above ground to allow for safe access and maintenance. The District has completed the design for the station and will be bidding the project to start construction before the end of 2019.

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:	$ 64,287
Spent to Date:	$ 39,287	2020 - 2024 Planned Expenditures:	$ 80,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 144,287
Project Balance	$ (14,287)	Additional Funding Required	$ 94,287

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 80,000					$ 80,000
TOTAL	$ 80,000	$ -	$ -	$ -	$ -	$ 80,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$94,287
Total	100%		$94,287

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17015

Project Name: Lakeview PRS #1

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

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. The District has a pressure reducing station program that identifies 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. The Lakeview Pressure Reducing Station #1 is in need of replacement due to maintenance issues for infrastructure that has outlived its useful life. Additionally, the valves are located below ground and require a confined space permit to access. This project will move the valves above ground to allow for safe access and maintenance. Furthermore, the station needs to be relocated into right-of-way as it is currently located on El Dorado Hills CSD property. The District has completed the design for the station and will be bidding the project to start construction before the end of 2019.

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:	$ 65,893
Spent to Date:	$ 40,893	2020 - 2024 Planned Expenditures:	$ 90,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 155,893
Project Balance	$ (15,893)	Additional Funding Required	$ 105,893

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 90,000					$ 90,000
TOTAL	$ 90,000	$ -	$ -	$ -	$ -	$ 90,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$105,893
Total	100%		$105,893

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17016

Project Name: El Dorado Main #1 PRS #5

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The El Dorado Main #1 Pressure Reducing Station #5 (EDM1PRS5) is in need of replacement control and isolation valves due to failure issues from operating infrastructure that has outlived its useful life. Additionally, EDM1PRS5 is not equipped with bypass capabilities resulting in large area water service outages in order to complete maintenance activities. The station will be rehabilitated to include two new sleeve valves, new isolation valves up stream and down stream, and complete recoating of all piping and the vault interior. The rehabilitation of this station will allow the District to re-operate EDM#1 to fill Reservoir 3, Reservoir 4, and Reservoir 5 to help take demand off of EDM #2. Currently, EDM #2 is in lead to fill each of these Reservoirs and EDM #1 is in lag, however EDM#1 PRS#5 is not operational as the valves have completely failed. The District is nearly complete with the design for the station and will be bidding the project this winter to complete construction by the summer of 2019.

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:	$ 369,876	Expenditures through end of year:	$ 169,003
Spent to Date:	$ 119,003	2020 - 2024 Planned Expenditures:	$ 550,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 719,003
Project Balance	$ 200,873	Additional Funding Required	$ 349,127

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design						$ -
Construction	$ 550,000					$ 550,000
TOTAL	$ 550,000	$ -	$ -	$ -	$ -	$ 550,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$349,127
Total	100%		$349,127

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17031

Project Name: Forest Road Waterline Relocate

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

On June 14, 2017 the District had a 6" AC waterline break in the shoulder on Forest Road crossing an approximate 72" County culvert. The line break caused one of two wood retaining walls on the south side of Forest Road to become damaged and un-reparable. The District has been working closely with El Dorado County to form a plan for replacement of the retaining wall. Due to the condition of the other wood retaining wall near the culvert the District is advocating to move approximately 120 linear feet of pipe into Forest Road to avoid any future damages to its waterline. The District will repair the retaining wall in accordance with the directions as outlined from the County. District crews have completed the installation of the pipeline and are scheduled to begin construction of the retaining wall in the summer of 2019 once the creeks have stopped flowing water.

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:	$ 237,000	Expenditures through end of year:	$ 147,214
Spent to Date:	$ 97,214	2020 - 2024 Planned Expenditures:	$ 90,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 237,214
Project Balance	$ 89,786	Additional Funding Required	$ 214

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 50,000					$ 50,000
Final Paving	$ 40,000					$ 40,000
TOTAL	$ 90,000	$ -	$ -	$ -	$ -	$ 90,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$214
			$0
			$0
Total	100%		$214

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 17048

Project Name: Strawberry Raw Water Pump Station

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

This station has numerous freeze issues and failing pumps that have outlived their useful lives. The pump station is approximately 250 feet away from the water treatment plant, is only accessible on foot, and is not on the District's property nor does it benefit from a documented easement. District staff over the past few years has spent increasing hours to keep the existing station operational. The station is currently in design to determine the exact layout of the new station in order to determine the needed environmental permits along the river. Additionally, the District is working to adjust the water diversion right from the existing station to the District's property where the new station will be constructed. Construction is planned in 2022 provided all permits are approved and funding is available.

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:	$ 99,000	Expenditures through end of year:	$ 62,845
Spent to Date:	$ 52,845	2020 - 2024 Planned Expenditures:	$ 450,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 512,845
Project Balance	$ 36,155	Additional Funding Required	$ 413,845

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 25,000	$ 25,000				$ 50,000
Enviornmental		$ 50,000				$ 50,000
Strawberry Raw Water/Treatment			$ 350,000			$ 350,000
TOTAL	$ 25,000	$ 75,000	$ 350,000	$ -	$ -	$ 450,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18002

Project Name: Sanders Road Waterline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The waterline replacement 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. The District has completed numerous leak repairs to a section of waterline in Sanders Drive in Pollock Pines. The repair bands in place are on a stretch of approximately 100 linear feet of line that upon the last repair does not appear to have much structural integrity left. District staff is advocating the replacement of this section of waterline with approximately 100 linear feet of new 6" mainline with in house crews.

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:	$ 50,000	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 70,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 70,000
Project Balance	$ 50,000	Additional Funding Required	$ 20,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 10,000				$ 10,000
Construction		$ 60,000				$ 60,000
TOTAL	$ -	$ 70,000	$ -	$ -	$ -	$ 70,000

Estimated Funding Sources	Percentage	2020 Amount
Water Rates	100%	$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.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18007

Project Name: Pony Express 8-Inch Waterline Replacement Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The waterline replacement 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. The District has completed numerous leak repairs on a section of the 8" outside diameter steel (ODS) waterline in Pony Express Trail in Pollock Pines. Recently the District suffered another larger leak (approximately 3,000 GPM) on January 19, 2018. The road was damaged as part of the leak and the District is responsible to repave the portion of damaged road. District staff has reviewed the site with the County and made the determination that it is in the District's best interest to install new 8" ductile iron pipe (DIP) in place of the existing ODS. The replacement will span approximately 300 linear feet of new mainline and can be completed by removing the existing ODS pipe and replacing with 8" DIP. This work will be designed in house and constructed by in house crews in the spring of 2020.

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:	$ 50,000	Expenditures through end of year:	$ 805
Spent to Date:	$ 805	2020 - 2024 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 100,805
Project Balance	$ 49,195	Additional Funding Required	$ 50,805

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 10,000					$ 10,000
Construction	$ 90,000					$ 90,000
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$50,805
Total	100%		$50,805

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.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18018

Project Name: Easy Street Waterline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The waterline replacement 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. The District has reviewed all options for the main replacement list determined by operations and engineering and decided that the best use of funding would be the replacement of Easy Street. The District has experienced approximately 11 leaks over the past 15 years on the 3,700 feet of 6" outside diameter steel, 4" and 6" asbestos cement pipe, in Easy Street and surrounding streets between Ridgeway Drive and Teal Lane. The District has reviewed the current climate for mainline installation and pavement restoration and the current cost is approximately $340 a linear foot.

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:	$ 50,000	Expenditures through end of year:	$ 22,085
Spent to Date:	$ 7,085	2020 - 2024 Planned Expenditures:	$ 1,450,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 1,472,085
Project Balance	$ 27,915	Additional Funding Required	$ 1,422,085

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 50,000				$ 50,000
Construction			$ 1,300,000			$ 1,300,000
Construction Inspection			$ 100,000			$ 100,000
TOTAL	$ -	$ 50,000	$ 1,400,000	$ -	$ -	$ 1,450,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$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.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18036

Project Name: Francisco PRS # 1 Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

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. The District has a pressure reducing station program that identifies 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. The Francisco Pressure Reducing Station #1 is in need of replacement due to maintenance issues on infrastructure that has outlived its useful life. Additionally, the valves are located below ground and require a confined space permit to access. This project will move the valves above ground to allow for safe access and maintenance. This project will move the valves above ground to allow for safe access and maintenance. The District has completed the design for the station and will be bidding the project to start construction before the end of 2019.

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:	$ 35,000	Expenditures through end of year:	$ 38,667
Spent to Date:	$ 13,667	2020 - 2024 Planned Expenditures:	$ 80,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 118,667
Project Balance	$ (3,667)	Additional Funding Required	$ 83,667

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction	$ 80,000					$ 80,000
TOTAL	$ 80,000	$ -	$ -	$ -	$ -	$ 80,000

Funding Sources	Percentage	2020	Amount
Water Rates	100%		$83,667
Total	100%		$83,667

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

2020 CAPITAL IMPROVEMENT PLAN Program: Water

Project Number: 18040

Project Name: Forebay Road Waterline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The waterline replacement 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. The District has reviewed all options for the main replacement list determined by operations and engineering and decided that the best use of funding would be the replacement of the 6" and 8" in Forebay Road. The District has experienced approximately 9 leaks over the past 15 years on the 5,000 feet of 6" outside diameter steel, 6" and 8" asbestos cement pipe, in Forebay Road and surrounding streets between Pony Express Trail and Deep Haven Road. The District has reviewed the current climate for mainline installation and pavement restoration and the current cost is approximately $340 a linear foot.

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:	$ 150,000	**Expenditures through end of year:**	$ 1,020
Spent to Date:	$ 1,020	**2020 - 2024 Planned Expenditures:**	$ 1,900,000
Cash flow through end of year:	$ -	**Total Project Estimate:**	$ 1,901,020
Project Balance	$ 148,980	**Additional Funding Required**	$ 1,751,020

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 50,000				$ 50,000
Construction			$ 1,700,000			$ 1,700,000
Construction Inspection			$ 150,000			$ 150,000
TOTAL	$ -	$ 50,000	$ 1,850,000	$ -	$ -	$ 1,900,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$0
Total	**100%**		**$0**

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN Program: Water

Project Number: 18048

Project Name: Critical Water Facility Generators

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

Due to re-operation of the power grid by PG&E due to wild fire issues the District is in need of adding six emergency generators and associated power equipment to critical water facilities. The District does not maintain adequate emergency back-up power for many of the water pump stations. The facilities that are in immediate need of backup power include North Canyon Pump Station, Gold Ridge Pump Station, Moosehall Reservoir, Sportsman Pump Station, Ridgeview Pump Station, and Monte Vista Pump Station. The addition of these generators will provide for adequate backup power to maintain adequate water supply at times of prolonged power outages during the fire season.

Basis for Priority:

Ability to maintain critical water supply during fire season due to unreliable power source from PG&E.

Project Financial Summary:			
Funded to Date:	$ 934,502	Expenditures through end of year:	$ 864,212
Spent to Date:	$ 714,212	2020 - 2024 Planned Expenditures:	$ 350,000
Cash flow through end of year:	$ 150,000	Total Project Estimate:	$ 1,214,212
Project Balance	$ 70,290	Additional Funding Required	$ 279,710

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design & Consulting	$ 50,000					$ 50,000
Construction	$ 300,000					$ 300,000
TOTAL	$ 350,000	$ -	$ -	$ -	$ -	$ 350,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$279,710
Total	100%		$279,710

Funding Comments: Work involves planning the upgrade of existing facilities for reliability of service.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 18065

Project Name: El Dorado Hills Water Treatment Plant Automation Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The existing five automation controllers at the El Dorado Hills Water Treatment Plant have outlived their useful lives. This project includes replacing the existing SCADA equipment and SCADA programming and configuration changes to meet the needs of the new equipment configuration. The proposed equipment is obsolete, parts are limited or no longer available and not supported by the manufacturer. The following PLCs will be removed and incorporated into the current Control Logix Master Plant PLC: Filters 1 & 2 PLC (PLC 5) , Filters 3 & 4 PLC (PLC 5) , Filter 5 & 6 PLC (PLC 5) , GE PLC and remote racks and the local interface panel in the control room. Additionally, in this project the Control Logix CPUs will need to be upgraded to a redundant system and replace (2) of the problematic 5555 series controllers. The plant PLC network will need to be evaluated and modified to secure the Salmon Falls network radio connection and to accommodate the new PLC I/O racks. Once the automation issues are corrected, the SCADA graphical interface will need to be modified to match the new setup and correct the current visualization short falls. This work will involve the modifications of 30 screens. Replacement of the hardware will warrant reconfiguration of the HMI and rewriting the control descriptions for this facility. Furthermore, the project will construct a proper enclosure around the existing VFD's that will include a single air conditioning unit to keep them within operating range. The District has been forced to replace at least 5 panel air condition units over the past 10 years since they were installed. Staff is recommending construction in 2021 as spreading the construction over multiple years is not cost effective due to complexity and interdependency of the system. Many of the controllers and programs have such interdependencies that do not allow replacing one part of the system without requiring major modifications to the other existing systems. The construction estimate in 2020 is a 10% estimate based on the proposed scope of work, and a revised estimate will be presented in the next CIP with a refined cost based on the completed design.

Basis for Priority:

This hardware is failing and has been a service reliability and maintenance issue. This equipment is life cycled out. The original installation was in 1994. This equipment is at a life cycle point where it now presents a service reliability risk to this service area.

Project Financial Summary:			
Funded to Date:	$ 244,400	Expenditures through end of year:	$ 106,222
Spent to Date:	$ 56,222	2020 - 2024 Planned Expenditures:	$ 1,750,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 1,856,222
Project Balance	$ 138,178	Additional Funding Required	$ 1,611,822

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design & Consulting	$ 50,000					$ 50,000
Construction		$ 1,700,000				$ 1,700,000
TOTAL	$ 50,000	$ 1,700,000	$ -	$ -	$ -	$ 1,750,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19006

Project Name: AMR and Small Meter Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Heape **Board Approval:** 10/15/19

Project Description:

Implementation - This project replaces old, inaccurate, or broken small and large meters. It also 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 AB 3206 and all provisions of 23 CCR § 700. SAFETY/SECURITY: This project reduces employee exposure to injury . As of December 31, 2018 there are 27,592 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.

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:	$ 150,000	Expenditures through end of year:	$ 150,000
Spent to Date:	$61,832	2020 - 2024 Planned Expenditures:	$ 750,000
Cash flow through end of year:	$ 88,168	Total Project Estimate:	$ 900,000
Project Balance	$ -	Additional Funding Required	$ 750,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Implementation	$150,000	$150,000	$150,000	$150,000	$150,000	$ 750,000
TOTAL	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 750,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$150,000
Total	100%		$150,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19009

Project Name: Integrated Water Resources Master Plan Update

Project Category: Master Planning

Priority: 2 **PM:** Mueller **Board Approval:** 10/15/19

Project Description:

The District's Integrated Water Resources Master Plan was approved in 2013 and is due for an update. Staff envisions updates to the existing plan will focus on review and adjustment of water demands and growth rates building off the 2015 Urban Water Management Plan and consideration of future State-driven conservation mandates, and updates to the timing and costs of large infrastructure components such as the White Rock penstock diversion. Existing initiatives such as the P21112 water rights change in point of diversion will be incorporated. With an improved water model, a review of existing and future capacity limitations in the water transmission and distribution systems will also be reviewed.

Basis for Priority:

Updates to master plans are needed periodically to ensure the District is planning water supply and infrastructure needs appropriately.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 250,000					$ 250,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 250,000	$ -	$ -	$ -	$ -	$ 250,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	100%		$250,000
			$0
			$0
Total	100%		$250,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19010

Project Name: Valley View Pump Station #3

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The District has numerous distribution pump stations throughout the water service area that operate to increase pressures to customers at higher elevations. The District has 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.

The Valley View Pump Station is in need of adding a third pump due to increased demands in order to meet additional irrigation demand for the recycled water system. The pump station was designed to accommodate a third pump and the District has completed the purchase of the third pump and installed the concrete for the pump pedestal. The District is working on purchasing all the mechanical discharge piping for the addition of the pump. Furthermore, the District will need to relocate the flow meter out of the building due to space limitations. Finally, an electrical design will be completed this winter for implementation in the spring in advance of the irrigation season.

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:	$ 238,644	Expenditures through end of year:	$ 44,732
Spent to Date:	$ 4,732	2020 - 2024 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 40,000	Total Project Estimate:	$ 144,732
Project Balance	$ 193,912	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 20,000					$ 20,000
Construction	$ 70,000					$ 70,000
Construction Inspection	$ 10,000					$ 10,000
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2020	Amount
FCCs	100%		$0
Total	100%		$0

Funding Comments: Work involves upgrading existing facilities for increased capacity to meet future demands.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19016

Project Name: Main Ditch Litigation

Project Category:

Priority: 2 **PM:** Poulsen **Board Approval:** 10/15/19

Project Description:

On April 22, 2019, the District adopted an Environmental Impact Report (EIR) for the Upper Main Ditch Piping Project, Project No. 11032. One month later, the local opposition group, Save the El Dorado Canal (STC), filed suit in El Dorado County Superior Court challenging the validity of the EIR. The District intends to defend the lawsuit and expects an initial trial court decision in 2020. Any subsequent appeal would require additional funding.

Basis for Priority:

This involves ongoing litigation.

Project Financial Summary:			
Funded to Date:	$ 156,000	Expenditures through end of year:	$ 51,938
Spent to Date:	$ 1,938	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 101,938
Project Balance	$ 104,062	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 100,000					$ 100,000
Design						$ -
Construction						$ -
Litigation						$ -
TOTAL	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2020 Amount
Water rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: 19019

Project Name: Strawberry Self Cleaning Screens

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The District currently has two self-cleaning screens for the Strawberry Water Treatment Plant that filter water prior to entering the membrane plant. The existing screens are leaking and cannot be rebuilt. During last year's State inspection the screens were identified as a deficiency as they have various leaks. The District is working on a design that will include one low pressure screen to better increase efficiency in the plant. The screen will be designed for the low pressure application and will have an electric motor to assist cleaning during backwash cycles. The new single filter will backwash less and minimize the volume of water that is currently present in the backwash tank at the plant reducing operating costs. This project will be constructed by in house crews including all mechanical piping and electrical work.

Basis for Priority:

Replacement of inefficient and obsolete infrastructure will support regulatory compliance, service reliability, and reduce maintenance costs.

Project Financial Summary:			
Funded to Date:	$ 25,000	Expenditures through end of year:	$ 25,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 35,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 60,000
Project Balance	$ -	Additional Funding Required	$ 35,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 5,000					$ 5,000
Construction	$ 30,000					$ 30,000
TOTAL	$ 35,000	$ -	$ -	$ -	$ -	$ 35,000

Funding Sources	Percentage	2020 Amount
Water Rates	100%	$35,000
		$0
		$0
Total	100%	$35,000

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Construction Equipment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Odzakovic **Board Approval:** 10/15/19

Project Description:

This project will provide funding to purchase new equipment that will be needed for a new construction crew to work on capital improvement projects moving forward. This equipment includes the purchase of a new backhoe, backhoe trailer, and a boring machine with trailer. The backhoe will be needed to excavate bore pits from the main to the meter when replacing the polyethylene services with coated copper pipe. The boring machine will expedite the installation of the new service line and will provide a smooth trench to pull the new copper service from the main to the customer's meter. The backhoe will be used to complete other capital improvement projects such as pump station upgrades and mainline replacement.

Basis for Priority:

Improve efficiency and provides equipment to complete work for capital improvement projects.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 395,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 395,000
Project Balance	$ -	Additional Funding Required	$ 395,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Backhoe	$ 150,000					$ 150,000
Backhoe Trailer	$ 70,000					$ 70,000
Boring Machine And Trailer	$ 175,000					$ 175,000
TOTAL	$ 395,000	$ -	$ -	$ -	$ -	$ 395,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$395,000
Total	100%		$395,000

Funding Comments: Work involves purchase of new equipment to complete capital improvement projects.

2020	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:** 10/15/19

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:		2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Facility Improvements			$ 100,000	$ 100,000	$ 100,000	$ 300,000
TOTAL	$ -	$ -	$ 100,000	$ 100,000	$ 100,000	$ 300,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Meter Test Bench Replacement

Project Category: Regulatory Requirements

Priority: 2 **PM:** Heape **Board Approval:** 10/15/19

Project Description:

Implementation - This project replaces an old, inaccurate, un-certified meter test station. The proposed test bench has the ability to test multiple small and large meters simultaneously. It also includes a water recirculation system to ensure compliance with local, state and/or Federal laws and regulations. It would also provide a reduction in consumption of test water, and a corresponding reduction in water dumped to waste after each test. It will provide a positive customer perception as the District sets an example for water conservation practices. The project is MISSION REQUIRED due to increased emphasis on water loss reduction through annual validated water audits. The water test bench will allow the District to determine the level of accuracy of our customer side meters, reduce apparent water loss due to inaccurate customer meters, and recover revenue lost due to those inaccuracies. The LIABILITY/RISK to the District if this project is not implemented includes lost revenue and inaccurate projections of real and apparent losses. This will negatively impact the decision making processes regarding reducing water losses within the District's control. REGULATORY: Continued implementation of water loss reduction measures, with AWWA recommendations as set forth in the M36 Manual, Water Audits and Loss Control Programs, and reflecting annual improvements in the District's data validity that is measured within the water audit validation process to maintain compliance with AB 3206. SAFETY/SECURITY: This project reduces employee exposure to injury by providing current updated and certified test equipment, as well as updating the test facilities located at Reservoir 7 in year one. Project funding for year two targets portable meter test devices for testing large meters in the field.

Basis for Priority:

Reinstating our meter test program which was eliminated in 2009 during the District's reduction in force. Increasing the accuracy of our customer meters which in turn should increase commodity revenue, and non-compliance AB 3206.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 280,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 280,000
Project Balance	$ -	Additional Funding Required	$ 280,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Implementation	$250,000	$30,000				$ 280,000
TOTAL	$ 250,000	$ 30,000	$ -	$ -	$ -	$ 280,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$250,000
Total	100%		$250,000

Funding Comments:

2020 **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:** Wilson **Board Approval:** 10/15/19

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:		**Expenditures through end of year:**	$ -
Spent to Date:		**2020 - 2024 Planned Expenditures:**	$ 2,225,000
Cash flow through end of year:		**Total Project Estimate:**	$ 2,225,000
Project Balance	$ -	**Additional Funding Required**	$ 2,225,000

Description of Work	**Estimated Annual Expenditures**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
EDM2 PRS1	**$50,000**					**$ 50,000**
RES2-6 Inlet From MH	**$100,000**	**$600,000**				**$ 700,000**
EDM2 PRS2		**$50,000**				**$ 50,000**
DSM PRS22 Control		**$60,000**				**$ 60,000**
EDH PRS3		**$50,000**				**$ 50,000**
Greenstone Tank PRS		**$75,000**				**$ 75,000**
LL PRS1		**$75,000**				**$ 75,000**
EDM2 PRS3			**$50,000**			**$ 50,000**
EDM2 PRS4			**$50,000**			**$ 50,000**
EDM2 PRS5			**$50,000**			**$ 50,000**
EDM1 PRS13 RES 6			**$100,000**	**$600,000**		**$ 700,000**
Arrowbee PRS1					**$65,000**	**$ 65,000**
EDM2 PRS6					**$100,000**	**$ 100,000**
PVS PRS1					**$75,000**	**$ 75,000**
HEP PRS1					**$75,000**	**$ 75,000**
POM PRS5						**$ -**
TOTAL	**$ 150,000**	**$ 910,000**	**$ 250,000**	**$ 600,000**	**$ 315,000**	**$ 2,225,000**

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Water Rates	100%		$150,000
Total	**100%**		**$150,000**

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

2020	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:** 10/15/19

Project Description:

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

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 1,300,000
Cash flow through end of year:		Total Project Estimate:	$ 1,300,000
Project Balance	$ -	Additional Funding Required	$ 1,300,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 100,000				$ 100,000
Ridgeview			$ 250,000			$ 250,000
Oak Ridge				$ 100,000	$ 850,000	$ 950,000
Monte Vista						$ -
Quartz						$ -
Swansboro						$ -
Upper Rancho Del Sol						$ -
TOTAL	$ -	$ 100,000	$ 250,000	$ 100,000	$ 850,000	$ 1,300,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Reservoir A WTP PLC Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project involves replacing 7 antiquated and end of life cycle programmable logic controllers (PLC) at the Reservoir A facility. These PLC units have exceeded 15 years beyond the end of life cycle. The units control the process at facility that supplies potable water to majority of our customers.

Basis for Priority:

The PLC units have been experiencing component failure due to age and condition. The complete failure of the PLC poses a great risk of interrupting service to our customers. New parts are not available and operating system is no longer supported.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 445,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 445,000
Project Balance	$ -	Additional Funding Required	$ 445,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
RES A Design	$ 75,000					$ 75,000
Capitalized Labor	$ 35,000	$ 35,000				$ 70,000
RES A Construction		$ 300,000				$ 300,000
TOTAL	$ 110,000	$ 335,000	$ -	$ -	$ -	$ 445,000

Funding Sources	Percentage	2020	Amount
Water rates	100%	$	110,000
			$0
			$0
Total	100%		$110,000

Funding Comments:

2020	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:** 10/15/19

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:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 370,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 370,000
Project Balance	$ -	Additional Funding Required	$ 370,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Facility Improvements		$ 100,000				$ 100,000
Design SCADA Improvements			$ 45,000			$ 45,000
Construction SCADA Improvements				$ 225,000		$ 225,000
TOTAL	$ -	$ 100,000	$ 45,000	$ 225,000	$ -	$ 370,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: SCADA Water Hardware Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This funding is designated to be a rolling CIP to replace end of life cycle SCADA hardware District wide. This program would focus on replacing and reprogramming of the end of life PLC hardware and associated SCADA reconfigurations. Many sites are beyond the 15 year life expectancy for the PLC hardware.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Hardware	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 100,000
Installation	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
Professional Services	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
						$ -
						$ -
						$ -
TOTAL	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000

Estimated Funding Sources	Percentage	2020 Amount
Water Rates	100%	$50,000
		$0
		$0
Total	100%	$50,000

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Serviceline Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

This program consists of targeted replacement of leaking water service lines throughout the District. Replacing leaking and substandard service lines with new copper water service tubing will reduce the potential for contamination of the drinking water supply, increase reliability, reduce maintenance expenditures, and decrease losses. Serviceline projects are prioritized with operations and engineering staff based on frequency of leaks and costs of repairs. These estimates and project locations are subject to change as the projects are better defined.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 23,450,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 23,450,000
Project Balance	$ -	Additional Funding Required	$ 23,450,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000
Construction (Various)	$ 4,000,000	$ 4,800,000	$ 4,800,000	$ 4,800,000	$ 4,800,000	$ 23,200,000
TOTAL	$ 4,050,000	$ 4,850,000	$ 4,850,000	$ 4,850,000	$ 4,850,000	$ 23,450,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$4,050,000
Total	100%		$4,050,000

Funding Comments: Project has no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Sly Park Dam Facility Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The project includes design and installation of more reliable power distribution for the facility. The site currently has multiple installations dating back to 1953 and is no longer in compliance with National Fire Protection Agency. The site requires a new PG&E meter and main, automatic transfer switch, and panelboard for distribution. Furthermore, the District is in need of replacing the hydraulic lines for the isolation valves at the dam. This will include the replacement of hydraulic fluid and any necessary upgrades to provide reliable isolation moving forward.

Basis for Priority:

The project will improve reliability of a critical water facility.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 65,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 65,000
Project Balance	$ -	Additional Funding Required	$ 65,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 25,000				$ 25,000
Construction		$ 35,000				$ 35,000
Capitalized Labor		$ 5,000				$ 5,000
						$ -
TOTAL	$ -	$ 65,000	$ -	$ -	$ -	$ 65,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$0
Total	100%		$0

Funding Comments: Project involves maintenance to extend the life of existing assets, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2020	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:** 10/15/19

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:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 895,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 895,000
Project Balance	$ -	Additional Funding Required	$ 895,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Facility Improvements				$ 100,000	$ 100,000	$ 200,000
Access Road Restoration		$ 300,000				$ 300,000
Design SCADA Improvements		$ 45,000				$ 45,000
Construction SCADA Improvements			$ 350,000			$ 350,000
TOTAL	$ -	$ 345,000	$ 350,000	$ 100,000	$ 100,000	$ 895,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

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

2020	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:** 10/15/19

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 8 to 58 years of age, most of which were constructed in the last 18 years as part of the District line and cover program. Additionally, the District operates 7 floating cover drinking water reservoirs ranging in age from 26 to 33 years of age. This program is to identify specific tanks and reservoirs to rehabilitate, replace, or upgrade to maintain service reliability throughout the District. Program management expenditures identified include prioritizing and designing each tank and reservoir improvement project. Actual replacement costs for each individual tank and reservoir will be brought to the Board for specific approval.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Design/Planning		$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000
Reservoir 2A/2B Rafter Bearing Plate	$ 100,000	$ 100,000				$ 200,000
Greenstone (Abandonment)		$ 150,000				$ 150,000
Reservoir 1 Aluminum Dome			$ 2,500,000			$ 2,500,000
Reservoir 1 Contact Tank			$ 1,000,000			$ 1,000,000
Moose Hall Aluminum Dome				$ 1,750,000		$ 1,750,000
Reservoir 6					$ 2,800,000	$ 2,800,000
Ridgeview						$ -
Dolomite						$ -
TOTAL	$ 100,000	$ 450,000	$ 3,600,000	$ 1,850,000	$ 2,900,000	$ 8,900,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$100,000
Total	100%		$100,000

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

2020	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:** 10/15/19

Project Description:

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

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 10,200,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 10,200,000
Project Balance	$ -	Additional Funding Required	$ 10,200,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 200,000
Construction (Various)				$ 5,000,000	$ 5,000,000	$ 10,000,000
Highway 49 Intertie						$ -
Madrone Lane Waterline						$ -
Forni Road Waterline						$ -
Pollock Pines HWY 50 Crossings						$ -
Salmon Falls Waterline						$ -
TOTAL	$ -	$ 50,000	$ 50,000	$ 5,050,000	$ 5,050,000	$ 10,200,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$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.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Water Distribution Radio path design

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This CIP follows recommendations outlined in the SCADA masterplan. The radio path design would include radio study to determine most optimal and reliable wireless communication options for the District's remote facilities. The design would identify future backbone SCADA and business network locations. The design would also include field radio path verification of the modeled radio telemetry design. This design will encompass water facilities.

Basis for Priority:

Many remote facilities depend on antiquated serial radios. Quickly evolving technology requires EID to move to an IP based communication to retain maintainable parts. Performing large migrations without a proper design and proven concepts creates great risk for improper implementation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 310,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 310,000
Project Balance	$ -	Additional Funding Required	$ 310,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Radio Path Study			$ 75,000			$ 75,000
Radio Path Survey				$ 50,000		$ 50,000
Radio Path Design			$ 50,000	$ 100,000		$ 150,000
Capitalized Labor			$ 15,000	$ 20,000		$ 35,000
TOTAL	$ -	$ -	$ 140,000	$ 170,000	$ -	$ 310,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: Planned

Project Name: Wholesale Meter Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

This program replaces old and inaccurate large wholesale meters in the District. The project is mission required because it provides for replacement of inaccurate and enables all meters to be read in time for billing. The liability to the District if this project is not implemented includes increased labor expenses for manually reading the meters and inputting manual data into the computer system, and loss of revenue due to inaccurate reads. Actual wholesale meter replacement costs for each individual site will be brought to the Board for specific approval.

Basis for Priority:

Loss of revenue to under reporting large wholesale meters.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	
Spent to Date:		2020 - 2024 Planned Expenditures:	
Cash flow through end of year:		Total Project Estimate:	
Project Balance		Additional Funding Required	

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$15,000					$ 15,000
Cedar Ravine 6" Replacement		$150,000				$ 150,000
TOTAL	$ 15,000	$ 150,000	$ -	$ -	$ -	$ 165,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: 960 El Dorado Hills #1 Transmission Line Replacement Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The District inherited an 18" outside diameter steel (ODS) transmission pipeline installed in 1960 from El Dorado Hills County Water District (EDHCWD), which has begun to increase in leak frequency. The line is in need of replacement or rehabilitation between the El Dorado Hills Water Treatment Plant and Highway 50 crossing. The District currently feeds the southern side of Highway 50 (835 pressure zone) with an 18" pipeline crossing Highway 50 at Silva Valley Parkway. The lag feed is the current 1960's EDHCWD 18" ODS, which based on recent modeling appears to be more significant to the future of the 835 zone south of Highway 50 as development continues to increase. The pipeline currently operates on the 960 pressure zone in El Dorado Hills Boulevard and a section of the pipeline was re-operated to the 1140 pressure zone to provide water to the Ridgeview Tank from the Gold Hill Intertie. This pipeline was installed without the benefit of corrosion protection externally and the mortar lining inside the pipe is deteriorating. Additionally, the pipeline is in close proximity to PG&E gas pipelines with cathodic protection that provides stray current to our unprotected pipeline thus increasing the rate of external corrosion. The design funding will examine in more detail the water model to determine the sizing of the new 960 EDH #1 transmission pipeline and will begin to determine the phasing of the project.

Basis for Priority:

Replacement of the transmission pipeline will ensuring water supply flexibility/reliability from the 960 pressure zone to the 835 pressure zone in El Dorado Hills south of Highway 50.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Design			$ 100,000			$ 100,000
Environmental						$ -
Construction						$ -
TOTAL	$ -	$ -	$ 100,000	$ -	$ -	$ 100,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	75%		$0
FCC's	25%		$0
Total	100%		$0

Funding Comments: Project may involve an increase in sizing from an existing 18" to a 24" pipeline.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: STUDY03

Project Name: WTP Assessments

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

The purpose of this project is to better understand the needs of Reservoir A, Reservoir 1, El Dorado Hills, and Strawberry Water Treatment Plants for future capital improvement projects and to help aid in creating an asset management plan. This assessment will look at each of the plants individually and provide a roadmap for future work on the plants. Due to the overall age of the facilities, key elements of the existing treatment process need to be examined for rehabilitation or replacement to maintain permit compliance. The general goal and objectives are to review, evaluate, and assess the condition of the structures and equipment taking into account past and future maintenance activities. Additionally, recommendations will include timelines for the use in future CIP projects, including budgetary level cost estimates for each recommendation offered. Phase 1 of the water treatment plant assessment project has been approved by the Board, however Phase 2 will be negotiated and brought to the board for approval at the completion of the first phase. The CIP reflects an estimate for costs associated with Phase 2 based on Phase 1 costs.

Basis for Priority:

Determine replacement and improvement strategy to support regulatory compliance, improve service reliability, and reduce maintenance costs. This study will protect and preserve the health and safety of customers and the public.

Project Financial Summary:			
Funded to Date:	$ 439,863	Expenditures through end of year:	$ 58,736
Spent to Date:	$ 8,736	2020 - 2024 Planned Expenditures:	$ 845,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 903,736
Project Balance	$ 381,127	Additional Funding Required	$ 463,873

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning Reservoir A WTP	$ 110,000	$ 150,000				$ 260,000
Study/Planning El Dorado Hills WTP	$ 110,000	$ 150,000				$ 260,000
Study/Planning Reservoir 1 WTP	$ 110,000	$ 150,000				$ 260,000
Study/Planning Strawberry WTP	$ 15,000	$ 50,000				$ 65,000
TOTAL	$ 345,000	$ 500,000	$ -	$ -	$ -	$ 845,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

Funding Comments: The project prioritizes existing WTP assets and provides triggers for necessary upgrades and replacement based on reliability and maintenance factors, therefore is funded by water rates.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Construction Storage Facility

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

This project will provide a new storage facility in the EID upper yard to house material and equipment for increased security and protection from elements. A portion of this storage facility will need to be temperature controlled to properly store some disposable material. Additionally, the facility will be a prefabricated steel or wood building placed on a concrete foundation. Some of the design funding will be used to procure any necessary City of Placerville permits. The proposed building will be approximately 50 feet by 50 feet depending on available space in the District's upper yard.

Basis for Priority:

Improve efficiency and provide safe and adequate storage.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 790,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 790,000
Project Balance	$ -	Additional Funding Required	$ 790,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design/Permitting		$ 40,000				$ 40,000
Construction			$ 750,000			$ 750,000
TOTAL	$ -	$ 40,000	$ 750,000	$ -	$ -	$ 790,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: EDM Flow Integration

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Wilson **Board Approval:** 10/15/19

Project Description:

Design and install 5-7 Pressure Reducing Station monitoring sites on El Dorado Main #1 transmission line. These sites would provide valuable real-time data for control and efficiency of the system. The project would require at each site a new power service, insertion Cla-VAL flow meters, upstream and downstream pressure transmitters, RTU panel with metering section and antenna mast.

Basis for Priority:

The project will allow remote monitoring and control of the water distribution system. The remote control of the distribution system can be used to reduce pressure swings in the system and anticipate future repairs.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 632,500
Cash flow through end of year:	$ -	Total Project Estimate:	$ 632,500
Project Balance	$ -	Additional Funding Required	$ 632,500

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 50,000					$ 50,000
Construction		$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 500,000
Capitalized Labor	$ 7,500	$ 18,750	$ 18,750	$ 18,750	$ 18,750	$ 82,500
						$ -
TOTAL	$ 57,500	$ 143,750	$ 143,750	$ 143,750	$ 143,750	$ 632,500

Funding Sources	Percentage	2020 Amount
Water rates	100%	$57,500
		$0
		$0
Total	100%	$57,500

Funding Comments: Project involves providing visibility to an existing transmission system, with no planned increase in potable water delivery capacity, therefore funding is 100% water rates.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Water

Project Number: PLANNED

Project Name: Lower Ditch Water Rights SCADA Upgrades

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

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

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 67,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 67,000
Project Balance	$ -	Additional Funding Required	$ 67,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design			$ 10,000			$ 10,000
Construction				$ 45,000	$ 12,000	$ 57,000
TOTAL	$ -	$ -	$ 10,000	$ 45,000	$ 12,000	$ 67,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$67,000
Total	100%		$67,000

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

Wastewater Projects

2020 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:** 10/15/19

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.

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. If the lift station is bypassed there may be additional costs to purchase and record easements for the bypass pipeline.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	$ 147,620	Expenditures through end of year:	$ 72,398
Spent to Date:	$ 62,398	2020 - 2024 Planned Expenditures:	$ 480,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 552,398
Project Balance	$ 75,222	Additional Funding Required	$ 404,778

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design		$ 50,000				$ 50,000
CM		$ 30,000				$ 30,000
Construction		$ 400,000				$ 400,000
						$ -
TOTAL	$ -	$ 480,000	$ -	$ -	$ -	$ 480,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: Planned

Project Name: DOT Construction Projects

Project Category: State/County Road Projects

Priority: 1 **PM:** Money **Board Approval:** 10/15/19

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:	$ 29,047	Expenditures through end of year:	$ 5,897
Spent to Date:	$ 5,897	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 55,897
Project Balance	$ 23,150	Additional Funding Required	$ 26,850

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/Inspection	$10,000	$10,000	$10,000	$10,000	$10,000	$ 50,000
Construction Costs						$ -
						$ -
TOTAL	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 50,000

Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater Arc Flash Risk Assessment Program

Project Category: Regulatory Requirements

Priority: 1 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This program is intended to comply with regulatory requirements imposed by OSHA in regards to electrical safety of qualified workers. Majority of the electrical equipment in the District is no longer in compliance with the current regulatory requirements and National Fire Protection Association code (NFPA 70E 2018 Standard for Electrical Safety in the Workplace). In order for District to comply and avoid potential fines, Arc Flash Risk Assessment needs to be performed for each District facility that contains electrical hazards. Due to large amount of facilities and electrical equipment, this compliance requirement cannot be completed in a single year and must be separated into manageable portions. This program will assure District stays in compliance.

Basis for Priority:

Maintain electrical safety regulatory requirements of OSHA and NFPA70E. Determine replacement and improvement strategy to support regulatory compliance, improve service reliability and safety. This study will protect and preserve the health and safety of employees and the public.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 325,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 325,000
Project Balance	$ -	Additional Funding Required	$ 325,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Professional Services	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000
Capitalized Labor	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 75,000
						$ -
						$ -
TOTAL	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 325,000

Funding Sources	Percentage	2020	Amount
Wastewater rates	100%		$65,000
			$0
Total	100%		$65,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: STUDY09

Project Name: Camino Heights WWTP Study

Project Category: Regulatory Requirements

Priority: 1 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The Camino Heights Wastewater Treatment Plant was originally constructed in 1964 and serves the Camino Heights subdivision and a small commercial area along Highway 50. The plant is comprised of headwork's, pond system, disinfection, and irrigation system. The irrigation system is a combination of direct land application and sub-surface drip system. In recent years, storm events have caused excess influent flows at the treatment plant as well as difficulty with effluent disposal due to saturated soil conditions. Operations staff has relied on pump trucks to haul excess flow to the Deer Creek sewer system for disposal. A recent State Resources Control Board inquiry letter required the District to reconcile the approved discharge methods with alternative methods used during storm events. A new wet weather water balance will be performed and improvements to reduce peak wet weather flow will be recommended.

Basis for Priority:

This project will respond to a regulatory compliance inquire from the State Water Resources Control Board.

Project Financial Summary:			
Funded to Date:	$ 45,000	Expenditures through end of year:	$ 25,392
Spent to Date:	$ 5,392	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 75,392
Project Balance	$ 19,608	Additional Funding Required	$ 30,392

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 50,000					$ 50,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2020	Amount
Wastewater rates	100%		$30,392
			$0
Total	100%		$30,392

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 15036

Project Name: Silva Valley - El Dorado Hills Sewerline

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

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 capacity upsizing in the future. 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.

Preparation of a Basis of Design Report (BODR) began in 2019 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 2020 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:	$ 220,920	Expenditures through end of year:	$ 88,579
Spent to Date:	$ 38,579	2020 - 2024 Planned Expenditures:	$ 130,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 218,579
Project Balance	$ 132,341	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/Env/CM	$ 130,000					$ 130,000
Construction						$ -
						$ -
TOTAL	$ 130,000	$ -	$ -	$ -	$ -	$ 130,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater FCCs	100%		$0
Total	100%		$0

Funding Comments: The project provides capacity for new wastewater customers, therefore is funded with wastewater FCCs.

2020	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:** 10/15/19

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 and its electrical system is classified as an arc flash Category 3 and does not have the appropriate operational clearances.

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. Adjacent storage tanks will be repurposed so that flows can be bypassed around the existing wet well to increase operational flexibility. A new roof will be installed, the building trim painted, and the existing building will be reused to house new electrical controls designed to current standards. A new compliant generator will be installed next to the existing controls building and a new fence will be installed around the stations perimeter.

Project construction has been awarded to Syblon Reid and is expected to commence following the 2019-20 wet season in late April or early May.

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:	$ 2,156,528	Expenditures through end of year:	$ 222,250
Spent to Date:	$ 212,250	2020 - 2024 Planned Expenditures:	$ 1,918,108
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 2,140,358
Project Balance	$ 1,934,278	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/CM/Inspection	$ 190,000					$ 190,000
Construction	$ 1,728,108					$ 1,728,108
						$ -
TOTAL	$ 1,918,108	$ -	$ -	$ -	$ -	$ 1,918,108

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$0
Total	100%		$0

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 16030

Project Name: Solar Assessment Design

Project Category: Regulatory Requirements

Priority: 2 **PM:** Money **Board Approval:** 10/15/19

Project Description:

In October 2015 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. Later in September 2017 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. Following a successful request for proposal (RFP) process staff negotiated with Borrego Solar to enter into three power purchase agreements (PPA) at the El Dorado Hills and Deer Creek Wastewater Treatment Plants.

It is anticipated that mobilization and site work for the new solar facilities will begin at the EDHWWTP in December of 2019. The Commercial Operation Date for the EDHWWTP is planned for July of 2020, followed by DCWWTP in September of 2020. District staff, supported by the District's consultant TerraVerde, will provide engineering review and construction management services throughout the construction phase of these projects and engage with PG&E to minimize costs for interconnection upgrades and finalize contract requirements prior to commissioning the new facilities.

Basis for Priority:

Provide increased revenues and/or reduced costs.

Project Financial Summary:			
Funded to Date:	$ 955,163	Expenditures through end of year:	$ 502,323
Spent to Date:	$ 472,323	2020 - 2024 Planned Expenditures:	$ 483,385
Cash flow through end of year:	$ 30,000	Total Project Estimate:	$ 985,708
Project Balance	$ 452,840	Additional Funding Required	$ 30,545

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction/CM	$ 233,385					$ 233,385
PG&E Fees	$ 250,000					$ 250,000
						$ -
						$ -
TOTAL	$ 483,385	$ -	$ -	$ -	$ -	$ 483,385

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$30,545
Total	100%		$30,545

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17020

Project Name: Wastewater Collection System Pipeline Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

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 past its useful life and already failing. This project begins to meet the needs of infrastructure rehabilitation or replacement with the current funding capabilities. A design contract for the rehabilitation of twenty pipelines was awarded in August, 2017 and was completed late 2018. The project will be solicited late 2021 and construction of this project will occur Spring/Summer of 2022.

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:	$ 149,054
Spent to Date:	$ 134,054	2020 - 2024 Planned Expenditures:	$ 900,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 1,049,054
Project Balance	$ 19,386	Additional Funding Required	$ 880,614

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/CM			$ 100,000			$ 100,000
Construction			$ 800,000			$ 800,000
TOTAL	$ -	$ -	$ 900,000	$ -	$ -	$ 900,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$0
Total	100%		$0

Funding Comments:

2020	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:	10/15/19

Project Description:

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

A biddable plan set is scheduled to be complete in fall 2019 followed by project bidding in late 2019. Construction is expected to start in early 2020 and be completed by fall 2020.

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:	$ 383,809	Expenditures through end of year:	$ 301,589
Spent to Date:	$ 181,589	2020 - 2024 Planned Expenditures:	$ 1,200,000
Cash flow through end of year:	$ 120,000	Total Project Estimate:	$ 1,501,589
Project Balance	$ 82,220	Additional Funding Required	$ 1,117,780

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Construction/CM PLC Replacements	$ 1,200,000					$ 1,200,000
						$ -
TOTAL	$ 1,200,000	$ -	$ -	$ -	$ -	$ 1,200,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$1,117,780
Total	100%		$1,117,780

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17034

Project Name: Wastewater Collections Facility Relocation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

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. An alternatives analysis will inform the site configuration to most cost-effectively accommodate the office building with offices, meeting space, and locker facilities as well as material and construction storage and fleet and personal parking.

Basis for Priority:

The property is under contract at this time.

Project Financial Summary:			
Funded to Date:	$ 366,498	Expenditures through end of year:	$ 365,942
Spent to Date:	$ 215,942	2020 - 2024 Planned Expenditures:	$ 3,705,000
Cash flow through end of year:	$ 150,000	Total Project Estimate:	$ 4,070,942
Project Balance	$ 556	Additional Funding Required	$ 3,704,444

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 150,000					$ 150,000
Environmental Permitting	$ 80,000					$ 80,000
Consultant Design Services	$ 350,000					$ 350,000
Site Improvements	$ 900,000					$ 900,000
Office and Storage Buildings		$ 2,800,000				$ 2,800,000
Inspection/CM		$ 350,000				$ 350,000
Proceeds from Bass Lake Sale		$ (925,000)				$ (925,000)
TOTAL	$ 1,480,000	$ 2,225,000	$ -	$ -	$ -	$ 3,705,000

Estimated Funding Sources	Percentage	2020 Amount
Wastewater rates	100%	$1,479,444
		$0
Total	100%	$1,479,444

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 17046

Project Name: Strolling Hills Pipeline Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

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. This project will address complaints by adding additional hydraulic capacity.

This project will include a Basis of Design report, biddable plans and specifications, a phasing plan, and construction of approximately 6,000 feet of increased diameter pipe. The Strolling Hills pipe was identified in the 2013 Wastewater Master Plan as a candidate for increased capacity. The Basis of Design report will address past complaints as well as system capacity concerns in terms of proper pipe sizing and odor and corrosion control.

Basis for Priority:

Maintain and enhance existing assets.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 27,829
Spent to Date:	$ 22,829	2020 - 2024 Planned Expenditures:	$ 3,050,000
Cash flow through end of year:	$ 5,000	Total Project Estimate:	$ 3,077,829
Project Balance	$ 22,171	Additional Funding Required	$ 3,027,829

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 25,000					$ 25,000
Design		$ 25,000	$ 200,000			$ 225,000
Construction				$ 1,400,000	$ 1,400,000	$ 2,800,000
						$ -
TOTAL	$ 25,000	$ 25,000	$ 200,000	$ 1,400,000	$ 1,400,000	$ 3,050,000

Estimated Funding Sources	Percentage	2020 Amount
Wastewater Rates	50%	$1,414
Wastewater FCCs	50%	$1,414
		$0
Total	100%	$2,829

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN **Program:** **Wastewater**

Project Number: 18003

Project Name: Wastewater Lift Station Communication Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

This project will first look at determining the communication feasibility at each wastewater lift 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. 2020-2023 will see a significant catch up effort at 20 stations 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:	**$ 348,388**	**Expenditures through end of year:**	**$ 211,597**
Spent to Date:	**$ 211,597**	**2020 - 2024 Planned Expenditures:**	**$ 3,800,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 4,011,597**
Project Balance	**$ 136,791**	**Additional Funding Required**	**$ 3,663,209**

Description of Work	**Estimated Annual Expenditures**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Study/Planning						$ -
Design/CM	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 400,000
Construction	$ 400,000	$ 500,000	$ 500,000	$ 1,000,000	$ 1,000,000	$ 3,400,000
						$ -
TOTAL	$ 480,000	$ 580,000	$ 580,000	$ 1,080,000	$ 1,080,000	$ 3,800,000

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Wastewater Rates	100%		$343,209
			$0
Total	**100%**		**$343,209**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 18027

Project Name: El Dorado Lift Pipeline Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The El Dorado Lift Station serves approximately 2500 EDU's and is a critical component to the Deer Creek wastewater collection system. Several sections of 36-inch spirolite pipe upstream of the El Dorado Lift Station have been identified as significantly damaged and in need of replacement and/or repair. Construction of the pipe project is planned for Spring/Summer of 2020.

Basis for Priority:

Maintain credibility with the regulators and public for infrastructure maintenance by performing necessary pipeline replacement and/or repair. One significant spill to waters of the state could cost the District $10 per gallon in fines.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 24,892
Spent to Date:	$ 14,892	2020 - 2024 Planned Expenditures:	$ 550,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 574,892
Project Balance	$ 25,108	Additional Funding Required	$ 524,892

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design						$ -
Inspection/CM	$ 50,000					$ 50,000
Construction	$ 500,000					$ 500,000
						$ -
TOTAL	$ 550,000	$ -	$ -	$ -	$ -	$ 550,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$524,892
			$0
Total	100%		$524,892

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 18035

Project Name: EDHWWTP WAS DAFT Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The waste-activated-sludge dissolved-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 to control the amount of microorganisms in the wastewater treatment process by thickening waste-activated sludge before is pumped to the anaerobic digester.

This project will rehabilitate the WAS DAFT concrete unit, replace the air dissolution system, and replace the mechanical components within the unit. Various mechanical components to be replaced include the center drive, distribution well, skimmer arm, bottom scraper arms, float box, baffle skirt, DAF feed well connection pipe, walkway system, and necessary valves, boxes, meters, and piping.

Construction is planned for 2020 through 2022.

Basis for Priority:

Wastewater at the EDHWWTP is biologically treated with waste-activated-sludge. The deteriorating WAS DAFT unit is utilized to control the amount of microorganisms to create an efficient treatment process. If the WAS DAFT were to fail, the treatment process would be highly in-efficient and the risk of a spill during a storm event would be increased.

Project Financial Summary:			
Funded to Date:	$ 200,588	Expenditures through end of year:	$ 162,422
Spent to Date:	$ 132,422	2020 - 2024 Planned Expenditures:	$ 2,160,000
Cash flow through end of year:	$ 30,000	Total Project Estimate:	$ 2,322,422
Project Balance	$ 38,166	Additional Funding Required	$ 2,121,834

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design						$ -
Inspection/CM	$ 50,000	$ 80,000	$ 80,000			$ 210,000
Construction	$ 250,000	$ 850,000	$ 850,000			$ 1,950,000
						$ -
TOTAL	$ 300,000	$ 930,000	$ 930,000	$ -	$ -	$ 2,160,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$261,834
			$0
Total	100%		$261,834

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 18053

Project Name: EDHWWTP Belt Press PLC Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The El Dorado Hills Wastewater Treatment Plant utilizes a belt press to dewater digested sludge before trucking and disposing of off site. The belt press reduces the water content such that the liquid digested sludge becomes a solid cake. The reduction in water content greatly reduces trucking and disposal expenses as well as ensure regulatory compliance.

This belt press was originally purchased as a used piece of equipment and installed in 1997. The wiring, control panel, and VFD display have significant corrosion and deterioration. In addition, EID staff does not have the current control logic documented. This project is to investigate and document current control logic, develop bid documents, and construct replacement electrical and control components.

Basis for Priority:

This project provides replacement of failing components thereby providing safe and reliable wastewater treatment assets.

Project Financial Summary:			
Funded to Date:	$ 45,000	Expenditures through end of year:	$ 20,528
Spent to Date:	$ 10,528	2020 - 2024 Planned Expenditures:	$ 280,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 300,528
Project Balance	$ 24,472	Additional Funding Required	$ 255,528

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/Inspection/CM		$ 30,000				$ 30,000
Construction		$ 250,000				$ 250,000
						$ -
TOTAL	$ -	$ 280,000	$ -	$ -	$ -	$ 280,000

Funding Sources	Percentage	2020 Amount
Wastewater Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 18063

Project Name: EDHWWTP Solar Inverters

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

This project is to address the end-of-useful life solar inverters at the El Dorado Hills Wastewater Treatment Plant. One of the four original central inverters has already failed and been replaced in the recent past. Additionally, central inverter technology is being phased out in the solar industry and is being replaced by string inverters. This project will assess the current production and remaining life of the solar panels, determine viable options for inverter replacement, and implement the most appropriate replacement solution.

Basis for Priority:

This project will replace failing assets to ensure reliability and continual operation of the existing solar field at El Dorado Hills Wastewater Treatment Plant.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 35,444
Spent to Date:	$ 15,444	2020 - 2024 Planned Expenditures:	$ 330,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 365,444
Project Balance	$ 14,556	Additional Funding Required	$ 315,444

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Inspection/CM	$ 50,000					$ 50,000
Construction	$ 280,000					$ 280,000
						$ -
TOTAL	$ 330,000	$ -	$ -	$ -	$ -	$ 330,000

Funding Sources	Percentage	2020 Amount
Wastewater Rates	100%	$315,444
		$0
		$0
Total	100%	$315,444

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: 19005

Project Name: Town Center Force Main PH4

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The Town Center Force Main and lift station were originally designed and constructed in 1980 to collect Prospector's Plaza wastewater and pump to the Mother Lode Force Main at Pleasant Valley Road and Mother Lode Drive. Town Center Force Main was constructed out of 8" asbestos cement (AC) pipe which has experienced several failures causing SSO's in the past few years due to corrosion. The force main is in need of replacement with PVC which will withstand the corrosive raw sewage. Phase 4 is the final phase which will replace the force main from the upstream Town Center lift station to the beginning of phase 2A, south of Highway 50. At the completion of construction, the Town Center Force Main will be analyzed for odor and corrosion control chemical supplementation.

Basis for Priority:

This project will replace failing assets to ensure reliability and continual operation of the wastewater collection system.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 2,950,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,950,000
Project Balance	$ -	Additional Funding Required	$ 2,950,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design				$ 100,000	$ 50,000	$ 150,000
Construction					$ 2,800,000	$ 2,800,000
						$ -
TOTAL	$ -	$ -	$ -	$ 100,000	$ 2,850,000	$ 2,950,000

Funding Sources	Percentage	2020 Amount
Wastewater FCC	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Closed Circuit Television (CCTV) Sewer Inspection Equipment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Crane **Board Approval:** 10/15/19

Project Description:

This will provide funding to purchase new equipment that is necessary to perform CCTV inspection of sewer mainlines and service laterals. The District owns and maintains approximately 411 miles of gravity sewer mainline and 231 miles of service laterals. The District has adopted a Sanitary Sewer Management Plan that includes a goal of inspecting our underground sewer assets on a 10-year rotation. The current CCTV equipment is outdated and unreliable. As a result, our inspection program has consistently fallen short of our inspection goal. The ability to assess the condition of our underground assets is of vital importance to the successful operation and maintenance of our sewer system. Additionally, the CCTV inspection program utilizes the Pipeline Assessment and Condition Program (PACP) which allows us to rank the condition of the underground pipelines using a standard ranking system that plays a key role identifying capital pipe replacement projects. The new equipment will also give staff the ability to inspect service laterals from the mainline utilizing new "lateral launch" camera equipment. This project includes funding for the acquisition of the equipment, integration of inspection records into our current database and miscellaneous tools associated with CCTV inspections.

Basis for Priority:

Improve efficiency and provides equipment to inspect sewer mainlines and service laterals

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 425,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 425,000
Project Balance	$ -	Additional Funding Required	$ 425,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
CCTV equipment	$ 385,000					$ 385,000
Tools, Accessories and Integration	$ 40,000					$ 40,000
						$ -
TOTAL	$ 425,000	$ -	$ -	$ -	$ -	$ 425,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$425,000
Total	100%		$425,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Collection Master Radio PLC Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The Project is to design, install and program a new Sewer Collections master PLC. The District's current master PLC has passed its End of Life cycle and District staff is finding it difficult to locate and purchase affordable replacement parts to keep this unit in service.

Basis for Priority:

End of Life cycle replacement for PLCs / radios controlling wastewater collections. The SCADA Group highly recommends immediate replacement to significantly reduce the risks of communication failures in the collection system.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Professional Services	$ 125,000					$ 125,000
Construction						$ -
Capitalized Labor	$ 25,000					$ 25,000
TOTAL	$ 150,000	$ -	$ -	$ -	$ -	$ 150,000

Funding Sources	Percentage	2020	Amount
Wastewater rates	100%		$150,000
			$0
			$0
Total	100%		$150,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Collections Radio path design

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This CIP follows recommendations outlined in the SCADA masterplan. The radio path design would include a radio study to determine most optimal and reliable wireless communication options for the District's remote facilities. The design would identify future backbone SCADA and business network locations. The design would also include field radio path verification of the modeled radio telemetry design. This design will encompass wastewater collections and treatment facilities.

Basis for Priority:

Many remote facilities depend on antiquated serial radios. Quickly evolving technology requires EID to move to an IP based communication to retain maintainable parts. Performing large migrations without a proper design and proven concepts creates great risk for improper implementation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 415,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 415,000
Project Balance	$ -	Additional Funding Required	$ 415,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Radio Path Study	$ 90,000					$ 90,000
Radio Path Survey		$ 75,000				$ 75,000
Radio Path Design	$ 100,000	$ 100,000				$ 200,000
Capitalized Labor	$ 25,000	$ 25,000				$ 50,000
TOTAL	$ 215,000	$ 200,000	$ -	$ -	$ -	$ 415,000

Funding Sources	Percentage	2020	Amount
Wastewater rates	100%		$215,000
			$0
Total	100%		$215,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: EDHWWTP PLC Replacement Project

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

Replacement of end of life PLC equipment.

Basis for Priority:

This hardware is failing and has been a service reliability and maintenance issue. This equipment is life cycled out. The original installation was over 25 years ago. Parts are no longer being made for these units and they are difficult to service.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 860,000
Cash flow through end of year:		Total Project Estimate:	$ 860,000
Project Balance	$ -	Additional Funding Required	$ 860,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design AB 5 PLC Replacement	$ 85,000					$ 85,000
Construction PLC 5		$ 225,000				$ 225,000
Construction PLC 3			$ 275,000			$ 275,000
Construction PLC 6				$ 275,000		$ 275,000
						$ -
TOTAL	$ 85,000	$ 225,000	$ 275,000	$ 275,000	$ -	$ 860,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%	$	85,000
Total	100%		$85,000

Funding Comments:

2020 **CAPITAL IMPROVEMENT PLAN** **Program:** **Wastewater**

Project Number: PLANNED

Project Name: SCADA Wastewater Hardware Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This funding is designated to be a rolling CIP to replace end of life cycle SCADA hardware District wide. This program would focus on replacing and reprogramming of the end of life PLC hardware and associated SCADA reconfigurations. Many sites are beyond the 15 year life expectancy for the PLC hardware.

Basis for Priority:

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

Project Financial Summary:			
Funded to Date:	$ -	**Expenditures through end of year:**	$ -
Spent to Date:	$ -	**2020 - 2024 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**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Hardware	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 100,000
Installation	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
Professional Services	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
						$ -
						$ -
						$ -
TOTAL	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000

Estimated Funding Sources	**Percentage**	**2020 Amount**
Wastewater rates	100%	$50,000
		$0
Total	**100%**	**$50,000**

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

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

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

Priority: 2 **PM:** Money **Board Approval:** 10/15/19

Project Description:

This is an annual program to replace wastewater assets 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 mechanical, electrical and instrumentation systems, treatment plant and lift station equipment, generators, 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:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 1,000,000
Cash flow through end of year:		Total Project Estimate:	$ 1,000,000
Project Balance	$ -	Additional Funding Required	$ 1,000,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	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

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	70%		$140,000
Wastewater FCCs	30%		$60,000
Total	100%		$200,000

Funding Comments: Funding split based on available plant capacity

2020	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:** 10/15/19

Project Description:

The District currently maintains sixty wastewater lift stations. Twenty-nine of these lift stations are within the Deer Creek shed, and the remaining thirty-one are in the El Dorado Hills shed.

The age, condition, and capacity of each station varies significantly. In order to prioritize rehabilitation and replacement efforts District staff will be completing a condition assessment of all lift stations in 2020. Using the recommendations of the condition assessment future projects will be prioritized and then designed with and intend of rehabilitating one lift station every other year. District staff will also evaluate smaller projects aimed at rehabilitating or replacing portions of existing stations where possible to prolong the useful life of the remaining stations.

This CIP anticipates completion of the condition assessment and the design of the first rehabilitation project in 2020 followed by construction of the first prioritized project in 2021. Design and construction of additional projects by priority will then follow in alternating years or 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:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 3,680,000
Cash flow through end of year:		Total Project Estimate:	$ 3,680,000
Project Balance	$ -	Additional Funding Required	$ 3,680,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 80,000					$ 80,000
Design		$ 300,000		$ 300,000		$ 600,000
Construction			$ 1,500,000		$ 1,500,000	$ 3,000,000
TOTAL	$ 80,000	$ 300,000	$ 1,500,000	$ 300,000	$ 1,500,000	$ 3,680,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	65%		$52,000
Wastewater FCC	35%		$28,000
Total	100%		$80,000

Funding Comments: Funding split based on plant capacity.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: Wastewater Pipeline Replacement and Rehabilitation Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The District owns and operates four collection systems within El Dorado County. Aging infrastructure and limited funding necessitates active inspection and assessment of the collection system. This program will systematically develop projects to replace or rehabilitate the most critical infrastructure.

Basis for Priority:

This programmatic project will replace or rehabilitate the most critical aging infrastructure in the collection system. One significant spill to waters of the state could cost the District $10 per gallon in fines.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 3,350,000
Cash flow through end of year:		Total Project Estimate:	$ 3,350,000
Project Balance	$ -	Additional Funding Required	$ 3,350,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 50,000					$ 50,000
Design/CM	$ 50,000	$ 100,000	$ 50,000	$ 50,000	$ 50,000	$ 300,000
Construction			$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 3,000,000
TOTAL	$ 100,000	$ 100,000	$ 1,050,000	$ 1,050,000	$ 1,050,000	$ 3,350,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$100,000
Total	100%		$100,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: WWTP Assessments

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

The Deer Creek and El Dorado Hills Wastewater Treatment Plants were originally constructed in the 1960's and have undergone several expansions beginning in the early 1990's. This assessment will look at each of the plants individually and provide a roadmap for future work on the plants. Due to the overall age of the facilities, key elements of the existing treatment process need to be examined for rehabilitation or replacement to maintain permit compliance. The general goal and objectives are to review, evaluate, and assess the condition of the structures and equipment taking into account past and future maintenance activities and regulatory requirements. Additionally, recommendations will include timelines for the use in future CIP projects, including budgetary level cost estimates for each recommendation offered.

Basis for Priority:

Determine replacement and improvement strategy to support regulatory compliance, improve service reliability, and reduce maintenance costs.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 400,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 400,000
Project Balance	$ -	Additional Funding Required	$ 400,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 200,000	$ 200,000				$ 400,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 200,000	$ 200,000	$ -	$ -	$ -	$ 400,000

Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$200,000
			$0
			$0
Total	100%		$200,000

Funding Comments: The project prioritizes existing WWTP assets and provides triggers for necessary upgrades and replacement based on reliability and maintenance factors, therefore is funded by wastewater rates.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Wastewater

Project Number: PLANNED

Project Name: WWTP Process Improvement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

This project is to perform minor modifications to civil, mechanical, and electrical components within the wastewater treatment plants. Modifications included in this project but not limited to variable frequency drives, cathodic protection, and reconfiguration of piping.

Basis for Priority:

This programmatic project will enhance reliability at the wastewater treatment plants.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 1,475,000
Cash flow through end of year:		Total Project Estimate:	$ 1,475,000
Project Balance	$ -	Additional Funding Required	$ 1,475,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design/CM	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
Construction	$ 150,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 1,350,000
TOTAL	$ 175,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 1,475,000

Estimated Funding Sources	Percentage	2020	Amount
Wastewater Rates	100%		$175,000
Total	100%		$175,000

Funding Comments:

Recycled Water Projects

2020	CAPITAL IMPROVEMENT PLAN	Program:	Recycled Water

Project Number: PLANNED

Project Name: Recycled Water Asset Planning

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

Due to the overall age and evolving operation of the facilities, key elements of the existing distribution system need to be examined for hydraulic operation as well as rehabilitation or replacement. The general goal and objectives are to study, review, evaluate, and assess the condition and status of the structures and equipment taking into account past and future maintenance activities and regulatory requirements. Additionally, recommendations will include timelines for the use in future CIP projects, including budgetary level cost estimates for each recommendation offered.

Basis for Priority:

Determine replacement and improvement strategy to support service reliability and reduce maintenance costs.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 100,000	$ 100,000				$ 200,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 100,000	$ 100,000	$ -	$ -	$ -	$ 200,000

Funding Sources	Percentage	2020	Amount
Recycled water rates	100%		$100,000
			$0
			$0
Total	100%		$100,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Recycled Water

Project Number: PLANNED

Project Name: Recycled Water Asset Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Carrington **Board Approval:** 10/15/19

Project Description:

This is an annual program to replace recycled assets 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 mechanical, electrical and instrumentation systems, pump station equipment, generators, and distribution 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:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 1,650,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,650,000
Project Balance	$ -	Additional Funding Required	$ 1,650,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design			$ 50,000	$ 50,000	$ 50,000	$ 150,000
Construction			$ 500,000	$ 500,000	$ 500,000	$ 1,500,000
						$ -
TOTAL	$ -	$ -	$ 550,000	$ 550,000	$ 550,000	$ 1,650,000

Funding Sources	Percentage	2020	Amount
Recycled water rates	100%		$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Recycled Water

Project Number: PLANNED

Project Name: Recycled Water Radio Path Design and Replacement

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This CIP follows recommendations outlined in the SCADA masterplan. The radio path design would include radio study to determine most optimal and reliable wireless communication options for the District's remote facilities. The design would include field radio path verification of the modeled radio telemetry design. This design will encompass recycled water facilities.

Basis for Priority:

Many remote facilities depend on antiquated serial radios. Quickly evolving technology requires EID to move to an IP based communication to retain maintainable parts. Performing large migrations without a proper design and proven concepts creates great risk for improper implementation.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 75,000
Project Balance	$ -	Additional Funding Required	$ 75,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 35,000					$ 35,000
Construction	$ 25,000					$ 25,000
Capitalized Labor	$ 15,000					$ 15,000
						$ -
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2020	Amount
Recycled water rates	100%		$75,000
			$0
			$0
Total	100%		$75,000

Funding Comments:

Hydroelectric Projects

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 11004

Project Name: Lake Aloha Dam

Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 10/15/19

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 completed and approved by FERC and DSOD. Potential impacts to cultural resources have been evaluated, and the FS concurred with the District's finding of no effect. The District's Project Description and work plan is under review by the USFS, and the USFWS is being consulted with regard to protection measures for the Sierra Yellow-legged Frog. Materials and equipment will be transported by helicopter to support in-house construction planned for fall 2020.

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:	$ 276,583	Expenditures through end of year:	
Spent to Date:	$ 68,149	2020 - 2024 Planned Expenditures:	$ 110,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 110,000
Project Balance	$ 193,434	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 15,000					$ 15,000
Design						$ -
Construction	$ 95,000					$ 95,000
						$ -
TOTAL	$ 110,000	$ -	$ -	$ -	$ -	$ 110,000

Estimated Funding Sources	Percentage	2020 Amount
Water FCCs	53%	$0
Water Rates	47%	$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17013H

Project Name: Forebay Dam Upgrades

Project Category: Regulatory Requirements

Priority: 1 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

Construction is in its third and final year. 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. Timber harvesting at the dam and in the soil borrow area was completed in 2017. Installation of the stability berm and buttress began in 2018 and is continuing in 2019. Reservoir dewatering occurred during fall 2018 enabling significant other improvements to occur to meet current dam safety standards. The new buttress and dam raise should be complete in late 2019 with remaining construction planned through April 2020.

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:	$ 25,312,035	Expenditures through end of year:	$ 23,312,035
Spent to Date:	$ 16,744,335	2020 - 2024 Planned Expenditures:	$ 2,000,000
Cash flow through end of year:	$ 6,567,700	Total Project Estimate:	$ 25,312,035
Project Balance	$ 2,000,000	Additional Funding Required	$ 0

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 2,000,000					$ 2,000,000
						$ -
TOTAL	$ 2,000,000	$ -	$ -	$ -	$ -	$ 2,000,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$0
Water Rates	47%		$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17051

Project Name: Weber Dam Access

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Kessler **Board Approval:** 10/15/19

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 new stairways leading to the top of the dam. The design was completed in 2018 and construction by District crews is being performed in 2019 and 2020.

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:	$ 100,000	Expenditures through end of year:	$ 77,533
Spent to Date:	$ 57,533	2020 - 2024 Planned Expenditures:	$ 20,000
Cash flow through end of year:	$ 20,000	Total Project Estimate:	$ 97,533
Project Balance	$ 22,467	Additional Funding Required	$ -

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 20,000					$ 20,000
						$ -
TOTAL	$ 20,000	$ -	$ -	$ -	$ -	$ 20,000

Estimated Funding Sources	Percentage	2020 Amount
Water Rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: 19031
Project Name: Silver Lake Dam Replacement
Project Category: Regulatory Requirements

Priority: 1 **PM:** Kessler **Board Approval:** 10/15/19

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 2019 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's 11005H and 06017H.

Basis for Priority:

Compliance with FERC and DSOD dam safety program requirements.

Project Financial Summary:			
Funded to Date:	$ 591,160	**Expenditures through end of year:**	$ 525,511
Spent to Date:	$ 515,511	**2020 - 2024 Planned Expenditures:**	$ 1,400,000
Cash flow through end of year:	$ 10,000	**Total Project Estimate:**	$ 1,925,511
Project Balance	$ 65,649	**Additional Funding Required**	$ 1,334,351

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$50,000	$100,000	$ 450,000	$ 50,000	$ 50,000	$ 700,000
Design	$100,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 700,000
Construction				*	*	$ -
TOTAL	$ 150,000	$ 250,000	$ 600,000	$ 200,000	$ 200,000	$ 1,400,000

Estimated Funding Sources	Percentage	2020	Amount
Water FCCs	53%		$44,706
Water Rates	47%		$39,645
Total	**100%**		**$84,351**

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.

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Annual Reservoir and Dam Program

Project Category: Reliability & Service Level Improvements

Priority: 1 **PM:** Gibson **Board Approval:** 10/15/19

Project Description:

The District dams and reservoirs need of upgrades to extend their life and comply with safety standards. The staff gauge at Caples Reservoir is deteriorated, missing elevation numbers and needs to be replaced. The conduit that holds the lake level transducer was replaced but needs to be secured to the lake bottom. Both of these jobs will require divers to perform the work. The boom logs at the Diversion Dam structure are at the end of their service life and need to be replaced ($15.5k). FERC identified some Echo Lake improvements to the spillway channel, eliminate the undercutting at the dam and seal the cracks and joints. The outlet valve at Weber Reservoir is deteriorating and needs to be replaced and the dam upstream face is spalling and needs to be improved. The Emergency Action Plan and inundation maps are due to be reprinted in their 5 year cycle. Other unforeseen activities typically arise as a result of the District's surveillance and monitoring program, and as identified in FERC's and DSOD's annual inspections to maintain the dams in conformance with dam safety standards.

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:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 250,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 450,000
						$ -
TOTAL	$ 250,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 450,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$250,000
			$0
			$0
Total	100%		$250,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 16022

Project Name: Flume 38-40 Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

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 the canal and conversion of wooden flume structures to concrete canal 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 75% 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:	$ 916,753	Expenditures through end of year:	$ 916,753
Spent to Date:	$ 695,539	2020 - 2024 Planned Expenditures:	$ 11,200,000
Cash flow through end of year:	$ 221,214	Total Project Estimate:	$ 12,116,753
Project Balance	$ (0)	Additional Funding Required	$ 11,200,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning/Env						$ -
Design						$ -
Construction	$ 11,000,000					$ 11,000,000
Warranty/FERC QCIP	$ 100,000	$ 100,000				$ 200,000
TOTAL	$ 11,100,000	$ 100,000	$ -	$ -	$ -	$ 11,200,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$5,217,000
Water FCCs	53%		$5,883,000
			$0
Total	100%		$11,100,000

Funding Comments:

2020	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:** 10/15/19

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. 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:	$ 388,762	Expenditures through end of year:	$ 261,082
Spent to Date:	$ 128,082	2020 - 2024 Planned Expenditures:	$ 3,300,000
Cash flow through end of year:	$ 133,000	Total Project Estimate:	$ 3,561,082
Project Balance	$ 127,680	Additional Funding Required	$ 3,172,320

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning/Env						$ -
Design						$ -
Construction	$ 3,200,000					$ 3,200,000
FERC/QCIP		$ 100,000				$ 100,000
TOTAL	$ 3,200,000	$ 100,000	$ -	$ -	$ -	$ 3,300,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$1,443,990
Water FCCs	53%		$1,628,330
			$0
Total	100%		$3,072,320

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 16046

Project Name: Powerhouse Roof

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kessler **Board Approval:** 10/15/19

Project Description:

The El Dorado Powerhouse roof has been maintained over the past 30 + years by applying an overlay membrane/coating onto previous ones. This method of maintenance has become ineffective due to various drainage and failing roof penetration issues. As a result, the roof is leaking and causing structural damage. Roof leakage and drainage is also creating a safety hazard in some areas due to its uncontrolled path into high voltage (6,600 Volt) bus work and switchgear. The District has conducted an engineering assessment with structural and roofing specialists, and obtained recommendations for roof covering removal and replacement including drainage improvements. Next steps include designing and preparing bid documents for improving roof access, choosing a roofing system among alternatives, developing roof covering/structural repair/drainage improvement plans and spec's, conducting construction bidding, and performing construction in 2020. PG&E has indicated a willingness to cost share in proportion to their switchyard facilities with the overall scope of work.

Basis for Priority:

Maintain existing assets and safety for personnel working conditions.

Project Financial Summary:			
Funded to Date:	$ 125,000	Expenditures through end of year:	$ 93,582
Spent to Date:	$ 68,582	2020 - 2024 Planned Expenditures:	$ 325,000
Cash flow through end of year:	$ 25,000	Total Project Estimate:	$ 418,582
Project Balance	$ 31,418	Additional Funding Required	$ 293,582

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction	$ 275,000					$ 275,000
						$ -
TOTAL	$ 325,000	$ -	$ -	$ -	$ -	$ 325,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$293,582
Water FCCs	0%		$0
			$0
Total	100%		$293,582

Funding Comments:

2020	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:** 10/15/19

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:	$ 12,122
Spent to Date:	$ 12,122	2020 - 2024 Planned Expenditures:	$ 1,760,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,772,122
Project Balance	$ 37,878	Additional Funding Required	$ 1,722,122

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning/Env	$ 25,000	$ 25,000				$ 50,000
Geo/Design	$ 75,000	$ 75,000				$ 150,000
Construction			$ 1,500,000			$ 1,500,000
QCIP				$ 60,000		$ 60,000
TOTAL	$ 100,000	$ 100,000	$ 1,500,000	$ 60,000	$ -	$ 1,760,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$29,197
Water FCCs	53%		$32,925
			$0
Total	100%		$62,122

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 17028

Project Name: Flume 48 Replacement/Tunnel option

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

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 an easement on an adjacent parcel and a FERC boundary adjustment. The District was able to purchase the parcel that the majority of the tunnel would be placed in 2018. This parcel will also be used as a staging area whether or not the tunnel option is feasible. Design and construction costs are unknown at this time, and will be updated in 2020 after further alternatives analysis.

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:	$ 274,971	Expenditures through end of year:	$ 274,971
Spent to Date:	$ 16,438	2020 - 2024 Planned Expenditures:	$ 10,720,000
Cash flow through end of year:	$ 258,533	Total Project Estimate:	$ 10,994,971
Project Balance	$ (0)	Additional Funding Required	$ 10,720,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 20,000					$ 20,000
Design/Env	$ 200,000	$ 200,000	$ 200,000		$ -	$ 600,000
Construction				$ 5,000,000	$ 5,000,000	$ 10,000,000
Warranty-FERC QCIP					$ 100,000	$ 100,000
TOTAL	$ 220,000	$ 200,000	$ 200,000	$ 5,000,000	$ 5,100,000	$ 10,720,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$103,400
Water FCCs	53%		$116,600
			$0
Total	100%		$220,000

Funding Comments:

2020	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:** 10/15/19

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 is preserved, 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 may need to be brought in by helicopter. The construction costs are estimated based on previous projects. 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:	$ 705,415	Expenditures through end of year:	$ 507,317.00
Spent to Date:	$ 244,125	2020 - 2024 Planned Expenditures:	$ 8,550,000
Cash flow through end of year:	$ 263,192	Total Project Estimate:	$ 9,057,317
Project Balance	$ 198,098	Additional Funding Required	$ 8,351,902

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning/Env						$ -
Geo/Design	$ 200,000					$ 200,000
Construction		$ 8,250,000				$ 8,250,000
Warranty/QCIP		$ 100,000				$ 100,000
TOTAL	$ 200,000	$ 8,350,000	$ -	$ -	$ -	$ 8,550,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$894
Water FCCs	53%		$1,008
			$0
Total	100%		$1,902

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN **Program:** **Hydroelectric**

Project Number: 18010

Project Name: Penstock Stabilization Improvements

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kessler **Board Approval:** 10/15/19

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 initiated in 2015 to perform a comprehensive 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 improvements beyond 2020 will be developed upon completion of design for later phases.

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 rockfall and landslide potential exists
5) Improving the anchoring of the surge tank to meet seismic loading; Work planned for 2020 includes improving access, developing plans and specifications, and conducting environmental review/permitting for accomplishing items 1 - 5 above. The repair costs will be estimated as part of the plan development efforts.

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:	**$ 100,000**	**Expenditures through end of year:**	**$ 70,799**
Spent to Date:	**$ 50,799**	**2020 - 2024 Planned Expenditures:**	**$ 1,390,000**
Cash flow through end of year:	**$ 20,000**	**Total Project Estimate:**	**$ 1,460,799**
Project Balance	**$ 29,201**	**Additional Funding Required**	**$ 1,360,799**

Description of Work	**Estimated Annual Expenditures**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Study/Planning	$ 20,000	$ 10,000				$ 30,000
Design	$ 100,000	$ 50,000	$ 60,000	$ 50,000	$ 50,000	$ 310,000
Construction	$ 300,000	$ 300,000	$ 250,000	$ 100,000	$ 100,000	$ 1,050,000
						$ -
TOTAL	$ 420,000	$ 360,000	$ 310,000	$ 150,000	$ 150,000	$ 1,390,000

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Water rates	100%		$390,799
			$0
			$0
Total	**100%**		**$390,799**

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN Program: Hydroelectric

Project Number: 18013

Project Name: Project 184 SCADA System Hardware Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

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, and Caples Lake. This system has served the district well and is no longer supported. This CIP will slowly replace the existing system over multiple years:
2017 – Complete design of Diversion and (15) monitoring sites
2018 – Construction for the monitoring sites.
2019 – Construction for the monitoring sites and Diversion. Design for the remaining spillway sites.
2020 – Construction for spill ways sites and any monitoring sites that were not in 2019's budget
2021 – Construction for spill ways sites

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 supported on a modern computer.

Project Financial Summary:			
Funded to Date:	$ 779,661	**Expenditures through end of year:**	$ 622,731
Spent to Date:	$ 272,731	**2020 - 2024 Planned Expenditures:**	$ 700,000
Cash flow through end of year:	$ 350,000	**Total Project Estimate:**	$ 1,322,731
Project Balance	$ 156,930	**Additional Funding Required**	$ 543,070

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Spillway Design	$ 50,000					$ 50,000
Construction Spillways	$ 300,000	$ 300,000				$ 600,000
Construction Monitoring Sites	$ 50,000					$ 50,000
						$ -
TOTAL	$ 400,000	$ 300,000	$ -	$ -	$ -	$ 700,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%	$	400,000
			$0
			$0
Total	**100%**		**$400,000**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 19024H

Project Name: Echo Conduit Rehabilitation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kessler **Board Approval:** 10/15/19

Project Description:

The Echo Conduit was installed in 1922 and is comprised of approximately 2,320 lineal feet of 36" diameter steel pipeline, 750 lineal feet of canal, and 1,106 lineal feet of tunnel. In 1953 and 1967, sections of the 36-inch diameter pipe were replaced. After experiencing a tunnel collapse in 2005, the timber-reinforced tunnel was lined with a 36" diameter HDPE pipeline, including filling the annular space with grout. The pipe is overall degraded and misshaped from snow load and rock fall, and is not a candidate for slip lining. While the pipeline has been maintained serviceable with weld repairs and neoprene patches held with steel band strapping, the extent of pipe wall thinning is resulting in diminishing options for repair. If the pipeline were to rupture, it could cause significant environmental damage and affect traffic safety on Highway 50.

Therefore, the pipeline section will need to be replaced in the near term with new pipe and the supporting substructure. The current plans include considering a multi-year phased approach for pipeline replacement, and also considering replacement of the canal section with pipeline. Typically over 1,500 acre feet of water is transferred annually from Echo Lake for water supply and power generation. The total revenue from Echo Lake water can exceed $350,000 annually. Construction costs for the rehabilitation will be estimated upon completion of preliminary design. The initial phase of work includes conducting Biological and Cultural Resource surveys in 2019, and conducting an alignment survey, performing preliminary engineering for the foundation, elevated section supports, and pipeline, and developing a constructability review/plan in consideration of limited locations for access during 2019/2020.

Basis for Priority: The Echo conduit needs to be repaired so the District can continue to use this water supply. The water rights are pre-1914 and are critical for drought years and to generate revenue.

Project Financial Summary:			
Funded to Date:	$ 100,000	Expenditures through end of year:	$ 32,842
Spent to Date:	$ 2,842	2020 - 2024 Planned Expenditures:	$ 1,430,000
Cash flow through end of year:	$ 30,000	Total Project Estimate:	$ 1,462,842
Project Balance	$ 67,158	Additional Funding Required	$ 1,362,842

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 100,000	$ 40,000				$ 140,000
Design	$ 50,000	$ 40,000				$ 90,000
Construction		$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 1,200,000
						$ -
TOTAL	$ 150,000	$ 380,000	$ 300,000	$ 300,000	$ 300,000	$ 1,430,000

Estimated Funding Sources	Percentage	2020 Amount
Water Rates	100%	$82,842
		$0
		$0
Total	100%	$82,842

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Annual Canal and Flume Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Gibson **Board Approval:** 10/15/19

Project Description:

Canals and flumes are assessed annually by District staff to assess and prioritize necessary 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 District Hydro Operations each spring for implementation to be achieved during the scheduled Canal outage. In 2020 the Hydro construction crew will repair Alarm 5 slide and perform flume marine grade plywood relining and structural repairs as needed and repair/patch the canal sections.

Basis for Priority:

These are projects that provide measurable advancement towards attaining the objectives of the District, but over which the District has a moderate level of control as to when they should be performed.

Project Financial Summary:			
Funded to Date:		Expenditures through end of year:	$ -
Spent to Date:		2020 - 2024 Planned Expenditures:	$ 2,500,000
Cash flow through end of year:		Total Project Estimate:	$ 2,500,000
Project Balance	$ 363,994	Additional Funding Required	$ 2,136,006

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	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

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$63,923
Water FCCs	53%		$72,083
			$0
Total	100%		$136,006

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Flume 46A Canal Conversion

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/14/19

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:	$ -	2020 - 2024 Planned Expenditures:	$ 2,200,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,200,000
Project Balance	$ -	Additional Funding Required	$ 2,200,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning/Enviro		$ 45,000	$ 40,000			$ 85,000
Geo/Design			$ 115,000			$ 115,000
Construction				$ 2,000,000		$ 2,000,000
FERC QCIP						$ -
TOTAL	$ -	$ 45,000	$ 155,000	$ 2,000,000	$ -	$ 2,200,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$0
Water FCCs	53%		$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Hydro Facility Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Gibson **Board Approval:** 10/15/19

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. In 2020 the plan is to install lighting on the penstock surge tank to comply with FAA regulations. The 3-mile long powerhouse road needs to be graded, rocked and reditched in 2020.

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:	$ -	2020 - 2024 Planned Expenditures:	$ 650,000
Cash flow through end of year:		Total Project Estimate:	$ 650,000
Project Balance	$ -	Additional Funding Required	$ 650,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 250,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 650,000
						$ -
TOTAL	$ 250,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 650,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$250,000
Total	100%		$250,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Powerhouse Automation Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project is to design, replace and reprogram end of life hydro-turbine governors, PLC hardware, and related SCADA reconfigurations.

Basis for Priority:

The project will enhance reliability of a critical power generation facility. This hardware is failing and has been a service reliability and maintenance issue. The life of this equipment is cycling out. The original installation was over 25 years ago. Parts for these units are no longer being made and they are difficult to service.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 375,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 375,000
Project Balance	$ -	Additional Funding Required	$ 375,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design	$ 50,000					$ 50,000
Construction		$ 100,000	$ 150,000			$ 250,000
Capitalized Labor	$ 25,000	$ 25,000	$ 25,000			$ 75,000
TOTAL	$ 75,000	$ 125,000	$ 175,000	$ -	$ -	$ 375,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$75,000
			$0
			$0
Total	100%		$75,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Spare Powerhouse Turbine Runner

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Kessler **Board Approval:** 10/15/19

Project Description:

The Pelton turbine runners (impulse turbines or water wheels) were installed in 1958 with a life expectancy of 30 - 40 years depending on operating and water conditions. It requires approximately 18 months to procure a new turbine runner if one of the two turbines were to fail. A spare turbine runner can be used for either of the two turbine-generator units as the units are identical. The estimated revenue loss of waiting for a new runner to be manufactured is $6 million based on loss of availability of one 10 MW unit for 18 months. The existing turbine runners are constructed of carbon steel and are not as resilient to wear and cracking as modern runners constructed of stainless steel. The District expended approximately $150,000 in welding and restoration of the two turbine runners in 2016. The primary risk of continuing to extend the service life of the aging turbine runners is that they can incur a sudden failure from stresses induced by and associated with the accumulation of start-ups and shutdowns of the turbine-generator units. While staff carefully inspects and monitors the condition of the runners for early warning signs, and makes repairs to areas subject to cracking and wear, the risk of sudden failure increases with time. The 2019 costs are to explore options for replacing the turbine runner with a modern design which will also consider improvements in efficiency (to produce more power per unit of water over a greater span of its operating range). The study will also evaluate the economy of purchasing two vs. one runner at a time considering the design will likely be custom, and there would be savings in casting two runners concurrently compared to at different times.

Basis for Priority:

Both powerhouse turbine-generator units have turbine runners that operated significantly past their predicted service life and are subject to failure. The revenue loss for waiting for a turbine wheel to be manufactured is approximately $6 million. Staff believes it is prudent to study options for replacing the runners, either minimally to maintain a spare, or to consider replacing both runners in light of overall manufacturing cost savings, and potential reliability/efficiency improvements.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ 10,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 85,000
Project Balance	$ (10,000)	Additional Funding Required	$ 85,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 75,000					$ 75,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 75,000	$ -	$ -	$ -	$ -	$ 75,000

Estimated Funding Sources	Percentage	2020 Amount
Water rates	100%	$85,000
		$0
		$0
Total	100%	$85,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: STUDY

Project Name: 2020 Canal Release Points Assessment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

This project will evaluate the Project 184 canal release points provide a condition assessment report. This report will be used to categorize the release points system for future CIP projects. Canal release point assessments are planned to occur every 5 years to give an overall condition of the system and to prioritize projects.

Basis for Priority:

The canal release points have not had an assessment done since 1999 and no priorities set to determine what work needs to be completed and what issues are needing to be addressed. It takes 14 hours for water to travel from the American River Diversion to Forebay Reservoir, making spillway releases at intervals along the canal a critical component of the Project 184 operations. Evaluating the release points for erosion and overall condition is required by Condition No. 41 of our FERC license.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:		Total Project Estimate:	$ 50,000
Project Balance	$ -	Additional Funding Required	$ 50,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 50,000					$ 50,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	47%		$23,500
Water FCCs	53%		$26,500
			$0
Total	100%		$50,000

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN **Program:** **Hydroelectric**

Project Number: STUDY

Project Name: 2021 Tunnel Assessment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

This project will evaluate the following tunnels and provide a condition assessment report:

Mill to Bull Tunnel
Hazel Creek
Pacific
Esmerelda
El Dorado
14 Mile
Camp Creek

In 2014 a portion of the Esmerelda tunnel collapsed and the tunnel repair and rehabilitation was completed in 2017. The Pacific, El Dorado, and Mill to Bull tunnels were inspected during the 2016 outage. Pacific, Camp Creek, and Hazel Creek Tunnels were inspected during the 2017 outage. 14 Mile tunnel was inspected in 2015 and will be lengthened in the Forebay dam rehab project.

This report will be used to categorize the tunnels for future CIP projects. Tunnel assessments are being scheduled every 5 years.

Basis for Priority:

The Project 184 tunnels should be inspected by competent persons every 5 years to determine what issues are needing to be addressed. Additionally, one third of the District's water supply would be out of service for an extended period in the event of a tunnel collapse 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:		**2020 - 2024 Planned Expenditures:**	**$ 35,000**
Cash flow through end of year:		**Total Project Estimate:**	**$ 35,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 35,000**

Description of Work	**Estimated Annual Expenditures**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Study/Planning		**$ 35,000**				**$ 35,000**
Design						**$ -**
Construction						**$ -**
						$ -
TOTAL	**$ -**	**$ 35,000**	**$ -**	**$ -**	**$ -**	**$ 35,000**

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Water Rates	100%		$0
			$0
			$0
Total	**100%**		**$0**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: STUDY

Project Name: 2022 Flume Assessment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

This project will provide structural and geotechnical evaluation on the wooden Flumes and geotechnical evaluation on the concrete flumes. Flume material, year built and length will also be verified and included in the update.

Basis for Priority:

The Project 184 flumes have not been fully evaluated by structural and geotechnical experts since around 2012. Intermittent checking of the flumes has been done in 2017 and 2019. Additionally, one third of the District's water supply would be out of service for an extended period in the event of a flume failure 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:		2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:		Total Project Estimate:	$ 50,000
Project Balance	$ -	Additional Funding Required	$ 50,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning			$ 50,000			$ 50,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ -	$ -	$ 50,000	$ -	$ -	$ 50,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: STUDY

Project Name: 2023 Canal Assessment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

This project will evaluate the Project 184 canal and provide a condition assessment report. This report will be used to categorize the canal system for future CIP projects. Canal assessments are planned to occur every 5 years to give an overall condition of the system and to prioritize projects.

Basis for Priority:

The canal system was last assessed in 2018. Additionally, one third of the District's water supply would be out of service for an extended period in the event of a canal breach 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:		2020 - 2024 Planned Expenditures:	$ 35,000
Cash flow through end of year:		Total Project Estimate:	$ 35,000
Project Balance	$ -	Additional Funding Required	$ 35,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning				$ 35,000		$ 35,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ 35,000	$ -	$ 35,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: STUDY

Project Name: 2024 Siphon Assessment

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Mutschler **Board Approval:** 10/15/19

Project Description:

Plume Creek and Alder Creek Siphon were last inspected in 2019 and 2018 respectively. Siphon assessments should be completed every five years to determine the condition of the siphon and to note any changes from the last inspection. A list of CIP projects will be developed from the assessment and a report generated. The inspection of the siphons are done with cameras that are mounted on guided remote operated vehicles and done while the siphon is empty.

Basis for Priority:

One third of the District's water supply would be out of service for an extended period in the event of a failure in the siphon 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:	$ 19,420
Spent to Date:	$ 19,420	2020 - 2024 Planned Expenditures:	$ 60,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 79,420
Project Balance	$ 30,580	Additional Funding Required	$ 29,420

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning					$ 60,000	$ 60,000
Design						$ -
Construction						$ -
						$ -
TOTAL	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000

Funding Sources	Percentage	2020 Amount
Water rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: 19013

Project Name: Hydro Crew Room Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Kessler **Board Approval:** 10/15/19

Project Description:

The crewroom at Camp 5 was built in 1951 and is in need of some improvements. The room is too small for the amount of staff working in the Hydro Division requiring some people to stand during meetings. There is only one unisex bathroom for over 20 employees. The plan is to add an additional 300 sq feet of space by removing the wall to a storage room. There are 2 different ceiling heights that would be redone. At the same time, the ceiling lights will be upgraded to LED energy efficent lighting. An ADA compliant bathroom will also be added. The building electrical panel will be upgraded to meet current electrical standards. The heating and air conditioning air distribution unit and ductwork will be relocated. County permits are needed to perform the recommended remodeling.

Basis for Priority:

The crewroom was built in 1951 and needs improvements to comply with ADA standards, improve lighting efficency and upgrade an outdated electrical panel.

Project Financial Summary:			
Funded to Date:	$ 47,871	Expenditures through end of year:	$ 26,774
Spent to Date:	$ 11,774	2020 - 2024 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 176,774
Project Balance	$ 21,098	Additional Funding Required	$ 128,903

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design	$ 20,000					$ 20,000
Construction		$ 130,000				$ 130,000
						$ -
TOTAL	$ 20,000	$ 130,000	$ -	$ -	$ -	$ 150,000

Funding Sources	Percentage	2020 Amount
Water rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Camp 5 Facility Power Improvements

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project is to design and implement more reliable power distribution from utility and backup generator. Currently the site has multiple voltage feeds, large voltage swings and suffers from load imbalances. The load imbalance and voltage swings are causing faster equipment degradation and increasing maintenance cost. Consolidating power to a single feed will alleviate the current problems and improve reliability of the site. The current generator is no longer sized adequately for the current load at the facility. This project would require installation of a larger generator.

Basis for Priority:

The project will improve power reliability to the facility.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design		$ 45,000				$ 45,000
Construction			$ 185,000			$ 185,000
						$ -
TOTAL	$ -	$ 45,000	$ 185,000	$ -	$ -	$ 230,000

Funding Sources	Percentage	2020 Amount
Water rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Diversion Facility Power Improvements

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project is to design and implement more reliable power distribution from utility and backup generator. Currently the site has multiple voltage feeds, large voltage swings and suffers from load imbalances. The load imbalance and voltage swings are causing faster equipment degradation and increasing maintenance cost. Consolidating power to a single feed will alleviate the current problems and improve reliability of the site. The current generator is no longer sized adequately for the current load at the facility. This project would require installation of a larger generator.

Basis for Priority:

The project will improve reliability of a critical water facility.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 235,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 235,000
Project Balance	$ -	Additional Funding Required	$ 235,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design		$ 50,000				$ 50,000
Construction			$ 185,000			$ 185,000
						$ -
TOTAL	$ -	$ 50,000	$ 185,000	$ -	$ -	$ 235,000

Funding Sources	Percentage	2020	Amount
Water rates	100%		$0
			$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Hydroelectric

Project Number: PLANNED

Project Name: Silver Lake Facility Power Improvements

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project is to design and implement a reliable power distribution from the utility and a backup generator. Currently the site is powered by solar panels and a large battery bank. Due to heavy tree shading and high elevation, this site is operating near power loss. Adding utility power and small backup generator will provide consistent and reliable power for critical lake gate operations, while eliminating a large battery bank at a remote location as well.

Basis for Priority:

The project will improve reliability of a critical water facility.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 75,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 75,000
Project Balance	$ -	Additional Funding Required	$ 75,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design		$ 25,000				$ 25,000
Construction		$ 50,000				$ 50,000
						$ -
TOTAL	$ -	$ 75,000	$ -	$ -	$ -	$ 75,000

Funding Sources	Percentage	2020 Amount
Water rates	100%	$0
		$0
		$0
Total	100%	$0

Funding Comments:

Recreation Projects

2020 **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:** **10/15/19**

Project Description:

This is a program to replace infrastructure at District-owned recreation facilities that have failed or reached end of useful life. Funding will be used for recreation facilities such as road and building improvements that will extend the life of the asset. Shoreline stabilization projects to protect water quality and existing assets such as road ways, boat ramps, day use areas and campgrounds. Need to make numerous repairs to the roadways within SPRA; all campground access roads need to be replaced and have storm water mitigation features incorporated. Main park roadway, Lakewood Drive, will need to be resealed within the next 5 years. Access road to Scout Hill youth camp should be chip sealed, at a minimum, to reduce the amount of annual rehabilitation that occurs every spring. Lakewood Dr. Stabilization is to extend the existing riprap installed in 2006 along the shoreline between Chimney and Hazel Campgrounds. This area has seen ground movement over the last three winters and preventative measures, riprap, need to be put in place to ensure Lakewood Dr. does not slide into Jenkinson Lake, as it did in 2006. Sierra Campground Loop is reaching end of life and needs to be resurfaced and improved with storm water control devices to reduce sediment laden runoff from entering Jenkinson Lake.

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:		**2020 - 2024 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**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Lakewood Dr. Stabilization	**$ 50,000**					**$ 50,000**
Sierra CG Loop Paving		**$ 50,000**				**$ 50,000**
Scout Hill Paving			**$ 50,000**			**$ 50,000**
Other Projects				**$ 50,000**	**$ 50,000**	**$ 100,000**
TOTAL	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 250,000**

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Water Rates	100%		$50,000
Total	**100%**		**$50,000**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	Recreation

Project Number: PLANNED

Project Name: Sly Park Recreation Area Facility Improvements

Project Category: Master Planning

Priority: 2 **PM:** Hawkins **Board Approval:** 10/15/19

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 storm water 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 throughout 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:		2020 - 2024 Planned Expenditures:	$ 365,000
Cash flow through end of year:		Total Project Estimate:	$ 365,000
Project Balance	$ -	Additional Funding Required	$ 365,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Pinecone DUA	$ 75,000					$ 75,000
Main DUA Expansion		$ 95,000				$ 95,000
Study/Planning			$ 45,000		$ 50,000	$ 95,000
Design				$ 50,000		$ 50,000
Construction				$ 50,000		$ 50,000
TOTAL	$ 75,000	$ 95,000	$ 45,000	$ 100,000	$ 50,000	$ 365,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$75,000
			$0
			$0
Total	100%		$75,000

Funding Comments:

2020 CAPITAL IMPROVEMENT PLAN Program: Recreation

Project Number: 18023

Project Name: Sly Park Recreation Area Day Use Area Improve

Project Category: Reliability & Service Level Improvements

Priority: 3 **PM:** Hawkins **Board Approval:** 10/15/19

Project Description:

Funds will be used to begin the initial study and plan development of expanding the Day Use parking capacity near the entrance of SPRA and increasing the number of day use amenities in this area. Funds will also be used to hire a consultant to look into the possibility of securing grant funding to apply towards the development and construction of this project. By expending design funding in 2020 the District will then have a "shovel ready" project which will increase the possibility of securing grant funding during 2021 or 2022 to offset the cost of construction in 2023. SPRA has experienced an annual average increase of 8% in the number of day use visitors over the last 5 years, often resulting in the closure of the park on busy summer weekends due to safety concerns and a lack of parking and amenities. Increasing the day use capacity near the entrance of the park will help offset the amount of time the park is closed and allow the capture of some of the lost revenue.

Basis for Priority:

Project Financial Summary:			
Funded to Date:	$ 25,000	Expenditures through end of year:	$ 25,506
Spent to Date:	$ 10,506	2020 - 2024 Planned Expenditures:	$ 85,000
Cash flow through end of year:	$ 15,000	Total Project Estimate:	$ 110,506
Project Balance	$ (506)	Additional Funding Required	$ 85,506

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Design	$ 25,000					$ 25,000
Study/Planning		$ 5,000	$ 5,000			$ 10,000
Construction				$ 300,000		$ 300,000
Grant Funding				$ (250,000)		$ (250,000)
TOTAL	$ 25,000	$ 5,000	$ 5,000	$ 50,000	$ -	$ 85,000

Funding Sources	Percentage	2020 Amount
Water Rates	100%	$25,506
		$0
		$0
Total	100%	$25,506

Funding Comments:

General District Projects

2020 CAPITAL IMPROVEMENT PLAN Program: General District

Project Number: 16037

Project Name: SCADA Configuration and Alarm Response

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

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:	$ 27,053
Spent to Date:	$ 20,573	2020 - 2024 Planned Expenditures:	$ 135,000
Cash flow through end of year:	$ 6,480	Total Project Estimate:	$ 162,053
Project Balance	$ 2,947	Additional Funding Required	$ 132,053

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
EDHWWTP	$ 45,000					$ 45,000
Res A		$ 45,000				$ 45,000
Collections			$ 45,000			$ 45,000
						$ -
TOTAL	$ 45,000	$ 45,000	$ 45,000	$ -	$ -	$ 135,000

Estimated Funding Sources	Percentage	2020 Amount
Wastewater Rates	40%	$16,821
Water Rates	60%	$25,232
		$0
Total	100%	$42,053

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 18033

Project Name: Radio Telemetry and Network Replacement Program

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

Life cycle replacement of our private radio SCADA network components. This radio system transfers critical monitoring data from 180 + of our sewer and water pump stations into our network. This radio system does not carry monthly service charges and continues to provide reliable data at a low ownership costs.

Rolling improvement program.

Basis for Priority:

Many of our radios in service have passed their service life and are deteriorating slowly. This CIP would allow replacement of older telemetry (generally around 15 years of age or older) and any associated hardware such as antennas, antenna cable, protective lighting, etc.

Project Financial Summary:			
Funded to Date:	$ 46,000	Expenditures through end of year:	$ 43,896
Spent to Date:	$ 33,896	2020 - 2024 Planned Expenditures:	$ 115,000
Cash flow through end of year:	$ 10,000	Total Project Estimate:	$ 158,896
Project Balance	$ 2,104	Additional Funding Required	$ 112,896

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Hardware	$ 35,000	$ 15,000	$ 15,000	$ 10,000	$ 10,000	$ 85,000
Capitalized Labor	$ 10,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 30,000
						$ -
						$ -
TOTAL	$ 45,000	$ 20,000	$ 20,000	$ 15,000	$ 15,000	$ 115,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	60%		$25,738
Wastewater Rates	40%		$17,158
			$0
Total	100%		$42,896

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 18044

Project Name: WAN Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eberhard **Board Approval:** 10/15/19

Project Description:

Project implements new network router equipment and establishes new fiber-optic service delivery points to provide needed upgrades to the District's existing Wide Area Network (WAN) infrastructure. The project deploys a next generation solution to meet the District's site to site connectivity requirements, improves service reliability and performance while creating a more scalable and flexible architecture to meet future business needs.

Basis for Priority:

Major elements of the District's Wide Area Network (WAN) essential to District operations, services, and security, have reached the end of their useful life and require replacement.

Project Financial Summary:			
Funded to Date:	$ 349,967	Expenditures through end of year:	$ 323,120
Spent to Date:	$ 23,120	2020 - 2024 Planned Expenditures:	$ 100,000
Cash flow through end of year:	$ 300,000	Total Project Estimate:	$ 423,120
Project Balance	$ 26,847	Additional Funding Required	$ 73,153

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 50,000	$ 50,000				$ 100,000
						$ -
TOTAL	$ 50,000	$ 50,000	$ -	$ -	$ -	$ 100,000

Funding Sources	Percentage	2020	Amount
Water rates	60%		$13,892
Wastewater rates	40%		$9,261
			$0
Total	100%		$23,153

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 18055

Project Name: Hansen 7 Software Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sundaram **Board Approval:** 10/15/19

Project Description:

This project replaces the existing Hansen 7 enterprise software application with a modern enterprise solution providing superior features and functionality, including mobile device access and easier integration to other District systems. The project is anticipated to transform and streamline many current business processes and operations that now require time-consuming workarounds developed to overcome limitations in the current software.

Basis for Priority:

The Hansen 7 enterprise software application has reached the end of its useful and can no longer be adapted to meet business needs. The software is used daily by over 150 employees for customer service, utility billing, asset maintenance, and many other purposes.

Project Financial Summary:			
Funded to Date:	$ 100,000	Expenditures through end of year:	$ 385,578
Spent to Date:	$ 85,578	2020 - 2024 Planned Expenditures:	$ 2,400,000
Cash flow through end of year:	$ 300,000	Total Project Estimate:	$ 2,785,578
Project Balance	$ (285,578)	Additional Funding Required	$ 2,685,578

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Consulting	$ 200,000	$ 200,000	$ 200,000			$ 600,000
Implementation	$ 500,000	$ 500,000	$ 500,000			$ 1,500,000
Capitalized Labor	$ 100,000	$ 100,000	$ 100,000			$ 300,000
						$ -
TOTAL	$ 800,000	$ 800,000	$ 800,000	$ -	$ -	$ 2,400,000

Funding Sources	Percentage	2020	Amount
Water rates	60%		$651,347
Wastewater rates	40%		$434,231
			$0
Total	100%		$1,085,578

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 19028

Project Name: Datacenter SCADA Segmentation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Proctor **Board Approval:** 10/15/19

Project Description:

The project replaces end-of-life network equipment and makes improvements to the secure gateway into the Supervisory and Data Acquision (SCADA) network. The SCADA network provides mission critical industrial process control of automated treatment and operations functions. The solution implements segmentation and controls between the District's business and SCADA networks that is designed to meet current security best practices while also improving performance and reliability.

Basis for Priority:

Equipment that comprises significant portions of the secure SCADA network gateway has reached the end of its useful life and requires replacement. If the aging equipment or operating system software was to fail or become unavailable for any reason, the best case scenario is a minor financial impact due to a loss of productivity. However, the potential for significant disruption, or worse, is very real.

Project Financial Summary:			
Funded to Date:	$ 30,000	Expenditures through end of year:	$ 200,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 200,000	Total Project Estimate:	$ 250,000
Project Balance	$ (170,000)	Additional Funding Required	$ 220,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 50,000					$ 50,000
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2020	Amount
Water rates	60%		$132,000
Wastewater rates	40%		$88,000
			$0
Total	100%		$220,000

Funding Comments:

2020 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: 19029

Project Name: Wyse Laptop Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Tarbox **Board Approval:** 10/15/19

Project Description:

The project replaces a range of mobile computing equipment and operating system software with modern solutions providing superior features, functionality, and security. The equipment is used daily by a mobile workforce of over 100 staff to perform a wide array of mission critical and essential duties. Most users of the modern mobile equipment this project provides will further benefit from improved mobile capabilities of the Hansen 7 Software Replacement project (18055) anticipated to transform and streamline many current business processes and operations.

Basis for Priority:

The equipment and operating system software have reached the end of their useful life and require replacement. As the aging equipment fails, the best case scenario is a minor financial impact due to a loss of productivity. However, as the operating system becomes unsupported and increasingly vulnerable over time to compromise, the potential for significant disruption, or worse, is very real.

Project Financial Summary:			
Funded to Date:	$ 20,000	Expenditures through end of year:	$ 100,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 50,000
Cash flow through end of year:	$ 100,000	Total Project Estimate:	$ 150,000
Project Balance	$ (80,000)	Additional Funding Required	$ 130,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 50,000					$ 50,000
						$ -
TOTAL	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000

Funding Sources	Percentage	2020	Amount
Water rates	60%		$78,000
Wastewater rates	40%		$52,000
			$0
Total	100%		$130,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Boardroom Projection System Replacement and Live Streaming Upgrade

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Tarbox **Board Approval:** 10/15/19

Project Description:

Replaces the end-of-life Boardroom projection system and adds equipment to enable live streaming of Board meetings to the Internet from multiple camera views presented in a single multiframe webpage. Solution will include a means to live stream Board meetings from alternate locations.

Basis for Priority:

The existing Boardroom video projection system has reached the end of its useful life and can no longer be adapted to meet current technical requirements. The Board has directed staff to provide a multi-camera live solution that includes streaming views of the presentation, Board members, and speakers concurrently to an Internet webpage.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 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					
	2020	2021	2022	2023	2024	Total
Study/Planning	$ 5,000					$ 5,000
Design	$ 5,000					$ 5,000
Construction	$ 80,000					$ 80,000
						$ -
TOTAL	$ 90,000	$ -	$ -	$ -	$ -	$ 90,000

Funding Sources	Percentage	2020 Amount
Water Rates	60%	$54,000
Wastewater Rates	40%	$36,000
		$0
Total	100%	$90,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Information Systems Replacement & Development

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Sundaram **Board Approval:** 10/15/19

Project Description:

Ongoing technology program that develops new solutions to replace obsolete information systems and business processes which no longer meet business or information security needs. The program analyzes functional and technical requirements, plus industry best practices to deliver modern, efficient, adaptable, secure, and innovative solutions before current systems or processes fail with potentially catastrophic results.

Basis for Priority:

Information systems and business processes are critical to the District's mission and ongoing operation. Over time they can reach functional or technical limits and can no longer be adapted to meet essential needs, including regulatory, operational, technology, or security requirements. Continued use of obsolete or failing systems or processes causes operational inefficiencies at a minimum, and quite possibly increased risk of service interruptions, regulatory fines, data breach, or worse.

Project Financial Summary:					
Funded to Date:	$ -	Expenditures through end of year:		$	80,000
Spent to Date:	$ -	2020 - 2024	Planned Expenditures:	$	2,100,000
Cash flow through end of year:	$ 80,000	Total Project Estimate:		$	2,180,000
Project Balance	$ (80,000)	Additional Funding Required		$	2,180,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Replace EOL Enterprise Asset, Work & Customer Management Database	See Hansen 7 Upgrade project	See Hansen 7 Upgrade project	See Hansen 7 Upgrade project			$ -
Replace EOL SCADA Databases (Wonderware 2014)	See SCADA Wonderware 2014 project					
Develop Automated SCADA Compliance & Operational Reporting (DreamReports)	$ 135,000	$ 45,000				$ 180,000
Develop Enterprise Utility Network Geodatabase (required to support Hansen 7 upgrade project)	$ 50,000					$ 50,000
Replace EOL Lock-out Tag-out (LOTO) Database	$50,000 Fund in 2019					$ -
Develop Enterprise Log Aggregation & Security Event Database	$ 125,000	$ 125,000				$ 250,000
Develop Enterprise Fleet Telematics & Tracking Database		$ 100,000				$ 100,000
Replace EOL Sewer Video Inspection (Pipelogix) Database	$ 50,000					$ 50,000
Replace Information Systems on Windows 2012 Servers (EOL 2024)			$ 50,000	$ 200,000	$ 50,000	$ 300,000
Develop Operator Rounds & Decision Support (IntelaTrac) Database	$ 150,000					$ 150,000
Develop Plant Operations (Ops Plan) Database		$ 200,000	$ 50,000	$ 50,000		$ 300,000
Develop Energy Use & Management (EnergyMetrix) Database	$ 165,000	$ 15,000	$ 15,000			$ 195,000
Upgrade SCADA (Wonderware) Databases				$ 175,000		$ 175,000
Develop Contract, Insurance & Risk Management Database			$ 50,000			$ 50,000
Acquire Upgraded Aerial Imagery for Geodatabase		$ 50,000		$ 50,000		$ 100,000
Upgrade Accounting & Purchasing Database	$30,000 Fund in 2019					$ -
Develop ERP (Enterprise Resource Planning) Database for FIS, HRIS					$ 200,000	$ 200,000
TOTAL	$ 675,000	$ 535,000	$ 165,000	$ 475,000	$ 250,000	$ 2,100,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	60%		$453,000
Wastewater Rates	40%		$302,000
Total	100%		$755,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Information Technology Infrastructure & Security

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Eberhard **Board Approval:** 10/15/19

Project Description:

Ongoing program that ensures the reliability, security, and performance of the complex technology infrastructure that serves the District's varied information systems and communications requirements. The program analyzes functional and technical requirements, plus industry best practices to deliver modern, efficient, flexible, scalable, secure, and innovative solutions before current equipment, systems, or services fail with potentially catastrophic results.

Basis for Priority:

The complex and expansive information technology environment is critical to the District's mission and ongoing operation. Over time the components, which includes equipment, systems, platforms, and services, can reach functional or technical limits and can no longer be adapted to meet essential needs, including regulatory, operational, technology, or security requirements. Continued use of obsolete or failing IT infrastructure causes operational inefficiencies at a minimum, and quite possibly increased risk of service interruptions, regulatory fines, data breach, or worse.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ -
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 2,825,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 2,825,000
Project Balance	$ -	Additional Funding Required	$ 2,825,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Upgrade EOL Datacenter Core Network & Intrusion Protection System (IPS)	$ 750,000					$ 750,000
Replace EOL Mobile Computers	See Wyse Laptop Replacement Project					
Replace EOL WAN Routers and T1 Circuits	See WAN Upgrade Project	See WAN Upgrade Project				
Replace EOL Facility Host Computers & Intrusion Protection Systems (IPS)	$ 300,000	$ 450,000				$ 750,000
Install Life Safety Systems & Access Improvements in Backup Datacenter	$ 100,000					$ 100,000
Install Facility-wide Secure Network Access (NAC) for Operators & Security Systems	See Wireless LAN Upgrade Project	See Wireless LAN Upgrade Project				$ -
Replace EOL Network Firewall Systems		$ 100,000			$ 125,000	$ 225,000
Replace Infrastructure Systems on Windows 2012 Servers (EOL 2024)			$ 50,000	$ 200,000	$ 50,000	$ 300,000
Replace EOL Datacenter Cluster Computers					$ 700,000	$ 700,000
TOTAL	$ 1,150,000	$ 550,000	$ 50,000	$ 200,000	$ 875,000	$ 2,825,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	60%		$690,000
Wastewater Rates	40%		$460,000
Total	**100%**		**$1,150,000**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: SCADA Master Plan Implementation

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

This CIP is to develop SCADA automatic reporting and a detailed CIP plan as recommended by our hired consultant. Please refer to the SCADA Master Plan.

Basis for Priority:

There is potential for "wasted work" and great operational inefficiencies amounting to 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:	$ -	2020 - 2024 Planned Expenditures:	$ 1,195,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 1,195,000
Project Balance	$ -	Additional Funding Required	$ 1,195,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Standards update			$ 45,000			$ 45,000
Master Plan Update		$ 100,000				$ 100,000
Res 1 SCADA upgrade			$ 350,000			$ 350,000
EDHWW SCADA upgrade				$ 400,000		$ 400,000
Collections SCADA upgrade					$ 300,000	$ 300,000
TOTAL	$ -	$ 100,000	$ 395,000	$ 400,000	$ 300,000	$ 1,195,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	60%		$0
Wastewater Rates	40%		$0
			$0
Total	100%		$0

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: SCADA Wonderware 2014 Replacement

Project Category: Reliability & Service Level Improvements

Priority: 2 **PM:** Volcansek **Board Approval:** 10/15/19

Project Description:

The project replaces obsolete Wonderware 2014 SCADA System Platform application and associated servers utilized throughout the District.

The proposed project improves operational efficiency, introduces enterprise wide visibility for enhanced decision support, and improves operator productivity. The new software will maintain compatibility with fast changing IT and cybersecurity requirements.

Once implemented and configured, system platform 2017 will provide:
- IT/OT Convergence Platform
- Simpler access and use by staff
- New library for automation and standards
- Scalable product for future use
- Latest visualization technologies

Basis for Priority:

There is potential for "wasted work" and large operational inefficiencies of hundreds of thousands of dollars or more by moving forward on ongoing SCADA development projects without upgrading to latest SCADA system platform.

Project Financial Summary:			
Funded to Date:	$ -	Expenditures through end of year:	$ 50,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 175,000
Cash flow through end of year:	$ 50,000	Total Project Estimate:	$ 225,000
Project Balance	$ (50,000)	Additional Funding Required	$ 225,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
HW/SW/Other	$ 50,000					$ 50,000
Professional Services	$ 50,000					$ 50,000
Capitalized Labor	$ 75,000					$ 75,000
TOTAL	$ 175,000	$ -	$ -	$ -	$ -	$ 175,000

Estimated Funding Sources	Percentage	2020 Amount
Water Rates	60%	$135,000
Wastewater Rates	40%	$90,000
		$0
Total	100%	$225,000

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: PLANNED

Project Name: Security Equipment Reliability Program

Project Category: Reliability & Service Level Improvements

Priority:	2	PM:	Kilburg	Board Approval:	10/15/19

Project Description:

Integrated security systems have been protecting District 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 Drinking Water Risk Assessment, FERC Security Assessment, Emergency Operations and Department Emergency Actions Plans as required by the Federal Safe Drinking Water Act, Title IV - Drinking Water Security and Safety, and America's Water Infrastructure Act of 2018.

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:	$ 140,000
Spent to Date:	$ -	2020 - 2024 Planned Expenditures:	$ 150,000
Cash flow through end of year:	$ 140,000	Total Project Estimate:	$ 290,000
Project Balance	$ (140,000)	Additional Funding Required	$ 290,000

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 150,000
						$ -
TOTAL	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 150,000

Estimated Funding Sources	Percentage	2020	Amount
Water Rates	100%		$170,000
			$0
			$0
Total	100%		$170,000

Funding Comments:

2020 **CAPITAL IMPROVEMENT PLAN** **Program:** **General District**

Project Number: **Planned**

Project Name: **Vehicle Replacement**

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

Priority: **2** **PM:** **Warden** **Board Approval:** **10/15/19**

Project Description:

The following vehicle replacements are planned for 2020 - 2024:

2020: 2-1/2 ton 4X4 pickups, 1-1 ton 4X4 service truck, 1- 4X4 SUV, 1-1 1/2 ton 4X4 service truck with crane, 1-1 ton 4X4 flatbed extended cab truck, 1 used-10-11 yard dump truck.
2021: 2-1/2 ton 4X4 pickups, 1-4X4 SUV's, 2-1 ton 4X4 service truck, 1-1 1/2 ton 4X4 service truck with crane, 1- used 20,000 lb crane truck, 1- used 4 thousand gal water truck.
2022: 3-used 6-7 yard dump trucks, 3-1/2 ton 4X4 pickup.
2023: 4-1/2 ton 4X4 pickups, 3-used 6-7 yard dump trucks.
2024: 2-1/2 ton 4X4 pickups, 1-used 10 yard dump truck, 1-1 ton 4X4 service truck, 1-used transfer truck, 1- vacume pumper truck 52,00 lb.
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:		**Expenditures through end of year:**	**$ -**
Spent to Date:	**$ -**	**2020 - 2024 Planned Expenditures:**	**$ 2,698,000**
Cash flow through end of year:	**$ -**	**Total Project Estimate:**	**$ 2,698,000**
Project Balance	**$ -**	**Additional Funding Required**	**$ 2,698,000**

Description of Work	**Estimated Annual Expenditures**					
	2020	**2021**	**2022**	**2023**	**2024**	**Total**
Vehicles	**$ 440,000**	**$ 621,000**	**$ 492,000**	**$ 500,000**	**$ 645,000**	**$ 2,698,000**
						$ -
						$ -
						$ -
TOTAL	**$ 440,000**	**$ 621,000**	**$ 492,000**	**$ 500,000**	**$ 645,000**	**$ 2,698,000**

Estimated Funding Sources	**Percentage**	**2020**	**Amount**
Water Rates	100%		$440,000
			$0
			$0
Total	**100%**		**$440,000**

Funding Comments:

2020	CAPITAL IMPROVEMENT PLAN	Program:	General District

Project Number: 18043

Project Name: Wireless LAN Upgrade

Project Category: Reliability & Service Level Improvements

Priority:	3	PM:	Eberhard	Board Approval:	10/15/19

Project Description:

Project implements wireless networks and network access control security system in all major District facilities. The project establishes new secure Wi-Fi service delivery points to provide needed network access to mobile devices within the District's plants, corporate yards, and office buildings which frequently lack cellular service coverage. The project provides a modern solution to meet the District's growing mobile workforce connectivity requirements, improves network security and performance while creating a more scalable and flexible architecture to meet current and future business needs.

Basis for Priority:

The District's mobile workforce frequently encounters poor or no cellular service within District plants, corporate yards, and buildings. Mobile communications provide staff with mission critical alerts and decision support to ensure safety, service quality and reliability, while also increasing efficiency.

Project Financial Summary:			
Funded to Date:	$ 50,000	Expenditures through end of year:	$ 8,872
Spent to Date:	$ 8,872	2020 - 2024 Planned Expenditures:	$ 300,000
Cash flow through end of year:	$ -	Total Project Estimate:	$ 308,872
Project Balance	$ 41,128	Additional Funding Required	$ 258,872

Description of Work	Estimated Annual Expenditures					
	2020	2021	2022	2023	2024	Total
Study/Planning						$ -
Design						$ -
Construction	$ 150,000	$ 150,000				$ 300,000
						$ -
TOTAL	$ 150,000	$ 150,000	$ -	$ -	$ -	$ 300,000

Funding Sources	Percentage	2020	Amount
Water rates	60%		$65,323
Wastewater rates	40%		$43,549
			$0
Total	100%		$108,872

Funding Comments: