COASTSIDE COUNTY WATER DISTRICT
CIP Projects FY 18/19 to FY 27/28

FINAL
June 28, 2018

7/17/2018

Project #	Project Name	Comments	FY18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY26/27	FY27/28	FY 18/19 to FY 27/28 Total
Equipment Purchase & Replacement													
06-03	SCADA/Telemetry/Electric Controls Replacement (*Backup Communications @ Cahill, PRV controls)*		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 500,000
08-10	Backhoe			$ 200,000									$ 200,000
15-04	Vactor Truck/Trailer							$ 500,000					$ 500,000
19-XX	Valve truck	New FY18-19. Valve truck will replace the valve exercising trailer that was purchased ~10 years ago.			$ 225,000								$ 225,000
99-02	Vehicle Replacement	Increase budget by $10K per year	$ 100,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 460,000
	Equipment Purchase & Replacement Totals		**$ 150,000**	**$ 290,000**	**$ 315,000**	**$ 90,000**	**$ 90,000**	**$ 590,000**	**$ 90,000**	**$ 90,000**	**$ 90,000**	**$ 90,000**	**$ 1,885,000**
Facilities & Maintenance													
08-08	PRV Valves Replacement Project		$ 30,000	$ 30,000	$ 30,000	$ 30,000							$ 120,000
09-09	Fire Hydrant Replacement	Increase from $40K to $140K per year	$ 140,000	$ 140,000	$ 140,000	$ 140,000	$ 140,000	$ 140,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 1,000,000
15-03	District Administration/Operations Center									$ 3,000,000			$ 3,000,000
16-07	Sample Station Replacement Project	Increase from $20K to $30K	$ 30,000										$ 30,000
17-15	Pilarcitos Canyon Emergency Road Repairs	Moved from FY17/18 to FY18/19 (restoration work from Feb 2017 storms)	$ 100,000										$ 100,000
18-13	Denniston WTP and Tank Road Repairs and Paving	New	$ 100,000										$ 100,000
99-01	Meter Change Program	Ongoing replacement of larger meters	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 200,000
	Facilities and Maintenance Totals		**$ 420,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 160,000**	**$ 160,000**	**$ 60,000**	**$ 3,060,000**	**$ 60,000**	**$ 60,000**	**$ 4,550,000**
Pipeline Projects													
06-02	Highway 1 South Pipeline Replacement Project	increase from $500K to $750K	$ 750,000										$ 750,000
07-03	Pilarcitos Canyon Pipeline Replacement	increase from $600K to $700K - need SFPUC approval; moved from FY18/19 to FY19/20		$ 700,000									$ 700,000
07-04	Bell Moon Pipeline Replacement Project	move up from FY23/24 and FY24/25	$ 60,000	$ 250,000									$ 310,000
13-02	Replace 8 Inch Pipeline Under Creek at Pilarcitos Ave	Add $50K for design	$ 50,000			$ 400,000							$ 450,000
14-01	Replace 12" Welded Steel Line on Hwy 92 with 8"	Add $100K for design	$ 100,000					$ 1,000,000	$ 1,000,000	$ 1,000,000			$ 3,100,000
14-27	Grandview 2 Inch Replacement	Increased project by $1M in FY23/24 - due to expanded scope; design in FY18/19	$ 50,000					$ 1,450,000					$ 1,500,000
14-28	Replace 2 Inch Hilltop Market to Spanishtown							$ 240,000					$ 240,000
14-29	Replace 2 Inch GS Purissima Way	Move out from FY19/20 to FY20/21			$ 125,000								$ 125,000
14-30	Replace Miscellaneous 2 Inch GS El Granada	Move up from FY19/20 to FY18/19	$ 60,000										$ 60,000
14-31	Ferdinand Avenue - Replace 4" WS Ferdinand Ave. to Columbus	Increase from $225K to $450K; moved out from FY 19/20 to FY20/21 - add design in FY 18/19	$ 60,000		$ 450,000								$ 510,000
14-32	Casa Del Mar - Replace Cast Iron Mains	Add $350K for PRVs - FY18/19 and FY19/20 -- will allow us to decrease pressure/extend life; pushed out main replacement to FY26/27 and FY27/28 and increaase by $1M		$ 350,000							$ 1,500,000	$ 1,500,000	$ 3,350,000
14-33	Miramar Cast Iron Pipeline Replacement	Increase FY24/25 from $500K to $1M							$ 1,000,000	$ 1,000,000			$ 2,000,000
16-09	Slipline 10 Inch Pipeline in Magellan at Hwy 1	Move our from FY18/19 to FY20/21			$ 100,000								$ 100,000
18-01	Pine Willow Oak - 2400 feet	increase FY21/22 from $500K to $1M				$ 1,000,000							$ 1,000,000
19-XX	Grand Blvd Pipeline/PRV Loop				$ 250,000								$ 250,000
NN-00	Unscheduled CIP	Added line item to cover unscheduled CIP that occurs during the year. Removed pipeline replacements in Yrs 6-10	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 1,000,000
	Pipeline Projects Totals		**$ 1,230,000**	**$ 1,400,000**	**$ 1,025,000**	**$ 1,500,000**	**$ 100,000**	**$ 2,790,000**	**$ 2,100,000**	**$ 2,100,000**	**$ 1,600,000**	**$ 1,600,000**	**$ 15,445,000**
Pump Stations/Tanks/Wells													
06-04	Hazen's Tank Removal	move from FY17/18 to FY18/19	$ 30,000										$ 30,000
08-14	Alves Tank Recoating, Interior & Exterior	Assumes design work plus start of project in FY18/19; $600K added from prior CIP	$ 600,000	$ 1,500,000									$ 2,100,000
19-01	EG Tank #1 Recoating, Interior & Exterior	New	$ 100,000	$ 500,000	$ 800,000								$ 1,400,000
19-XX	Miramar Tank - Chime	new - seismic evaluation in FY18/19	$ 40,000		$ 250,000								$ 290,000
08-16	Cahill Tank Exterior Recoat	increased from $75K to $200K		$ 200,000									$ 200,000

Yellow = changes from FY2017/18 CIP

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09-18	Pilarcitos Well Field Improvements	moved - design work in FY18/19 with implementation in FY19/20		$ 150,000									$ 150,000
11-02	CSPS Stainless Steel Inlet Valves							$ 100,000					$ 100,000
11-05	Half Moon Bay Tank #2 Interior & Exterior Recoat	FY 19/20 and FY20/21 - added design and seismic evaluation $50K each year; moved tank rehab out from FY20/21 to FY21/22 and increased costs for $400K to $750K		$ 50,000	$ 50,000	$ 750,000							$ 850,000
11-06	Half Moon Bay Tank #3 Interior & Exterior Recoat	FY 19/20 and FY20/21 - added design and seismic evalulation $50K each year; increased costs of tank rehab for $400K to $1M		$ 50,000	$ 50,000		$ 1,000,000						$ 1,100,000
16-08	Denniston Well Field Improvements	Moved from FY18/19 to FY23/24; Increased fromm $100K to $150K						$ 150,000					$ 150,000
18-04	CSP Fire System	Moved from FY18/19 to FY23/24;						$ 40,000					$ 40,000
18-05	Denniston Tank THM Residual Control	move from FY17/18 to FY18/19	$ 80,000										$ 80,000
18-06	CSP -- (3) Butterfly Valves	increased from $45K to $80K	$ 80,000										$ 80,000
19-XX	Tanks - THM Control	New	$ 120,000										$ 120,000
	Pump Stations/Tanks/Wells Totals		**$ 1,050,000**	**$ 2,450,000**	**$ 1,150,000**	**$ 750,000**	**$ 1,000,000**	**$ 290,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,690,000**

Water Supply Development

12-12	San Vicente Diversion and Pipeline	moved $100K up from FY19/20 to FY18/19	$ 100,000	$ 200,000	$ 1,000,000	$ 1,000,000							$ 2,300,000
13-04	Denniston Reservoir Restoration	move from FY19/20 to FY20/21			$ 1,000,000								$ 1,000,000
17-12	Recycled Water Project Development	move from FY17/18 to FY18/19	$ 100,000										$ 100,000
	Water Supply Development Totals		**$ 200,000**	**$ 200,000**	**$ 2,000,000**	**$ 1,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,400,000**

Water Treatment Plants

08-07	Nunes Filter Valve Replacement	Changed from $45K per year for (5) years to $500K to get work all completed at once; Cost increase includes hiring a contractor to replace the valves (vs. CCWD staff) due to safety issues.	$ 500,000										$ 500,000
13-05	Denniston WTP Emergency Power	Move up from FY23/24 to FY19/20; design work in FY19/19	$ 50,000	$ 400,000									$ 450,000
17-01	Nunes Water Treatment Plant Treated Water Meter	removed											$ -
17-04	Denniston Dam Spillway Repairs	work will be done in FY17/18											$ -
18-11	Nunes Bulk Caustic Tank	moved from FY17/18 to FY19/20		$ 40,000									$ 40,000
	Water Treatment Plants Totals		**$ 550,000**	**$ 440,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 990,000**
	GRAND TOTAL		**$ 3,600,000**	**$ 4,970,000**	**$ 4,680,000**	**$ 3,530,000**	**$ 1,350,000**	**$ 3,830,000**	**$ 2,250,000**	**$ 5,250,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 32,960,000**
	MEMO - Prior CIP		*$ 3,598,000*	*$ 2,238,000*	*$ 2,628,000*	*$ 4,148,000*	*$ 3,128,000*	*$ 2,483,000*	*$ 1,683,000*	*$ 4,683,000*	$ 1,683,000		
	Difference		*$ 2,000*	*$ 2,732,000*	*$ 2,052,000*	*$ (618,000)*	*$ (1,778,000)*	*$ 1,347,000*	*$ 567,000*	*$ 567,000*	*$ 67,000*		

5 year change Recap	***$ 2,390,000***
Delay Hwy 92 8 inch	$ (2,900,000)
Delay Casa del Mar Pipeline Replacement	$ (2,000,000)
Offset by addition of PRVs in Casa del Mar	$ 350,000
Delay Vactor Truck	$ (500,000)
Valve Truck (New to CIP)	$ 200,000
Fire hydrants	$ 500,000
Pipeline Replacement-Hwy 1 South	$ 250,000
Pipeline Replacement-Bell Moon	$ 310,000
Pipeline Replacement-Ferdinand	$ 285,000
Pipeline Replacement-Pine Willow	$ 500,000
Grand Blvd - PRV loop	$ 250,000

5 year average ***$ 3,626,000***

5 year change Recap (cont'd)	
Alves Tank Refurbishment	$ 600,000
EG Tank #1 Refurbishment (New to CIP)	$ 1,400,000
Miramar Tank Chime (New to CIP)	$ 290,000
HMB Tank #2	$ 430,000
HMB Tank #3	$ 680,000
Nunes Filter Valve Replacement	$ 275,000
Denniston Emergency Power	$ 450,000
Unscheduled CIP placeholder added	$ 500,000
Other (< $200,000 projects)	$ 520,000
	$ 2,390,000

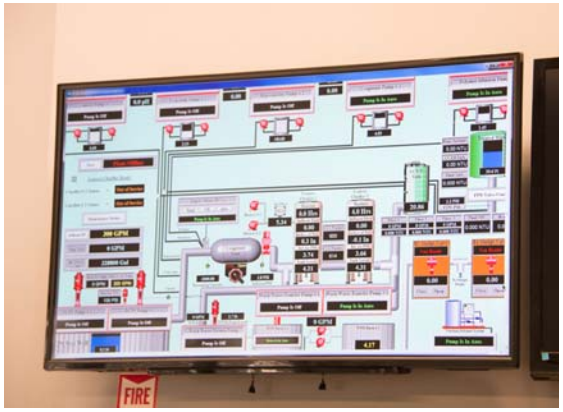
Yellow = changes from FY2017/18 CIP

06-03 SCADA/Telemetry/Electrical Controls Replacement Equipment Purchase & Replacement

Priority: 1 Improves operational efficiency, ensures reliable facility control and communication of critical operations data.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$500,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000

Description: This project provides for ongoing upgrading and replacement of controls at all the District's facilities and construction of a radio-based and cellular data communications network. Digital controllers at the District's facilities monitor reservoir levels, control treatment processes and pump stations, communicate critical data to the District's operations center, and notify operators of alarm conditions.



08-10 Backhoe Equipment Purchase & Replacement

Priority: 2 Replaces essential District equipment.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$200,000		200,000								

Description: District crews use a backhoe on a frequent basis for leak repairs. The District purchased its current backhoe in 2006. This project would replace the backhoe with a new unit. (Note that our 2006 model is up for smog testing in 2019, will not pass under the current standards, and cannot be economically modified to meet current standards.)

15-04 **Vactor Truck/Trailer** Equipment Purchase & Replacement

Priority: 2 Maintains essential District facilities.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$500,000						500,000				

Description: Due to increased regulation of potable water discharges and risks associated with excavating around existing underground utilities, many water agencies have adopted the use of vacuum equipment for excavation of leaks. This item would fund purchase of a vactor truck.

19-04 **Valve truck** Equipment Purchase & Replacement

Priority: 3

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$225,000			225,000							0

Description: This item is new for FY 18/19. This equiment will replace the old valve exerciser trailer (> 10 years old) with an F-550 flatbed with spray down, vacuum and valve exercising equipment mounted on the back. This modern valve exercising equipment allows for better torque control and adjustment. This equipment will allow the District to start a formal valve exercising program. The ultimate goal is to exercise every valve in the service area annually.

99-02 Vehicle Replacement Equipment Purchase & Replacement

Priority: 2 Replaces essential District equipment.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$460,000	100,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000

Description: The District generally considers vehicles to have a useful life of 10 years or 100,000 miles. This project provides funding for periodic replacement of the vehicle fleet. The District's vehicle fleet has not been upgraded/replaced according to our planned replacement schedule over the last fives years. As of FY 2017/18, the District has 3 vehicles that are 10 years or older. The CIP reflects: 1) replacing 3 vehicles in FY 2018/19, and 2) replacing 1 vehicle per year thereafter.

08-08 PRV Valves Replacement Project Facilities & Maintenance

Priority: 1 Maintains distribution system circulation and water quality

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$120,000	30,000	30,000	30,000	30,000						0

Description: 14 pressure reducing valves (PRV) divide the District's distribution system into four pressure zones. As the valves reach the end of their service life, they may stop or restrict the flow between zones, creating dead ends in the system and increasing the risk of water quality problems. This project provides funding to replace/rebuild PRV's at one PRV per year. Project will be completed by FY 2021/22.

09-09 Fire Hydrant Replacement Facilities & Maintenance

Priority: 2 Maintains essential district infrastructure.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,000,000	140,000	140,000	140,000	140,000	140,000	140,000	40,000	40,000	40,000	40000

Description:

The District has a large number of dry barrel hydrants that are beyond their service lfe and are difficult to repair. These dry barrel hydrants will be changed out with more reliable wet barrel hydrants to ensure adequate fire protection is maintainted for the community we serve.

The District has ap. 647 hydrants, and the cost of each hydrant is $5000 - $7000 to replace.

16-07 Sample Station Replacement Project Facilities & Maintenance

Priority: 3

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$30,000	30,000									

Description: Our present (26) sample stations are not suitably designed for use on the coast. The housing corrodes, causing difficulty with opening and closing. In addition, many stations need to be raised above ground level. This project started in FY 2016/17. (6) stations were replaced in FY2016/17. (10) stations were compled in FY2017/18. The remaining (10) will be replaced by FY 2018/19.

17-15 Pilarcitos Canyon Emergency Road Repairs Facilities & Maintenance

Priority: 1 Repairs to comply with permit

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$100,000	100,000									

Description: During FY 2016/17, the District sustained heavy damage to our access road in Pilarcitos Canyon which required significant emergency repairs. This project provides for the restoration of the environment surrounding Pilarcitos Creek and our access road, as required by our emergency permit from the Army Corps of Engineers.

18-13 Denniston WTP and Tank Road Repairs and Paving Facilities & Maintenance

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$100,000	100,000									

Description:

This includes completion of the paving at the Denniston WTP around the Wash Water Return tanks, sludge drying beds and also includes repair/repaving of the lower portion of the Denniston Tank access road that is currently failing.

99-01 Meter Change Program Facilities & Maintenance

Priority: 1 Ensures accuracy of metering for billing purposes.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$200,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000

Description: This project provides funding for the District's replacement of meters that have reached the end of their service life. In 2017-2018, the District replaced all residential meters and smaller commercial meters.

The budget provides a placeholder for ongoing large meter (>2") change outs. The District plans to conduct large meter testing in FY18/19 and expect to find larger meters that under register low flows. These meters will be replaced with more accurate ultrasonic meters that capture both high and low flows.

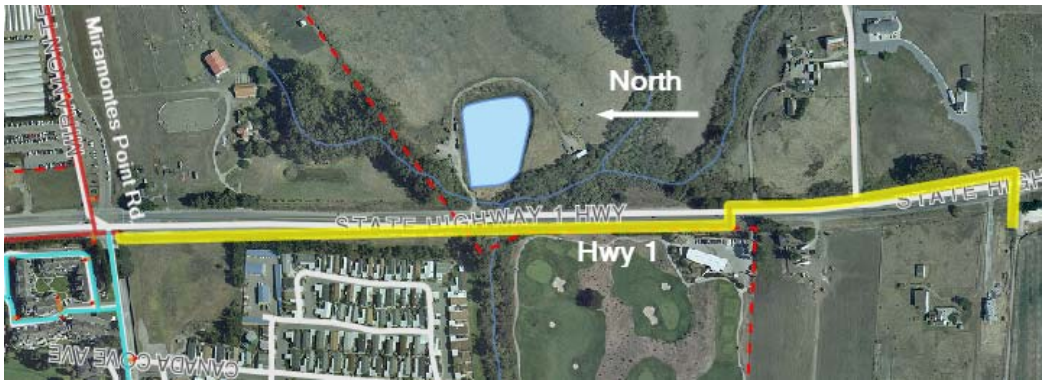
06-02 Facilities & Maintenance

06-02 Highway 1 South Pipeline Replacement Project Pipeline Projects

Priority: 2 Replaces obsolete, substandard main and improves water service and water quality.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$750,000	750,000									

Description: This project would replace about 3500 feet of 2 inch galvanized steel pipe running south along Highway 1 from Miramontes Point Road with 2" HDPE installed by directional boring. The pipeline was part of the Citizens Utilities system acquired when the district was formed in 1948. It serves seven active connections. These services experience low-pressure problems due to the deteriorated state of the existing pipe as well as the corrosion induced small size and length of the pipe in the prevailing lower pressures in the southernmost part of the District. The low-pressure also creates the risk of water quality problems.



07-03 Pilarcitos Canyon Pipeline Replacement Pipeline Projects

Priority: 1 This project is vital because gravity flow from Pilarcitos saves up to $40,000 per month in Crystal Springs pumping costs and provides a backup water source for the district in the event of a Crystal Springs pump station failure.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$700,000		700,000								

Description: The Pilarcitos Canyon Pipeline (also called Stone Dam Pipeline) conveys water from SFPUC's Pilarcitos Reservoir by gravity into the District's system.The original 12 inch welded steel pipeline, built in 1948, failed in an inaccessible area of the pipeline alignment in August 2012. Due to the age and condition of the pipe and the difficulty of working at the failure site, District staff concluded that repairing the pipeline was not feasible. In November 2012, the District obtained a permit from San Francisco to install an emergency temporary replacement pipeline to supply water while the District plans, designs, and constructs a permanent replacement pipe. District staff and contractors completed construction of the temporary line in December 2012. We propose to remove the approximately 2,600 linear feet of temporary above-ground Yelomine PVC pipeline and replace it in the same general alignment with approximately 2,300 linear feet of buried 12 inch ductile iron pipeline.

07-04 **Bell Moon Pipeline Replacement Project** Pipeline Projects

Priority: 3 The District's welded steel pipelines are generally at least 50 years old and subject to increasing risk of failure.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$310,000	60,000	250,000								

Description: Replaces approximately 725 feet of 12 inch welded steel pipeline serving the light industrial area between Lewis Foster Drive and Highway 92.

13-02 Replace 8 Inch Pipeline Under Creek at Pilarcitos Ave. Pipeline Projects

Priority: 1 Prevents water loss and environmental damage, protects water quality.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$450,000	50,000			400,000						

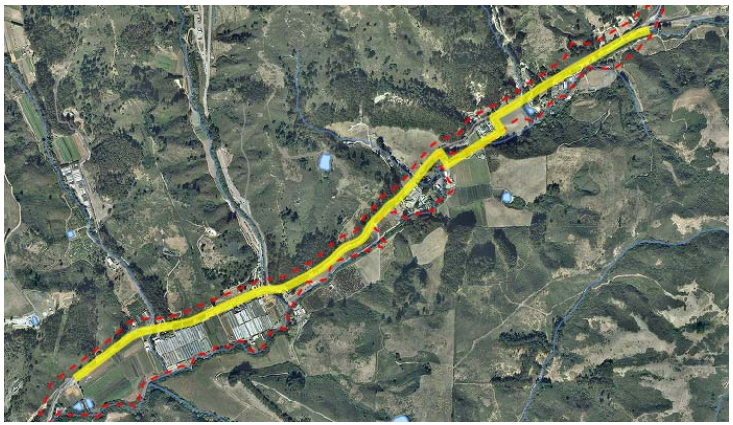
Description: The 8 inch pipeline crossing Pilarcitos Creek between the end of Pilarcitos Avenue just south of the creek and Strawflower Shopping Center is one of only two pipelines supplying water to areas of the district south of Pilarcitos Creek. The pipe's age, current condition, and exact location in the creek are unknown. A break occurring in the section of pipe underneath the creek bed would be very difficult to detect and could cause significant water loss, serious water quality issues which could result in a District-wide boil water order, and environmental damage with potential fines. This project will replace the section of pipe under the creek with either 1) a pipe running over the creek, attached to the existing footbridge between the end of Pilarcitos Avenue and the shopping center, or 2) a pipe installed under the creek by horizontal directional drilling. Initial phase work to be completed in June 2017 will consist of installing approximately 400 feet of 8-inch pipe within the Strawflower access road from Highway 92, which would ensure water supply to commercial customers in the event of a problem with the existing pipe in the creek.

14-01 Replace 12" Welded Steel Line on Hwy 92 with 8" DI Pipeline Projects

Priority: 2 Replacing this pipeline is important to reduce costs, lower environmental risks, and improve water quality.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$3,100,000	100,000					1,000,000	1,000,000	1,000,000		

Description: When the District built the new Pilarcitos East Pipeline to bring untreated water from Pilarcitos Reservoir and Crystal Springs to the Nunes Water Treatment Plant, the existing 12 inch welded steel raw water pipeline running along Highway 92 was repurposed to supply treated water to services along Highway 92. This (approximately) 12,000 foot pipeline is one of the oldest in the District and, like other welded steel pipelines, is at the end of its useful life. District crews have repaired a number of leaks along the pipe in recent years, and we would expect the frequency of repairs to increase. A large leak in a section of pipeline close to Pilarcitos Creek could cause significant environmental damage. In addition,the large size of the pipe relative to the low flow demands of the limited number of services along Highway 92 creates water quality problems. Given its length and the need for construction along the busy highway, replacing this pipe will be challenging. Construction would occur in phases, beginning with the sections at highest risk for costly failures. In FY2017/18, approximately 600 feet in the vicinity of La Nebbia Winery was replaced.

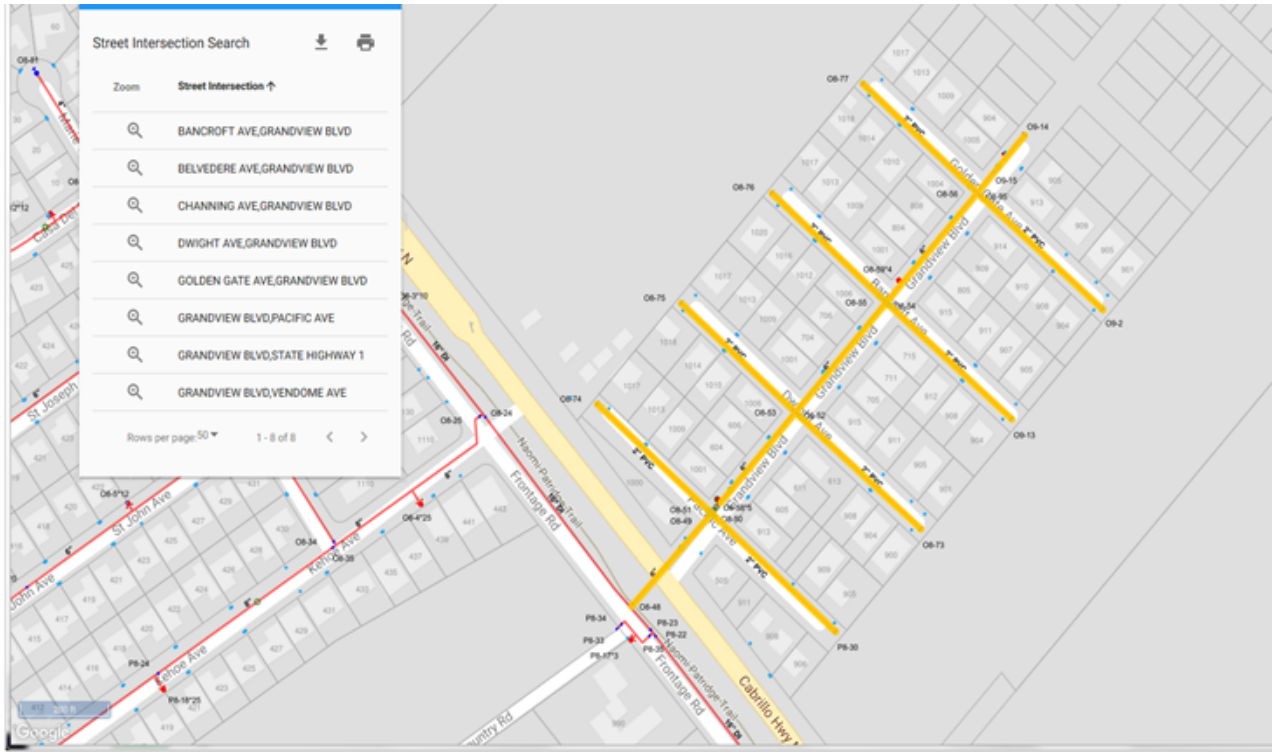


14-27 Grandview 2 Inch Replacement Pipeline Projects

Priority: 3 Replaces substandard infrastructure, improves water service, fire flows.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,500,000	50,000					1,450,000				

Description: This project would replace approximately 2300 feet of 2 inch plastic and 1100 feet of 6" cast iron main in the Grandview Boulevard neighborhood. These mains are beyond their service life and do not provide required pressure/flow for fire protection.



14-28 Replace 2 Inch Hilltop Market to Spanishtown Pipeline Projects

Priority: 3 Replaces obsolete infrastructure, improves water service, fire flows.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$240,000						240,000				

Description: This project would replace approximately 1200 feet of 2 inch PVC main running along Highway 92 from Hilltop Market to Spanishtown.This main is well beyond its service life, and incapable of providing required flow and pressure.

14-29 Replace 2 Inch GS Purisima Way Pipeline Projects

Priority: 3 Replaces obsolete infrastructure, improves water service, fire flows.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$125,000			125,000							

Description: This project would replace approximately 700 feet of 2 inch galvanized steel main along Purisima Way, north of Miramar Drive. The steel main is beyond its service life and does not provide required flow/pressure.

14-30 Replace Miscellaneous 2 Inch GS El Granada Pipeline Projects

Priority: 3

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$60,000	60,000									

Description: This project would replace approximately 300 feet of 2 inch galvanized steel mains in El Granada (Madrid and El Granada Blvd.) that were not included under other projects.

El Granada Blvd

Madrid Avenue

14-31 Ferdinand Avenue - Replace 4" WS Ferdinand Ave. to Columbus St. Pipeline Projects

Priority: 1 Pipeline is welded steel, more than 50 years old, has had numerous leaks.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$510,000	60,000		450,000							

Description: This project would replace approximately 1500 feet of 4 inch welded steel pipeline in El Granada, running along Carmel Avenue down Ferdinand and is exposed as it crosses Deer Creek to Columbus (partially paper street).

14-32 Casa Del Mar - Replace Cast Iron Mains Pipeline Projects

Priority: 2 These cast iron pipelines are nearing the end of their useful life, leaks are increasing, and repairs are expensive.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$3,350,000		350,000							1,500,000	1,500,000

Description: Cast iron mains in the Casa Del Mar neighborhood (between Kehoe Avenue and Wave Avenue) were installed between 1965 and 1976. This project would replace approximately 10,700 feet of 4 inch, 6 inch, 8 inch, and 10 inch cast iron pipelines. There have been numerous leaks in this neighborhood, and leaks have caused significant pavement damage due to high pressure in the area. Staff proposes installing (2) PRV's to reduce pressure in an effort to extend the life of these mians until they can be replaced in FY 26/27 and FY 27/28.

14-33 Miramar Cast Iron Pipeline Replacement Pipeline Projects

Priority: 2 Maintains essential District infrastructure

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$2,000,000							1,000,000	1,000,000		

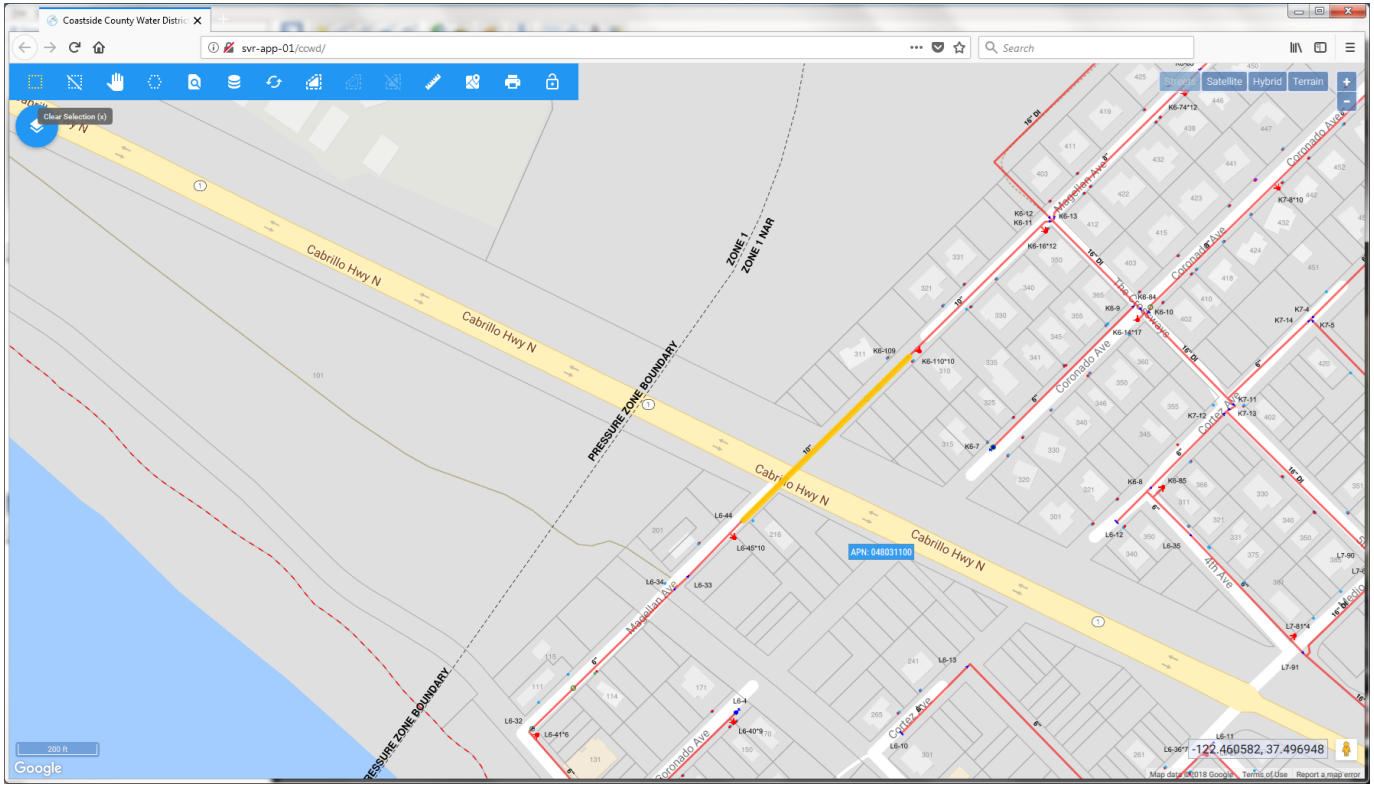
Description: This project would replace about 11,000 feet of 8 inch and 10 inch cast iron mains in an area of Miramar bounded approximately by Highway 1, Medio Avenue, and Washington Blvd. Most of these pipes were installed in the mid-1960's.

16-09 Slipline 10-inch Pipeline in Magellan at Hwy 1 Pipeline Projects

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$100,000			100,000							

Description: On the night of November 23, 2014, the 10-inch cast iron pipeline which runs down Magellan from 5th Avenue and across Highway 1 failed in the field east of Highway 1, causing the loss of more than 750,000 gallons of water and leading to a boil order in some El Granada neighborhoods. This project will prevent similar problems with this line in the future by lining it with a smaller pipe.

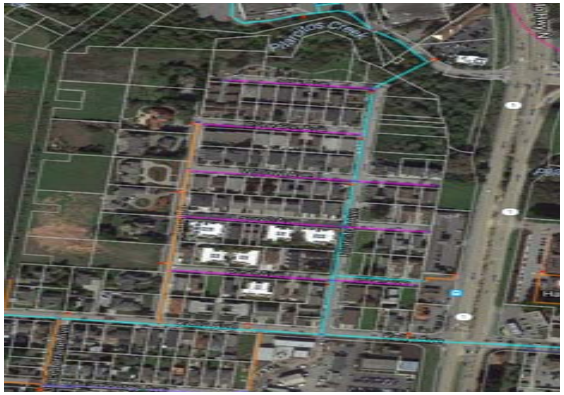


18-01 Pine - Willow - Oak 2,400 feet Pipeline Replacement Pipeline Projects

Priority: 2

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,000,000				1,000,000						

Description: The cast iron 4" mains were installed in the early sixties and are now approaching 60 years old. This neighborhood has had 10 breaks, 8 of which occurred since 2007.



19-03 **Grand Pipeline/PRV Loop** Pipeline Projects

Priority: 2

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$250,000			250,000							

Description: This project will include the installation of a PRV station to reduce the pressure in this neighborhood and add a loop in order to minimize water outages during emergency and scheduled repairs.

NN-00 **Pipeline Replacement - Unscheduled CIP** Pipeline Projects

Priority: 3

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,000,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000

Description: Placeholder for cost of continuing pipeline replacement and unscheduled emergency repairs.

06-04 **Hazen's Tank Removal** Pump Stations/Tanks/Wells

Priority: 3

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$30,000	30,000									

Description: Hazen's tank is a 50,000 gallon redwood tank of uncertain age which was moved to the present site near the intersection of San Juan Ave. and Ferdinand Avenue in the mid-1960s. Its purpose is to stabilize water pressures in the nearby higher elevation areas of El Granada within the El Granada Tank 2 pressure zone. This tank has reached the end of its useful life, and its redwood construction raises the risk of water quality problems. Hazen's Tank is no longer needed after the Denniston Treated Water Booster Station (Project 12-04) came online in 2018. The current budget of $30,000 would cover removal of the existing tank. This tank is currently empty (as of 4-2018) and out of service.

08-14 Alves Tank Recoating, Interior + Exterior Pump Stations/Tanks/Wells

Priority: 1 Maintains critical district infrastructure.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$2,100,000	600,000	1,500,000								

Description: Under a comprehensive program initiated in 2008, the District has inspected and performed long-deferred maintenance on its steel treated water storage tanks. The maintenance generally consists of repairing corrosion damage, recoating the interior and exterior of the tank, and bringing ladders, manways, railings and other tank features up to current standards. The Alves Tank, located above Miramontes Point Road east of Highway 1, is the District's largest at 2.0 million gallons. This project provides for repairing and recoating the Alves Tank. Project costs will include installation and operation of a temporary pump station to ensure adequate flow and pressure to customers in the southernmost area of the District during the tank shutdown.

19-01 EG #1 Tank Refurbishment Pump Stations/Tanks/Wells

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,400,000	100,000	500,000	800,000							

Description: EG #1 Tank was constructed in 1950. The last partial recoating of the tank was in 2008. Since then, the tank has been cleaned and inspected with divers. The last dive report indicated the interior coating is failing and in need of complete replacement. Portions of the old stacked concrete bag retaining wall failed in the wet winter of 2016-17. This budget includes repairing the tank, retaining wall and site improvements as well as recoating interior and exterior and vent modifications.

19-02 **Miramar Tank Chime** Pump Stations, Tanks, Wells

Priority:

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$290,000	40,000		250,000							

Description: The chime around the base of the tank has experienced severe corrosion and needs to be replaced

08-16 Cahill Tank Exterior Recoat Pump Stations/Tanks/Wells

Priority: 3 Maintains essential district facilities

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$200,000		200,000								

Description: Under a comprehensive program initiated in 2008, the District has inspected and performed long-deferred maintenance on its steel treated water storage tanks. The maintenance generally consists of repairing corrosion damage, recoating the interior and exterior of the tank, and bringing ladders, manways, railings and other tank features up to current standards. The Cahill tank is a 250,000 gallon tank located on the ridge above Crystal Springs Reservoir, near Skylawn Cemetery. The tank receives raw water from the Crystal Springs pumps and provides for a uniform flow into the Nunes Water Treatment Plant.

09-18 Pilarcitos Well Field Improvements Pump Stations/Tanks/Wells

Priority: 2 Maintains essential district facilities, reduces water purchase costs.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$150,000		150,000								

Description: Water from a number of wells located on District property along upper Pilarcitos Creek represents an important water source for the District. Under the terms of a permanent water rights license, the District may pump up to 117 million gallons from these wells in the period from November 1 through March 31.Use of the wells results in substantial water cost savings versus the high cost of water purchased from San Francisco Public Utilities Commission. A new well producing 300 gallons per minute could reduce SFPUC water purchase costs by more than $350,000 in a single pumping season (based on projected FY 18/19 SFPUC cost of $4.10 per hundred cubic feet) This project provides for drilling a new Pilarcitos well to replace several older wells which have, over time, become less productive.

11-02 Crystal Springs Pump Station Stainless Steel Inlet Valves Pump Stations/Tanks/Wells

Priority: 3 Maintains essential District infrastructure; Safety

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$100,000						100,000				

Description: This project would replace the existing carbon steel butterfly valves on the Crystal Springs Pump Station raw water inlets with stainless steel valves. The existing valves are submerged in the Crystal Springs inlet tunnel and subject to corrosion which could render them inoperable. These valves supplement inlet valves located in Crystal Springs reservoir to provide a second barrier against water entering the tunnel when it is necessary to dewater and enter the tunnel for maintenance or inspection purposes. Replacement of the steel inlet valves will complete a project initiated in 2011 to improve reliability and lower maintenance costs of the Crystal Springs Pump Station. The first project phases, completed in 2012, removed two pneumatically operated inlet valves from the tunnel, modified them for manual operation, and relocated them under the inlet screens in Crystal Springs reservoir. These valves would be closed when work is done in the tunnel. They provide an additional level of safety to prevent engulfment of those working in the tunnel.

11-05 Half Moon Bay Tank #2 Interior + Exterior Recoat Pump Stations/Tanks/Wells

Priority: 1 Maintains essential District facilities.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$850,000		50,000	50,000	750,000						

Description: Under a comprehensive program initiated in 2008, the District has inspected and performed long-deferred maintenance on its steel treated water storage tanks. The maintenance generally consists of repairing corrosion damage, recoating the interior and exterior of the tank, and bringing ladders, manways, railings and other tank features up to current standards. Half Moon Bay Tank #2 Is a 400,000 gallon steel tank, one of three tanks located on the Nunes Treatment Plant site.The District completed repair and recoating of Half Moon Bay Tank #1, the smallest and the oldest of the three tanks, in 2012. The Tank #1 project also included providing improved access to the roof of Tank #2 via a catwalk from the roof of Tank #1, eliminating Tank #2's access ladder. This project provides for recoating the interior and exterior of Half Moon Bay Tank #2 and making necessary repairs/modifications to the structure.

11-06 **Half Moon Bay Tank #3 Interior + Exterior Recoat** Pump Stations/Tanks/Wells

Priority: 1 Maintains essential District facilities.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,100,000		50,000	50,000		1,000,000					

Description: Under a comprehensive program initiated in 2008, the District has inspected and performed long-deferred maintenance on its steel treated water storage tanks. The maintenance generally consists of repairing corrosion damage, recoating the interior and exterior of the tank, and bringing ladders, manways, railings and other tank features up to current standards. Half Moon Bay Tank #2 Is a 400,000 gallon steel tank, one of three tanks located on the Nunes Treatment Plant site. The District completed repair and recoating of Half Moon Bay Tank #1, the smallest and the oldest of the three tanks, in 2012. This project provides for recoating the interior and exterior of Half Moon Bay Tank #3.

16-08 **Denniston Well Field Improvements** Pump Stations/Tanks/Wells

Priority: 2

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$150,000						150,000				

Description: Due to deterioration over 40+ years of life, the Denniston wells produce a minimal quantity of water. Denniston wells 2, 3 and 4 are beyond repair. Wells on the south side of creek (3 and 4) are very low producers (<20 gpm) and have a serious iron bacteria problem. The casing in well 2 is damaged beyond repair. Subject to further evaluation of potential water availability by our hydrologists, this project would abandon the existing wells and install a new well at an existing well

18-04 **Crystal Springs Pump Station - Fire System** Pump Stations/Tanks/Wells

Priority: 2

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$40,000						40,000				

Description: The existing fire system uses raw water which has corroded most of the system. The current fire control system is also obsolete, and most parts are not available to rebuild the system. This will fund replacement.

18-05 Denniston Tank THM Residual Control Pump Stations/Tanks/Wells

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$80,000	80,000									

Description: This project involves installing a mixer in the Denniston Tank in order to reduce the potential for formation of Trihalomethanes and Haloacetic acids. (The potential for formation of Trihalomethanes and Haloacetic acids is much greater with Denniston water than the Pilarcitos and Hetch Hetchy Systems.) We installed mixers in the El Granada Tanks in previous years with a subsequent 10% reduction in the formation of Trihalomethanes and Haloacetic acids at theses sites. The existing Disinfection/Disinfection By Products Rule (DDBPR) mandates quarterly monitoring for Trihalomethane and Haloacetic acids at select sites within our distribution system.

18-06 **Crystal Springs Pump Station - (3) Butterfly Valves** Pump Stations/Tanks/Wells

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$80,000	80,000									

Description: The three valves that are located behind each pump leak from years of 300 psi flowing by them. When we need to isolate an individual valve, the valves will not completely seal.

19-05 **Tanks - THM Control** Pump Stations, Tanks, Wells

Priority:

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$120,000	120,000									

Description: This project will help address the regulated disinfection byproducts Total Trihalomethanes (TTHMS) and Halo Acetic Acid (HAAs) that are regulated by DDW. Over the years, the District's Running Annual Average for TTHMs has been very close to the MCL compliance limit. This will provide funding for tank mixers and residual control chlorination systems and allow for reduction in the TTHM levels in the distribution system.

18-06 **Crystal Springs Pump Station -- (3) Butterfly Valves** Pump Stations/Tanks/Wells

Priority: 1

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$80,000	80,000									

Description: The three valves that are located behind each pump leak from years of 300 psi flowing by them. When we need to isolate an individual valve, the valves will not completely seal.

12-12 San Vicente Diversion and Pipeline Water Supply Development

Priority: 1 Essential to secure vital local source water rights.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$2,300,000	100,000	200,000	1,000,000	1,000,000						

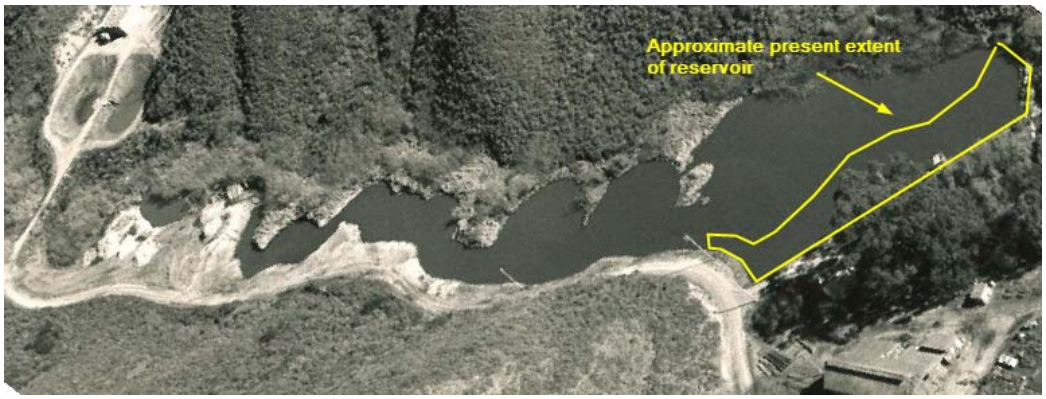
Description: A water rights permit issued in 1969 allows the District to divert up to 2 cubic feet per second, year-round, from San Vicente Creek. In order to secure this water right on a permanent basis, the District must divert water from San Vicente Creek. Although the District laid a temporary pipeline and diverted a small quantity of water in the 1980s, San Vicente diversion rights have essentially gone unused. The San Vicente Diversion and Pipeline Project includes the following: 1) construction of a new diversion structure and pumping station at the District owned diversion site on San Vicente Creek. 2) replacement of the existing District owned pipeline from the diversion site to Upper San Vicente Reservoir (approximately 2300 feet). 3) construction of flow control and bypass piping at Upper San Vicente Reservoir. 4) construction of a new pipeline from Upper San Vicente Reservoir to the Denniston pump station (approximately 4000 feet).

13-04 Denniston Reservoir Restoration Water Supply Development

Priority: 2 Improves yield, quality, and reliability of the District's primary local water source.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$1,000,000			1,000,000							

Description: Siltation in Denniston reservoir has reduced its volume to a small fraction of the capacity that existed when the District built the Denniston treatment plant. This reduction in volume reduces available yield during the dryer months and results in poor water quality during the wet months due to lack of settling time. This project would substantially restore the original volume of Denniston reservoir. The Environmental Impact Report completed in 2015 for the Denniston/San Vicente Water Supply Project includes consideration of Denniston reservoir dredging.



17-12 Recycled Water Project Development Water Supply Development

Priority: 2 Addresses District need to diversify water supply portfolio, lower water costs, develop drought-proof supply.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$100,000	100,000									

Description: This project provides funding for planning and development of a future recycled water project.

08-07 Nunes Filter Valve Replacement Water Treatment Plants

Priority: 3 Maintains essential District facilities.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$500,000	500,000									

Description: (The budget for this work was compressed so the District can hire a contractor to do the wok due to the daners of installing these valves in the pipe gallery.

13-05 Denniston WTP Emergency Power Water Treatment Plants

Priority: 2 Improves water supply reliability, emergency preparedness.

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$450,000	50,000	400,000								

Description: This project would provide emergency backup power and associated switchgear for the Denniston Water Treatment Plant and Denniston Pump Station. Denniston provides the only backup to the District's SFPUC water supply, which comes into the district via a single pipeline. Should the SFPUC supply be disrupted for an extended period – by an earthquake, for example – having emergency power at Denniston would ensure continuous flow of water to the District's customers.

18-11 Nunes Bulk Caustic Tank Water Treatment Plants

Priority:

		FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Total Budgeted:	$40,000		40,000								

Description: This project involves replacing the existing smaller caustic tanks with a larger bulk tank. The larger bulk tank will provide greater safety for our staff in handling caustic and allows for better pricing and operational efficiency. By adding an additional 2500 gallon double contained tank, we will reduce the total yearly deliveries from 10 or 11 to 3 or 4. This project will free up operator time with ordering and receiving each delivery. It will also allow us to take a "full load" with every delivery which will cut more than $.50 per gallon from our costs. We would save $1900 per delivery, or $6000-$8000 annually.