

# Staff Report

for the Engineering Committee Meeting of August 11, 2020

**TO:** Engineering Committee  
**FROM:** Doug Roderick, P.E., Engineering Manager  
**DATE:** August 4, 2020  
**SUBJECT:** 5-Year Capital Improvement Plan

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***ENGINEERING***

**RECOMMENDATION:**

Review and discuss the preliminary 5-Year Capital Improvement Plan (CIP) developed by staff.

**BACKGROUND:**

The intent of this item is to review and discuss the preliminary 5-Year CIP with Committee members. The 5-Year CIP includes projects for Engineering, Hydroelectric, Recreation, Maintenance and Operations. The preliminary 5-Year CIP was utilized in the development of the 2021 capital budget.

**BUDGETARY IMPACT:**

None.

**ATTACHMENTS:**

- Preliminary 5-Year Capital Improvement Plan

DR

### 5-Year CIP (Draft) 6-2-2020

Dept./Account	Reg.Req.	FATR Proj.	Project Name	Budget 2021	Budget 2022	Budget 2023	Budget 2024	Budget 2025
<b>10114 Administration</b>								
<b>52915 Program Budget: Non-Programmatic</b>				<b>\$20,000</b>	<b>\$30,000</b>	<b>\$30,000</b>	<b>\$30,000</b>	<b>\$30,000</b>
	ADA	NPN	Security and ADA upgrades of facilities for public and staff safety	\$20,000	\$30,000	\$30,000	\$30,000	\$30,000
<b>10119 Safety</b>								
<b>52915 Program Budget: Non-Programmatic</b>				<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$25,000</b>	<b>\$0</b>
		1033	Safety Fall Protection Training Tower & Confined Space Facility				\$25,000	
<b>10151 Engineering</b>								
<b>52907 Program Budget: Treated Water Pipeline Replacement</b>				<b>\$2,050,000</b>	<b>\$3,300,000</b>	<b>\$2,300,000</b>	<b>\$900,000</b>	<b>\$1,650,000</b>
		6962	Hwy 49 @ Christian Life Way-Replace 1500 ft. with 8 inch	\$500,000				
		2324	Meadow Brook-Copper relocate (North Auburn) relocate pipeline from back of house(s)	\$400,000				
		2182	North Day Road Pipeline Replacement-Replacement of badly deteriorated pipeline on North Day Road	\$850,000				
		2323	Willaura Acres- (Lime Kiln)-Replacement of deteriorated water mains and services in this area	\$150,000	\$1,500,000			
		6966	Osborne Hill Pipeline	\$100,000	\$500,000			
			Live Oak new main and services (4,600 ft)	\$50,000	\$1,250,000			
			East Bennett Loop (2,600 ft)		\$50,000	\$1,000,000		
		6930	Ridge Rd-Sierra College Dr/Hughes Road-1,240 ft. of 16 Inch and 910 Ft. of 20 inch-Replacement and upgrade of waterline			\$950,000		
		2314	Peninsula Campground-Replacement of waterline			\$300,000		
			Glenbrook Basin Pipes (1,500 ft)				\$400,000	
		2387	Jackson Meadows Woodcamp Campground-Replacement of waterline			\$50,000	\$250,000	
			Upper Banner Main Extension (4,400 ft of new pipeline and 7,300 ft of upsized pipeline)				\$250,000	\$1,500,000
		2314	Alta Sierra New Main and Services (4,650 ft)					\$100,000
			Dry Creek at Tractor Supply					\$50,000

<b>52908 Program Budget: Pressure Reducing Valve (PRV) Program</b>				<b>\$480,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>
	2371	Dorsey Drive-Replace badly deteriorated PRV	\$130,000					
	2370	Berggren Lane-Replace badly deteriorated PRV	\$250,000					
	1010	Slilver Lane-Replace badly deteriorated PRV	\$100,000					
	2369	Brewer # 1-Replace badly deteriorated PRV			\$125,000			
	2368	Nancy Way-Replace badly deteriorated PRV			\$125,000			
	2316	Echo Ridge-Replace badly deteriorated PRV				\$125,000		
	2317	Slate Creek-Replace badly deteriorated PRV				\$125,000		
	2318	East Ridge-Replace badly deteriorated PRV					\$125,000	
	2320	McPhersons-Replace badly deteriorated PRV					\$125,000	
	2319	Glenwood-Replace badly deteriorated PRV						\$125,000
	2367	Sunset-Replace badly deteriorated PRV						\$125,000

<b>52910 Program Budget: Raw Water Replacement</b>				<b>\$1,250,000</b>	<b>\$2,500,000</b>	<b>\$800,000</b>	<b>\$4,000,000</b>	<b>\$1,500,000</b>
	1098	Santini Siphon 1-Replace 1 & 2-bottleneck & overtopping	\$350,000					
	NPN	South Yuba Repairs - major repairs on facility to improve reliability	\$50,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
	8099	Maben Canal (Kyler Canal to Retrac Way)	\$100,000	\$800,000				
	7809	Kyler Canal-Replace and enlarge canal	\$100,000	\$900,000				
		Hayt #1, #5 and #6 (200 ft, 160 ft, 430 ft)	\$250,000					
	2373	Pet Hill Canal Extension Repair - Upgrade pipeline for capacity	\$150,000					
	2329	China Drop Pipe Replacement of aerial pipeline-supports badly deteriorated	\$200,000	\$100,000				
		Clipper Creek Techite (8,600 ft of 24-inch)	\$50,000	\$200,000			\$2,500,000	\$1,000,000
	2337	Smartsville raw water system-Repair and replacement of badly deteriorated pipelines				\$50,000		
	2372	Markell Spill Replacement-Replace badly deteriorated spillway				\$150,000		
	6967	Newtown Canal Headworks				\$100,000	\$450,000	
	2056	Lester Canal Relocation (Siphon)-Replace and relocate approx. 1400 Ft. of open canal.					\$350,000	
	2391	Fawn Hill Canal Piping - Canal pipe is sliding downhill					\$150,000	
		Camp Far West Drop Pipe					\$50,000	
		Lake Vera						\$800,000
		Doty North						
		Tarr Canal at Old Auburn Rd						
		Smith Moulton Pipeline						
		Sontag Canal berm work						

<b>52911 Program Budget: Backbone Extension</b>				<b>\$0</b>	<b>\$2,500,000</b>	<b>\$2,200,000</b>	<b>\$1,800,000</b>	<b>\$850,000</b>	
				<b>CAPACITY FEES</b>	\$0	\$500,000	\$500,000	\$500,000	\$0
				<b>TAX REVENUES</b>	\$0	\$2,000,000	\$1,700,000	\$1,300,000	\$850,000
	2255	E. George to LWW Pipeline-Extension of waterlines for redundancy and customers			\$2,500,000	\$2,200,000	\$1,800,000	\$750,000	
	2254	LWW to Smartsville WTP-Extension of waterlines for redundancy and customers						\$100,000	

<b>52912 Program Budget: Community Investment</b>				<b>\$0</b>	<b>\$900,000</b>	<b>\$700,000</b>	<b>\$800,000</b>	<b>\$100,000</b>
	2181	Loma Rica Drive DFWLE-Assist, Design and Construction of a pipeline for existing neighborhoods approved by the Engineering Committee			\$800,000	\$600,000		
	2409	Maranatha Place DFWLE-Assist, design and construction of a pipeline for existing neighborhoods approved by the Engineering Committee.					\$700,000	
		Wharf Hydrant Replacement		\$0	\$100,000	\$100,000	\$100,000	\$100,000

<b>52913 Program Budget: Extended CEQA</b>				<b>\$30,000</b>	<b>\$0</b>	<b>\$30,000</b>	<b>\$0</b>	<b>\$0</b>
	6593-2	Cascade Canal-Banner Cascade Pipeline-MMRP items from LCCBCP CEQA		\$30,000		\$30,000		

<b>52914 Program Budget: Sediment Removal</b>				<b>\$0</b>	<b>\$600,000</b>	<b>\$1,000,000</b>	<b>\$1,700,000</b>	<b>\$2,100,000</b>
	6963	Orr Creek Reservoir-Clean and remove sediment to increase capacity						
		Combie- Remove sediment on the eastside of reservoir to increase capacity					\$500,000	\$500,000
	8515	Greenhorn Creek-Rollins Reservoir-remove sediment from Greenhorn Creek to increase capacity			\$500,000	\$500,000	\$500,000	\$500,000
	6877	Steephollow-Remove sediment at Steep Hollow and protection of NID Hydro Facilities					\$500,000	\$500,000
	2213	Dutch Flat Afterbay-Remove sediment to increase capacity			\$100,000	\$500,000		
	2325	Union Reservoir-Remove sediment to increase capacity					\$100,000	\$350,000
	2326	Rex Reservoir-Remove sediment to increase capacity					\$100,000	\$250,000

52915 Program Budget: Non-Programmatic			\$2,200,000	\$2,100,000	\$5,600,000	\$2,800,000	\$4,600,000
	6746	Combie Phase 1-Replacement-Combie pipeline bypass	\$400,000				
	7032	Hemphill/Fish Diversion - Improve fish passage	\$300,000	\$1,500,000	\$2,000,000		
	2376	North Auburn Highlift Pumps - Replace motor control center, VFDs and new generator	\$600,000				
	6996	LWW WTP-Upgrade drying beds, backwash pumps and canal intake screen	\$600,000				
		Loma Rica Dam Seismic Stability Upgrades		\$250,000	\$500,000	\$100,000	\$1,000,000
	2375	Clear Well Expansion Loma Rica TP - Add additional clearwell volume for higher plant flows	\$100,000	\$150,000	\$2,000,000		
	2414	Orr Creek Reservoir-CEQA-Repair leaking and badly deteriorated facility		\$100,000	\$800,000		
	2378	Loma Rica WTP Modify CT - Retrofit facility to improve CT	\$150,000				
	2321	LR WTP Pressure Vessel - Replacement of badly deteriorated pressure vessels			\$100,000	\$1,000,000	\$1,000,000
	7013	Centennial Water Supply Project - Facility for addition future demand and potential drought	\$50,000	\$100,000	\$100,000	\$100,000	\$100,000
		Upper Banner Storage Tank				\$100,000	\$2,500,000
	2374	E. George Effluent Expansion - Remove constriction in effluent pipeline			\$50,000	\$1,000,000	
	2322	David Way Pump Station PS Rehab.-Aged PS with no redundant pumps			\$50,000	\$500,000	
<b>Total - Engineering Capital</b>			<b>\$6,010,000</b>	<b>\$11,650,000</b>	<b>\$12,380,000</b>	<b>\$11,750,000</b>	<b>\$11,050,000</b>
<b>Water Reserve</b>			<b>\$7,728,799</b>	<b>\$2,638,330</b>	<b>\$2,479,863</b>	<b>\$3,704,257</b>	<b>\$5,022,428</b>
<b>Tax Revenues</b>			<b>\$13,738,799</b>	<b>\$14,288,330</b>	<b>\$14,859,863</b>	<b>\$15,454,257</b>	<b>\$16,072,428</b>

<b>10171 Water</b>								
<b>52915 Program Budget: Non-Programmatic</b>				<b>\$0</b>	<b>\$15,000</b>	<b>\$15,000</b>	<b>\$200,000</b>	<b>\$200,000</b>
		NPN	WTP Security	\$0	\$15,000	\$15,000	\$100,000	\$100,000
		NPN	Miscellaneous Repairs - Major repairs such as structural for ongoing plant operations				\$100,000	\$100,000
		NPN	Valves, Actuators, Pumps					
<b>52930 Program Bud: Chemical Tanks &amp; Pads</b>				<b>\$0</b>	<b>\$125,000</b>	<b>\$50,000</b>	<b>\$50,000</b>	<b>\$0</b>
		NPN	Chemical Tanks & Pads - Replacement of tanks caused by caustic chemicals		\$50,000	\$50,000	\$50,000	
		NPN	Lime System-Removal of old lime systems from treatment plants		\$75,000			
<b>52931 Program Budget: Clarifiers</b>				<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
		NPN	Repair and Replace					
<b>10191 Maintenance</b>								
<b>52915 Program Budget: Non-Programmatic</b>				<b>\$231,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
		NPN	Bear Valley-Steel Building (50' x 100') - New building for operations of the Upper Country system	\$225,000				
		NPN	Welding Shop Slab	\$6,000				
<b>52916 Program Non-Jurisdictional Major Repairs-Water Diversion, Holding Structures</b>				<b>\$75,000</b>	<b>\$225,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>
		2336	Tarr Canal Diversion Repair and Replacement-Clean, repair, and update diversion	\$75,000	\$225,000			
		2335	Tunnel Canal Diversion Repair and Replacement-Clean, repair, and update diversion			\$300,000		
		2334	Camp Far West Diversion Repair and Replacement-Clean, repair, and update diversion				\$300,000	
		2333	China Union Diversion Repair and Replacement-Clean, repair, and update diversion					\$300,000
		2332	Wiskey Diggins Diversion-Repair and Replacement-Clean, repair, and update diversion					
		2331	Auburn Ravine 1-Diversion Repair and Replacement-Clean, repair, and update diversion					
<b>52940 Program Budget: Tank Restoration</b>				<b>\$400,000</b>	<b>\$400,000</b>	<b>\$400,000</b>	<b>\$400,000</b>	<b>\$400,000</b>
		NPN	Storage Tank Recoating	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
<b>52941 Program Budget: Road Restoration</b>				<b>\$50,000</b>	<b>\$160,000</b>	<b>\$160,000</b>	<b>\$160,000</b>	<b>\$160,000</b>
		NPN	Asphalt sealing (WTP & Pump Stations)	\$50,000	\$160,000	\$160,000	\$160,000	\$160,000

<b>52942 Program Budget: Pipeline Restoration</b>				<b>\$75,000</b>	<b>\$350,000</b>	<b>\$350,000</b>	<b>\$350,000</b>	<b>\$350,000</b>
		NPN	Pipeline Rehabilitation - Epoxy Lining	\$75,000	\$350,000	\$350,000	\$350,000	\$350,000
<b>52943 Program Budget: Canal Restoration</b>				<b>\$75,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>
		NPN	Shotcrete Lining of Canals	\$75,000	\$100,000	\$100,000	\$100,000	\$100,000
		NPN	South Yuba Canal - emergency repairs to the facility					
<b>Total Capital-Operation Revenues, Maintenance and Water Operations</b>				<b>\$906,000</b>	<b>\$1,375,000</b>	<b>\$1,375,000</b>	<b>\$1,560,000</b>	<b>\$1,510,000</b>
<b>30250 Recreation</b>								
<b>52915 Program Budget: Non-Programmatic</b>				<b>\$0</b>	<b>\$315,000</b>	<b>\$315,000</b>	<b>\$315,000</b>	<b>\$315,000</b>
	2091		Boat Slips/Docks-Purchasing 42 boat slips from EZDocks, for Long Ravine. Recreation staff will construct the new slips and will be removing the old slips.		\$50,000	\$50,000	\$50,000	\$50,000
			Sewer System Replacements		\$30,000	\$50,000	\$50,000	\$50,000
	2314		Peninsula (2019)-Repair/replacement of Peninsula Sewer System					
			Roadway Restoration		\$10,000	\$40,000	\$40,000	\$40,000
	2020		Scotts Flat Office & Generator-Replace existing deteriorating office		\$200,000			
		NPN	Roofing Upgrades		\$25,000	\$35,000	\$35,000	\$35,000
		NPN	Campground Host - trailer replacement, Scotts Flat, Long Ravine, Peninsula			\$140,000	\$140,000	\$140,000
<b>Total Capital - Recreation</b>				<b>\$0</b>	<b>\$315,000</b>	<b>\$315,000</b>	<b>\$315,000</b>	<b>\$315,000</b>

<b>50112 Hydroelectric</b>							
<b>52915 Program Budget: Non-Programmatic-Total represents non-bonded Projects</b>			<b>\$250,000</b>	<b>\$2,500,000</b>	<b>\$2,000,000</b>	<b>\$100,000</b>	<b>\$200,000</b>
	2084	New Hydro Office Property Development (Hydro Maintenance Shop/Office)	\$250,000	\$2,500,000	\$2,000,000	\$100,000	
	6947	LRPH Loma Rica Hydroelectric-Build new hydroelectric facility on Banner Cascade Pipeline					\$200,000

<b>52920 Program Budget: PH Improvements-Total represents non-bonded Projects</b>			<b>\$1,925,000</b>	<b>\$4,600,000</b>	<b>\$4,225,000</b>	<b>\$3,325,000</b>	<b>\$2,200,000</b>
	2354	BPH Bowman Intertie Breaker		\$200,000	\$75,000		
	2362	CPPH Transformer Replacement	\$50,000	\$1,500,000	\$750,000		
	2383	CPPH Rewind		\$50,000	\$1,500,000		
	2402	CPPH Governor Replacement				\$150,000	\$250,000
		CPPH Instrumentation Upgrade	\$100,000				
	2352	CPPH Switchgear Upgrade				\$50,000	\$500,000
	2353	CPPH Turbine Overhaul	\$100,000	\$1,250,000	\$1,250,000		
	2347	CNPH CAISO Meter			\$150,000		
	2168	CSPH Instrument/Control/Protection Upgrades	\$300,000	\$250,000			
	6943	CS Access Road	\$200,000				
	2342	DCPH Controls/Automation	\$50,000	\$250,000			
	2343	DCPH Generator Breaker	\$50,000	\$100,000	\$100,000	\$25,000	
	2395	DCPH Exciter Replacement	\$50,000	\$150,000			
	2387	DCPH Transformer Replacement			\$50,000	\$750,000	\$100,000
	2246	DFPH Fire Suppression System Upgrades	\$250,000				
	2403	DFPH Switch Gear Upgrade					\$50,000
		DFPH Cooling Water System Upgrades	\$75,000	\$175,000			
		DFPH Governor Replacement		\$150,000	\$250,000		
	2349	DFPH No 2 Turbine Shutoff Valve (TSV)				\$500,000	\$50,000
	2350	DFPH Main Transformer Replacement			\$50,000	\$1,500,000	\$750,000
	2351	RPH OCB Replacement	\$200,000	\$75,000			
	2379	RPH Rollins Powerhouse Fire Protection System	\$50,000	\$250,000			
	2392	RPH Governor Replacement	\$50,000	\$200,000			
	2393	RPH Balance of Plant	\$250,000				
	2394	RPH Relay Protection Improvements	\$150,000				
	2406	SFPH Balance of Plant Upgrade			\$50,000	\$250,000	
	2401	SFPH Switchgear and Relay Replacement				\$100,000	\$500,000



<b>52921 Program Budget: Reservoir, Dam and Water-Total represents non-bonded Projects</b>	<b>\$2,660,000</b>	<b>\$3,570,000</b>	<b>\$9,150,000</b>	<b>\$8,070,000</b>	<b>\$200,000</b>
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		2094	Scotts Flat Dam Spillway Repair	\$500,000.00	\$500,000.00	\$6,000,000.00	\$6,000,000.00	
		201402	Combie Dam Stabilization and Scour Protection-Phased Project	\$600,000.00	\$3,000,000.00	\$3,000,000.00		
		2359	Bowman North Dam Face Concrete Lining Improvement		\$50,000.00	\$100,000.00	\$1,650,000.00	
		2007	French Dam - New Gauging Station	\$520,000.00				
		2360	French Dam - Freeboard, Upstream Lining, Spillway Training Wall	\$1,040,000.00				
		2361	Jackson Lake - Spillway Channel Confinement Deficiency					
		2385	Rollins Dam Penstock Drainage Improvement				\$20,000.00	\$200,000.00
		2357	Sawmill Upstream Lining Improvement			\$20,000.00	\$50,000.00	\$400,000.00

<b>52922 Program Budget: Lower Division Waterway-Total represents non-bonded Projects</b>	<b>\$100,000</b>	<b>\$450,000</b>	<b>\$450,000</b>	<b>\$450,000</b>	<b>\$450,000</b>
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		2341	DF Canal Liner Replacement	\$50,000				
		2386	CP Flume Intake Drain Improvements	\$50,000	\$450,000	\$450,000	\$450,000	\$450,000

<b>52923 Program Budget: Upper Division Waterway-Total represents non-bonded Projects</b>	<b>\$300,000</b>	<b>\$230,000</b>	<b>\$480,000</b>	<b>\$450,000</b>	<b>\$500,000</b>
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			BSC Repairs Upstream of Clear Creek Tunnel		\$20,000	\$60,000	\$400,000	\$400,000
		2404	BSC Fall Creek Flume Improvements	\$50,000	\$150,000			
		2339	BSC Rucker Spill Gate Replacement	\$250,000				
			BSC Slope Stabilization Upstream of Texas Creek Tunnel		\$60,000	\$400,000		
			BSC Wilson Creek Diversion Dam Rehab Project			\$20,000	\$50,000	\$100,000

<b>52924 Program Budget:</b>			<b>\$200,000</b>	<b>\$350,000</b>	<b>\$185,000</b>	<b>\$250,000</b>	<b>\$250,000</b>
<b>SCADA/Communication Upgrades-Total</b>							
<b>represents non-bonded Projects</b>							

	201502	SCADA Upgrade				\$250,000	\$250,000
	2405	New Hydro Field Office Radio Tower		\$350,000			
	2390	DFFB-PG&E Drum Fiber Optic	\$200,000				
	2389	CPHVP - CP Intake Fiber Optic					
	2346	DCPH Install Microwave from KLOVE Tower (SF) to CPPH			\$185,000		

<b>Total Capital - Hydroelectric</b>	<b>\$5,435,000</b>	<b>\$11,700,000</b>	<b>\$16,490,000</b>	<b>\$12,645,000</b>	<b>\$3,800,000</b>
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<b>TOTAL O&amp;M CAPITAL - Operations and Maintenance</b>	<b>\$906,000</b>	<b>\$1,375,000</b>	<b>\$1,375,000</b>	<b>\$1,560,000</b>	<b>\$1,510,000</b>
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<b>TOTAL CAPITAL - Engineering, Hydroelectric and Recreation</b>	<b>\$11,445,000</b>	<b>\$23,665,000</b>	<b>\$29,185,000</b>	<b>\$24,710,000</b>	<b>\$15,165,000</b>
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