

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

Agenda for the Meeting of the Engineering Committee
of the Crescenta Valley Water District

To be held on

February 21, 2020 at 9:30 AM

Posted February 20, 2020 at 9:00 AM

Call to Order

Adoption of Agenda

Information Items

1. Review the Long-Term Capital Improvement Project Program
2. FY 19/20 – Capital Improvement Project Program – Status
 - Emergency Electrical Generator at La Granada Wastewater Lift Station
 - Replacement of Pump and Motor Assembly for Glenwood Boosters 32 & 33

Public Comments

At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable and speakers are limited to three (3) minutes each.

Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – March 13, 2020

Adjournment



Crescenta Valley Water District
Long-Term
Capital Improvement Project
Program Summary

February 2020

Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Well Rehabilitation

- Maintain CVWD's existing groundwater well production through annual well rehabilitation to meet annual adjudicated rights of 3,294 ac-ft.
- Rehabilitate each well at least 1 or 2 times over the next 9 years depending on well efficiency and water levels as shown on the schedule.
- Estimate a 2% to 3% annual increase in well production at current conditions after cleaning and chemical treatment of well casings, development of the aquifer, and replacing pump and motors assemblies.
- Increases in well production will vary depending on annual rainfall and stormwater recharge into the Verdugo Basin.
- Estimate for construction costs are \$145,000 per well including design and construction management by outside consultant, private contractor and materials.
- Average payback period for well rehabilitation based on avoided costs for purchasing imported water is about 8 to 11 months.

Crescenta Valley Water District			
Groundwater Well - Years in Service			
Well No.	Date Well Drilled	Casing Diameter	Years in Service
1	1931	16"	89
2	1927	14"	93
5	1949	20"	71
6	1949	20"	71
7	1930	16"	90
8	1951	16"	69
9	1945	20"	75
10	1945	20"	75
11	1946	20"	74
12	1948	16"	72
14	1950	16"	70
15	2000	12"	20
16	2011	12"	9
Average Age Wells 1 - 14			77

CVWD - 10-yr Well Replacement Project FY 20/21 - FY 30/31													
Well No.	Last Rehab Date	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	Total
1	2019					X						X	2
2	2019			X				X					2
5	2018				X					X			2
6	2004												0
7	2019						X					X	2
8	2016				X						X		2
9	2014	X					X						2
10	2017								X				1
11	2015					X				X			2
12	2014		X						X				2
14	2012	X					X						2
15	2006												0
16	2016					X					X		2
18	2023			X					X				2
Total		2	1	2	2	3	3	1	3	2	2	2	23

New Groundwater Wells

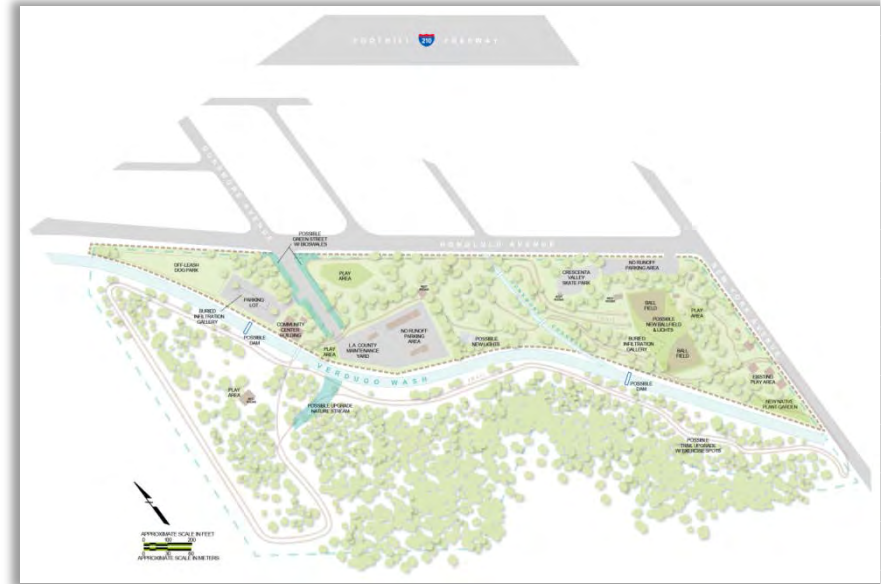
- Most of CVWD's groundwater wells were installed from 1927 to 1950.
- Well Nos. 1 – 14 beyond their useful life expectancy of 50 years for steel casing.
- Install new Well 18 & housing on Sycamore Ave to replace Well 10 at Glenwood Plant.
- Estimated construction cost for design \$175,000 and construction \$2.6M.
- Payback period for a new well, based on capital costs, operations & maintenance costs and avoided costs for purchasing imported water, is between 13 to 15 years.
- New Well 19 to be construction at the best location as recommended from the Groundwater Well Replacement Study discussed below.

Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Groundwater Basin Recharge

- Stormwater Recharge Project at Crescenta Valley County Park (CVC Park).
- Design and install a stormwater infiltration system within CVC Park that will direct stormwater from the Verdugo Wash into infiltration galleries for groundwater recharge.
- Feasibility Study indicated about 500 ac/ft per year could be infiltrated into the Verdugo Basin with about 85% captured by CVWD's wells.
- Stormwater recharge would reduce the fluctuation of water levels during wet and dry rainfall seasons, and
- Allow for capture of stormwater in the Crescenta Valley before going to the Los Angeles River.
- Stakeholders include City of Glendale, Los Angeles County Department of Public Works and Parks & Recreation, CV Town Council and ULARA Watermaster.
- Estimated costs for planning, \$175,000, design \$240,000 and construction ranging from \$2.4M to \$4.8M.
- Potential Grant Funding Availability:
 - o Proposition 1 Integrated Regional Water Management (IRWM) Implementation Grant – California Department of Water Resources
 - o Proposition 1 Storm Water Grant Program – State Water Resources Control Board – Division of Financial Assistance
 - o Proposition W – Los Angeles County
 - o Local Resource Program - Metropolitan Water District of Southern California
 - o Most grants require 50% matching funds
- Outstanding Issues:
 - o Storm Water Rights – City of Los Angeles
 - o State Water Resources Control Board – Division of Water Rights Approval
 - o CEQA Documentation

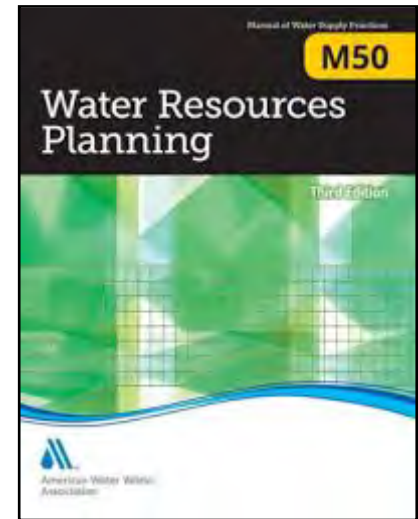


Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Water Supply Studies

- Water Resource Planning Study - Develop a water resource planning study to ensure a reliable water supply system that will meet the water challenges of today and tomorrow.
- GWP Water Supply Feasibility Study - Feasibility study to determine if CVWD can utilize Glendale Water as a potential water supply.
- Verdugo Basin Groundwater Model - Update the 2006 Groundwater model with updated data and to utilize the model for predict groundwater trends into the future.
- Groundwater Well Replacement Study - Study to locate potential sites within the Verdugo Basin to drill new water production wells.
- Groundwater Pilot Hole Study – Drill 4-inch diameter pilot holes in areas defined by the Groundwater Well Replacement Study for geological information, depth to water table and potential new water production wells.



Steel & Concrete Reservoir Re-Coating & Rehabilitation

- CVWD's goal is to maintain or improve conditions of the existing reservoirs to sustain the longevity of the water storage system which is between 35 years to 71 years old as shown in the table.
- Steel Reservoirs – re-coat at least one (1) steel reservoir site per year until FY 28/29.
- Concrete Reservoirs – inspection and rehabilitation of concrete reservoirs
- Rehabilitation includes repairing structural members in the roof, steel columns and the roof shell, removal of coal-tar enamel on floor and safety modifications (i.e. new exterior stairs)



- Estimated cost based on previous projects and the overall size of the reservoir. (i.e. 0.5MG tank – approximately \$480,000)

Crescenta Valley Water District					
Reservoir Inventory					
Site	Zone	Capacity (MG)	Material	Year Installed	Year In Service
Rosemont	3	0.50	Steel	1949	71
Markridge	5	0.50	Steel	1951	69
Goss Canyon #1	6	0.42	Steel	1954	66
Dunsmore	7	0.42	Steel	1954	66
Edmund #1	9	0.50	Concrete	1956	64
Oak Creek #1	4	1.60	Steel	1958	62
Goss Canyon #2	6	0.50	Steel	1961	59
Oak Creek #2	4	0.50	Steel	1961	59
Eagle Canyon	5	1.50	Steel	1961	59
Pickens Canyon	11	0.50	Steel	1962	58
Cresta Heights # 2	8	0.50	Steel	1965	55
Edmund #2	9	0.50	Steel	1966	54
Cresta Heights # 1	8	0.50	Steel	1966	54
Shields	10	0.60	Steel	1967	53
Ordunio	2	2.75	Steel	1970	50
Encinal	1	3.00	Concrete	1983	37
Williams	2	3.60	Concrete	1985	35

Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Steel Reservoir Corrosion Protection System

- Inspection of cathodic protection system – every 5 years
- Replacement of cathodic protection system – FY 26/27
- Estimated Cost is \$75,000.

Reservoir Water Quality Mixing System

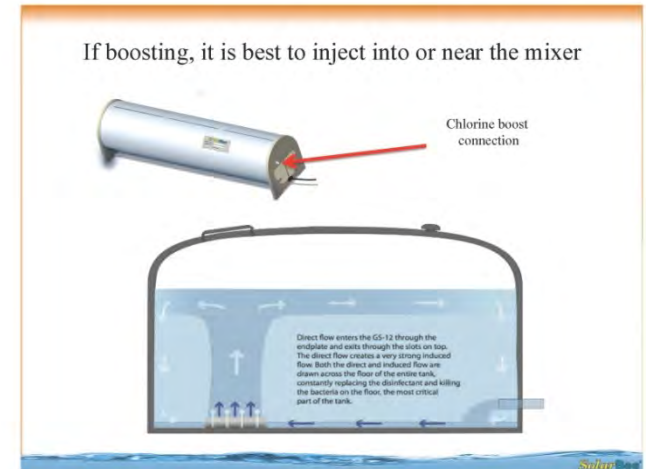
- Installation of water quality mixing systems including chlorine and ammonia injection systems to maintain chloramine levels in reservoirs and to make disinfection adjustments to prevent nitrification.
- Estimated cost based on quote from manufacturer is between \$22,000 and \$25,000 per reservoir.

Water Storage Studies

- Reservoir Inlet/Outlet & Overflow Piping Study – Study to review each reservoir site and provide recommendations for upgrading the common inlet/outlets and to review the overflow discharge locations relative to state and local agencies requirements.
- Ocean View #2 Reservoir Feasibility Study – Study to determine the feasibility of constructing a new reservoir, pump station and pipeline to the most northerly area of Ocean View Blvd. The new reservoir will provide water to homes on Ocean View Blvd, which are on the easterly side of Pickens Canyon. This project would eliminate the three (3) pipeline crossings of Pickens Canyon.
- Conditional Assessment of Reservoir – Perform an assessment of CVWD's steel and concrete reservoirs to determine the remaining life expectancy and reservoir replacement.

Pipeline Replacement

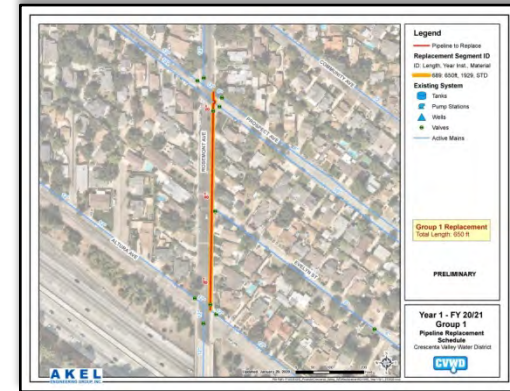
- Goal is to replace 50-yr & older pipelines within the next 75-years. Currently about 45% of CVWD's pipelines are 50 years or older.
- CVWD would have to replace about 2 miles a pipe a year for the next 20-years to meet this goal.
- Replacement ranking based on age of pipeline and grouping pipelines within a specific area of the District for ease of construction.
- Pipeline replacement budget based on average cost of \$435 per foot, which was established by using previously, completed pipeline costs, current material costs and use of outside consultants for design and construction management.



Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

- Year 1 - 4 Pipeline replacement areas within the District
 - o Length – 7,645 ft
 - o Design – By outside consultant
 - o Materials – Purchased by CVWD
 - o Contractor – Up to 3 contractors used for construction to complete within FY
 - o Cost Estimate - \$3.24M
- Year 2 – Length – 10,300 ft; Cost - \$4.6M
- Year 3 – Length – 10,800 ft; Cost - \$4.9M
- Year 4 – Length – 10,900 ft; Cost - \$5.2M
- Year 5 – Length – 10,600 ft; Cost - \$5.2M
Total Cost - \$23.14M



Annual Pump /Motor Replacement

- Maintain, replace, or upgrade CVWD's 34 booster pumps to meet customer water demands, maximize "water to wire" efficiency and control electrical power usage.
- Replace or repair at least two (2) booster pumps per year based on number of pump hours, pump efficiency, vibrations, and last time pump was repaired/replaced.
- Replace existing motors with premium efficiency motors to decrease power costs.
- Estimated construction cost for one (1) booster replacement based on past projects is about \$75,000 per booster pump.

Pump Station and Motor Control Center Upgrades

- CVWD's objective is to upgrade the existing booster pump stations with new buildings to protect the equipment from the environment, increase the life of the booster motors and worker's safety.
- Replace or upgrade the fourteen (14) electrical motor control centers that provide electrical power and controls to booster pumps, maximum the use of new technology to reduce power costs and connections for the District's portable electrical generators to run boosters during a power outage.



Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

- Past experience with the design and construction of the previous MCC, was that design, planning with SCE or Glendale, and ordering equipment will occur during one fiscal year and construction the next fiscal year.
- For planning purposes, the following would be the schedule for six (6) pump station upgrades and replacement of the electrical motor control centers for the next 10-years. The remaining pump stations/MCC centers will be planned for the next 10-years.



Crescenta Valley Water District Pump Station and MMC Upgrade Schedule													
Priority	Location	Pressure Zones From/To	Type of Pump	# of Pumps	Total Capacity (gpm)	Building	Last Date MCC Update	Years in Service 2020	FY for Design	Cost Estimate	FY for Const.	Cost Estimate	Total Cost Estimate
1	Paschall Booster Station	0 to 4	Vertical turbine	2	1,750	No	1980	40	20/21	\$170,000	21/22	\$1,127,000	\$1,297,000
2	Edmund #2 Booster Station	9 to 10	Vertical turbine	2	650	No	1996	24	22/23	\$176,000	23/24	\$935,000	\$1,111,000
3	Cresta Heights Booster Station	8 to 9	Vertical turbine	1	460	No	1997	23	24/25	\$182,000	25/26	\$1,049,000	\$1,231,000
4	Ocean View Booster Station	2 to 3	Vertical turbine	3	2,340	No	1997	23	26/27	\$190,000	27/28	\$1,160,000	\$1,350,000
5	Goss Canyon Booster Station	6 to 9	Vertical turbine	1	575	No	1985	35	28/29	\$194,000	29/30	\$1,222,000	\$1,416,000
6	Rosemont Booster Station	3 to 5	Submersible	1	1,000	No	1998	22	30/31	\$196,000	31/32	\$1,250,000	\$1,446,000
	Total									\$1,108,000		\$6,743,000	\$7,851,000

Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Pressure Reducing Valve Stations

- CVWD's objective is to install pressure reducing valve (PRV) stations within a vault between pressure zones to allow for the movement of water during an emergency event from a higher pressure zone to a lower pressures zone.
- The PRV stations will replace the existing "Zone" valves, which a manual method to flow water between pressure zones. However, a number of the Zone valves have not been operated in over twenty years or more and there is a concern that if a zone valve is opened; it may not be able to close, which can cause increased pressure in a lower zone.
- PRV Station - Zone 2 to Zone 1 near Ramsdell and Mayfield – FY 19/20 calls for the installation of a new PRV station near the intersection of Mayfield Ave and Ramsdell Ave. to provide water from Zone 2 to Zone 1 when Encinal Reservoir is out of service.
- Pressure Reducing Valve (PRV) Station Analysis Study – A study to determine the location and flow requirements to install PRV stations for each pressure zone and review the existing PRV's to determine if they need to be upgraded. The study will include a project schedule and estimated design and construction costs that will be included in the updated 10-year CIP program.



Water Surge Control

- CVWD's objective is to install and upgrade the water surge suppression system to protect existing booster pumps and pipelines from damage during a water surge condition.
- A water surge condition occurs when there is a sudden loss of power, booster pumps shut off and a wave of water and energy occurs inside the pipe. This wave usually starts at the upstream side of a pressure zone and travels downstream to the booster pump that had just been shut off. The wave speed could generate over 300 psi of pressure inside the pipe, which could burst the pipe or damage the downstream booster pump.
- There are two (2) existing surge protection devices, one at Paschall and the other at Glenwood. The surge protection device at Paschall was installed in 1955 and the device at Glenwood was installed in 1972 and is also out of service.
- The surge protection tank at Glenwood will be replaced in FY 20/21 at an estimated cost of \$50,000.



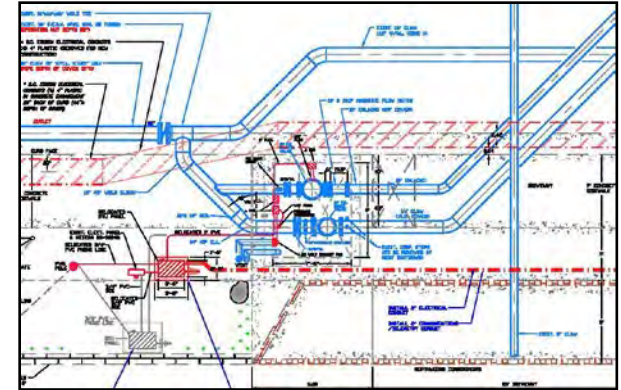
Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

- The surge protection tank at Paschall is planned to be replaced in FY 21/22 at an estimated cost of \$85,000 as part of the upgrade to the Paschall Booster Station.
- A new surge protection tank at Mills including design and construction are planned for FY 22/23 at an estimated cost of \$105,000.

Other Water Distribution Projects:

- Ramsdell/Mayfield Mixing Station – CVWD maintains an underground vault near the intersection of Ramsdell Ave and Mayfield Ave that is used to mix imported water from FMWD and groundwater from the Glenwood plant. The existing piping, valves and controls are in bad condition and need to be replaced.
 - o The majority of the design has been completed by staff and the final design will be completed by an outside consultant at an estimated cost of \$45,000 in FY 20/21 and estimated construction cost based on past projects of about \$470,000.
- Replacement of Aeration Tower at Mills Plant – the aeration tower, which is used to increase pH in the water, was installed in 1969. The exterior and base of the tower is corroded and needs to be replaced. The estimated cost for design and construction is \$75,000.

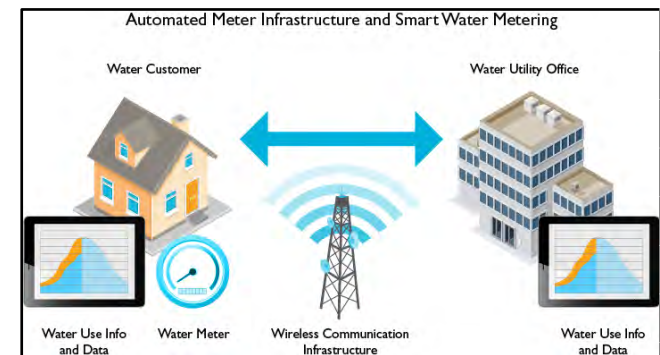


Water Distribution Studies:

- Pressure Reducing Valve (PRV) Station Analysis Study - A study to determine the location and flow requirements to install PRV stations for each pressure zone and review the existing PRV's if determine if they need to be upgraded. The study will include a project schedule and estimated design and construction costs that will be included in the updated 10-year CIP program
- Energy Use Efficiency Study – A study to review CVWD's energy supply and provide recommendations to increase efficiency and reduce the amount of energy used by the District that utilizes from SCE, GWP or other renewable sources.
- Water Distribution Hydraulic Analysis Study – Continue updating the existing hydraulic model with additional studies on water quality age, chlorination and other studies as requested.

Advanced Metering infrastructure (AMI) System

- CVWD's objective is to install an AMI system within the next five (5) years to replace older meters, decrease water loss, increase efficiencies, increase customer service, outage detection, tamper notification and reduce labor costs as a result of automating reads.



Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

- CVWD will also be able to offer new innovative products, flexible billing cycles, leak detection, and on-line water consumption.
- Over 6,200 ¾-inch and 1-inch meters have been replaced with new Sensus Iperl “Smart Meters and about 1,700 more meters need to be installed by a contractor.
- CVWD’s large meters (1-½ to 4-inch meters) need to be upgraded to Master Meter Octave “Smart Meters and installed by a contractor.
- All of CVWD’s Meter Box lids need to be replaced with new meter box lids with end points to connect the smart meter to the AMI communications network.
- Design and installation of an AMI communications network to bring the water meter data from the smart meter to a central data host
- Design and installation of a customer service interface to allow residents to track their water use, pay bills and get helpful information.
- Year 1 – Install AMI communications network and continue with ¾-inch and 1-inch meter replacement
- Year 2 – Install 1-½ to 4-inch meters and meter box lids
- Year 3 – Install AMI customer service interface and continue with installation of meter box lids
- Year 4 – Continue with installation of meter box lids and training for AMI System
- Year 5 – Complete installation of meter box lids and go “Live” with AMI System.



Radio Communication Network for SCADA

- CVWD has an existing radio communication network that works on the 900 MHz radio frequency. In the past year, the radio system has seen interference with other communication devices and the equipment is near the end of its useful life.
- CVWD's objective is design and install an upgraded radio communication network including analysis of available radio frequencies, upgrading radio equipment, creating a redundancy system and increasing efficiency of the network.
- This project will be a one year project to replace the District’s 26 radio devices at an estimated cost of \$266,000.



Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Supervisory Control and Data Acquisition (SCADA) System Upgrade

- CVWD has an existing SCADA system with RTU/PLC's installed at each of the District's facilities. The existing system was installed in 1996 by Tesco Controls and the equipment, programing and integration are all proprietary to Tesco.
- CVWD's objective is to design and install an upgraded system such that the equipment, programing and integration are "universal" and can be installed, repaired and/or replaced by different companies.
- This project will be a two year project for the design, new equipment, programing, integration at the District's 26 locations at an estimated cost of \$870,000.

New Emergency Electrical Generator

- Design and installation of a permanent emergency electrical generator with automatic transfer switch at CVWD's Mills Plant to operate Well 1, two (2) 150 Hp booster pumps, disinfection system and future nitrate removal treatment plant.



- Estimated Cost for a new emergency electrical generator is \$128,000.

Seismic Sensors & Valve Actuators

- Design and installation of seismic sensors and valve actuators system on the inlet and outlet valves of the reservoir to turn the valves during an earthquake event to prevent water from flowing out of the reservoir during a downstream main break.
- The seismic systems are to be installed at Ordunio, Oak Creek, Encinal and Ocean View Reservoirs at an estimated cost of \$490,000.

Local Hazard Mitigation Plan - FEMA Grant

- CVWD has applied for a grant from CalOES and FEMA to prepare a Local Hazard Mitigation Plan to address high priority hazards related to its water and sewer systems including drought, water shortage, energy shortage/outage, wildfire, earthquake, terrorim and cyber-attack.
- The Local Hazard Mitigation Plan requires coordination with local, state, and federal agencies, takes the "whole community" approach including non-profits, religious institutions, disability access and functional need groups, experts, or members of the public; and may also include a cross-section of the community, such as residents, community leaders, and business owners.



Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

- The Local Hazard Mitigation Plan will identify projects that could be funded through the Pre-Disaster Mitigation (PDM) program which makes Federal funds available to local communities to plan for and implement and sustain cost-effective measures designed to reduce the risk to individuals and property from natural hazards, while also reducing reliance on Federal funding from future disasters.

Williams Reservoir Site Evaluation and Improvement Study

- CVWD's objective is to prepare a report based on updated topography, soils investigation and utility research to determine the most effect way to utilize the site for storage of material, cleaning of equipment and accessibility.
- Report will include preliminary site layouts and estimated construction costs to meet the District's needs.
- Project is estimated to be \$110,000.

New Roof – Old Encinal Concrete Reservoir for Storage

- CVWD has an existing 70 ft diameter concrete reservoir that is being used for storage of material and equipment with no roof. The material and equipment are exposed to the environment (rain, sun, etc.).
- The District wants to put a permanent roof over the existing structure and utilize the area for storage.
- This project will be a one year project for design and installation of the new roof at an estimated cost of \$150,000.

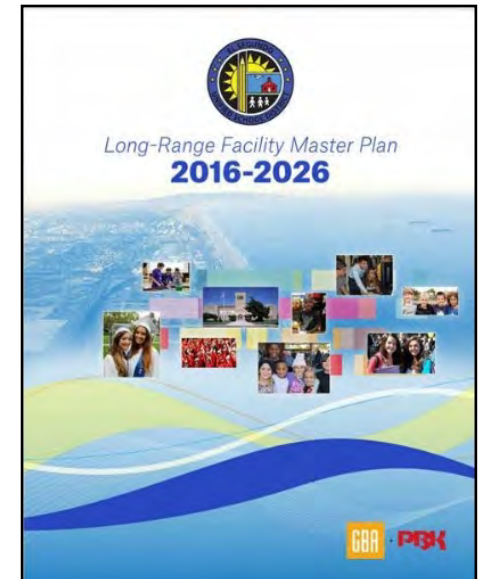
Facilities Maintenance Master Plan

- CVWD's objective is to prepare a facilities maintenance master plan that will evaluate CVWD owned sites with respect to site improvements, roadway improvements, security, accessibility, worker's safety and miscellaneous improvements.
- The master plan will include a recommendation for improvements for each site and a preliminary cost estimate.
- The master plan would not include an evaluation of the reservoirs, booster pumps, motor control center and other large equipment.
- The results of the master plan will provide the District a road map for improving all sites within a 10-year period.
- Project is estimated to be \$110,000.



Local Mitigation Planning Handbook

March 2013

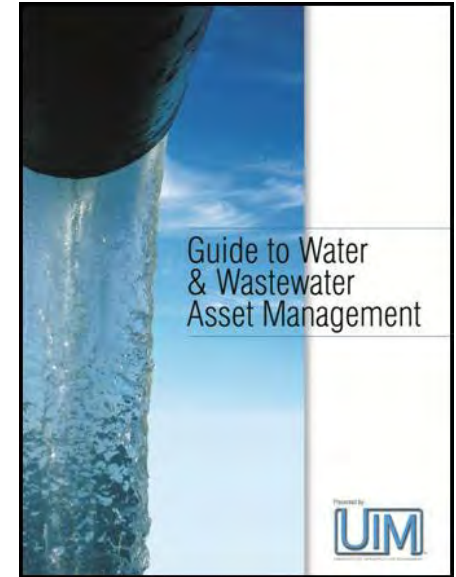


Crescenta Valley Water District

Long Term Capital Improvement Project Program Summary

Asset Management Study:

- CVWD's objective is to prepare an asset management study that can be used to make sure that planned maintenance can be conducted and capital assets (pumps, motors, pipes, etc.) can be repaired, replaced, or upgraded on time and that there is enough funding available.
- Asset management programs with good data—including asset attributes (e.g., age, condition, and criticality), life-cycle costing, proactive operations and maintenance, and capital replacement plans based on cost-benefit analyses—can be the most efficient method of meeting this challenge.
- Project is estimated to be \$100,000.



Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
1. Water Supply												
A. Groundwater Water Supply												
i. Well Rehabilitation												
Well 16 Rehabilitation	\$ 130,800											
Well 11 Rehabilitation	\$ 59,200											
Well 9 Rehabilitation		\$ 144,000										
Well 14 Rehabilitation		\$ 144,000										
Well Rehabilitation (1 or 2 Wells per year)			\$ 155,000	\$ 160,000	\$ 315,000	\$ 479,000	\$ 495,000	\$ 215,000	\$ 550,000	\$ 340,000	\$ 360,000	\$ 360,000
ii. New Wells												
Well 18 (Sycamore House) - Design			\$ 175,000									
Well 18 (Sycamore House) - Construction				\$ 2,600,000								
Well 19 - Design											\$ 200,000	
Well 19 - Construction												\$ 2,700,000
iii. Groundwater Basin Recharge												
Stormwater Recharge Project at CVC Park - Planning		\$ 175,000										
Stormwater Recharge Project at CVC Park - Design					\$ 175,000							
Stormwater Recharge Project at CVC Park - Construction						\$ 1,000,000	\$ 500,000					
B. Imported Water Supply												
C. Recycled Water System												
i. Recycled Water												
Update Recycled Water System Study								\$ 100,000				
ii. Membrane Bioreactor Technology (MBR)												
D. Water Supply Studies												
Water Resources Study		\$ 45,000										
GWP Water Supply Feasibility Study		\$ 15,000										
Update Verdugo Basin Groundwater Model		\$ 125,000										
Groundwater Well Replacement Study					\$ 125,000							
Groundwater Pilot Hole Study					\$ 315,000							
WS Total	\$ 194,500	\$ 648,000	\$ 330,000	\$ 2,760,000	\$ 930,000	\$ 1,479,000	\$ 995,000	\$ 315,000	\$ 595,000	\$ 340,000	\$ 560,000	\$ 3,060,000

Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
2. Water Storage												
A. Reservoir Rehabilitation												
i. Steel Reservoir Re-Coating/Roof/Vents Rehabilitation												
Markridge	\$ 453,300											
Rosemont		\$ 480,000										
Eagle Canyon			\$ 740,000									
Edmund #2				\$ 500,000								
Goss Canyon #1 & #2					\$ 1,100,000							
Shields						\$ 550,000						
Dunsmore							\$ 600,000					
Cresta Hts #1 & 2								\$ 1,250,000				
Pickens Canyon									\$ 650,000			
Ordunio										\$ 1,256,000		
ii. Concrete Reservoir Rehabilitation												
Encinal				\$ 150,000								
Williams (Ocean View)					\$ 160,000							
Edmund #1								\$ 170,000				
iii. Steel Reservoir Corrosion Protection System												
Cathodic Protection Inspection & Replacement								\$ 75,000				
iv. Overflow & Drain System Upgrade												
B. Reservoir Water Quality												
i. Water Quality Mixing System												
Reservoir Mixing System - 8 Reservoirs		\$ 179,300										
Reservoir Mixing System - 6 Reservoirs			\$ 135,500									
Reservoir Mixing System - 3 Reservoirs				\$ 95,000								
ii. Replacement of Common Inlet/Outlet Piping												
C. Water Storage Studies												
Reservoir Inlet/Outlet & Overflow Piping Study			\$ 85,000									
Conditional Assessment of Reservoirs Study				\$ 115,000								
Ocean View #2 Reservoir Feasibility Study								\$ 125,000				
WS Total	\$ 453,300	\$ 659,300	\$ 960,500	\$ 860,000	\$ 1,260,000	\$ 550,000	\$ 600,000	\$ 1,620,000	\$ 650,000	\$ 1,256,000	\$ -	\$ -

Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
3. Water Distribution												
A. Pipeline Replacement												
3200 & 3300 Blocks of Brookhill - 1,485 LF	\$ 510,000											
4700 & 4800 Block of Pennsylvania - 800 LF	\$ 722,136											
Annual Pipeline Replacement - 10,600 LF		\$ 3,250,000										
Annual Pipeline Replacement - 10,600 LF			\$ 4,750,000	\$ 5,004,000	\$ 5,150,000	\$ 5,200,000	\$ 5,356,000	\$ 5,517,000	\$ 5,883,000	\$ 6,060,000	\$ 6,218,000	\$ 6,405,000
B. New Pipelines												
C. Booster Pump System												
i. Annual Pump /Motor Replacement												
Boosters - Glenwood 32 & 33	\$ 85,000											
Boosters - Booster 26 at CH		\$ 75,000										
Boosters - Paschall A & B			\$ 111,000									
Boosters - Ocean View B & Booster 25				\$ 103,000								
Annual Booster Replacement - 2 Boosters					\$ 125,000	\$ 95,000	\$ 95,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
ii. Pump Station Upgrade												
Paschall Booster Station		\$ 85,000	\$ 500,000									
Edmund #2 - Booster Station				\$ 88,000	\$ 375,000							
Cresta Heights Booster Station						\$ 91,000	\$ 504,000					
Ocean View Booster Station								\$ 95,000	\$ 503,000			
Goss Canyon Booster Station										\$ 97,000	\$ 536,000	
Rosemont - Booster Station												\$ 98,000
iii. MCC Replacement												
Paschall		\$ 85,000	\$ 500,000									
Edmund #2				\$ 88,000	\$ 435,000							
Cresta Heights						\$ 91,000	\$ 450,000					
Ocean View								\$ 95,000	\$ 591,000			
Goss Canyon										\$ 97,000	\$ 536,000	
Rosemont												\$ 98,000
D. Pressure Reducing Stations												
PRS - Zone 2 to Zone 1	\$ 300,000											
E. Miscellaneous Projects												
i. Water Surge Control												
Rehabilitation Surge Tank at Glenwood		\$ 50,000										
Rehabilitation Surge Tank at Mills Plant				\$ 105,000								
Rehabilitation Surge Tank at Paschall Booster Station			\$ 85,000									
ii. Street/Utility/ Meter Adjustment & Upgrade												
iii. Misc.												
Repairs to Ramsdell Mixing Station	\$ -	\$ 515,000										
Mills Plant - Aeration Tower Rehabilitation			\$ 75,000									
F. Water Distribution Studies												
Pressure Reducing Valve (PRV) Station Analysis Study			\$ 45,000									
Energy Use Efficiency Study			\$ 51,000									
Water Distribution Hydraulic Study		\$ 75,000			\$ 75,000			\$ 105,000				
WD Total	\$ 1,617,136	\$ 4,135,000	\$ 6,117,000	\$ 5,388,000	\$ 6,160,000	\$ 5,477,000	\$ 6,405,000	\$ 5,962,000	\$ 7,127,000	\$ 6,404,000	\$ 7,440,000	\$ 6,751,000

Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
4. Water Treatment												
A. Nitrate Removal												
i. Glenwood												
Replace Ion Exchange Resin at Glenwood								\$ 198,000				
ii. Mills												
Ion Exchange Plant at Mills - Design								\$ 150,000				
Ion Exchange Plant at Mills - Construction												
iii. Ordunio												
Replace Bio Remediation AroNite Media at Ordunio								\$ 100,000				
C. Convert to Chloramines												
Conversion to Chloramination Disinfection	\$ 225,000											
D. Federal and State Regulations												
E. Water Quality Studies												
F. MTBE Removal												
WT Total	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 448,000	\$ -	\$ -	\$ -	\$ -
5. Technology												
A. Advanced Metering infrastructure (AMI) System												
AMI - Conversion of 3/4" to 4" Meters to Smart Meters	\$ 178,500	\$ 15,700	\$ 395,500	\$ 120,000	\$ 76,000							
AMI - Install Meter Lids & Radio Transceivers				\$ 93,550	\$ 332,900	\$ 494,000						
AMI - Install & Integration of Fixed Area Network		\$ 227,000	\$ 153,000									
AMI - Customer Service Interface				\$ 278,450	\$ 56,100							
B. Supervisory Control and Data Acquisition (SCADA) System												
Upgrade Communication Radio Network for SCADA		\$ 266,000										
SCADA RTU Replacement (35 sites) - Design	\$ 87,000											
SCADA RTU Replace - Equipment & Integration		\$ 609,000	\$ 174,000									
C. Graphical Information System (GIS)												
Field Asset Tagging			\$ 70,000									
TECH Total	\$ 265,500	\$ 1,117,700	\$ 792,500	\$ 492,000	\$ 465,000	\$ 494,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

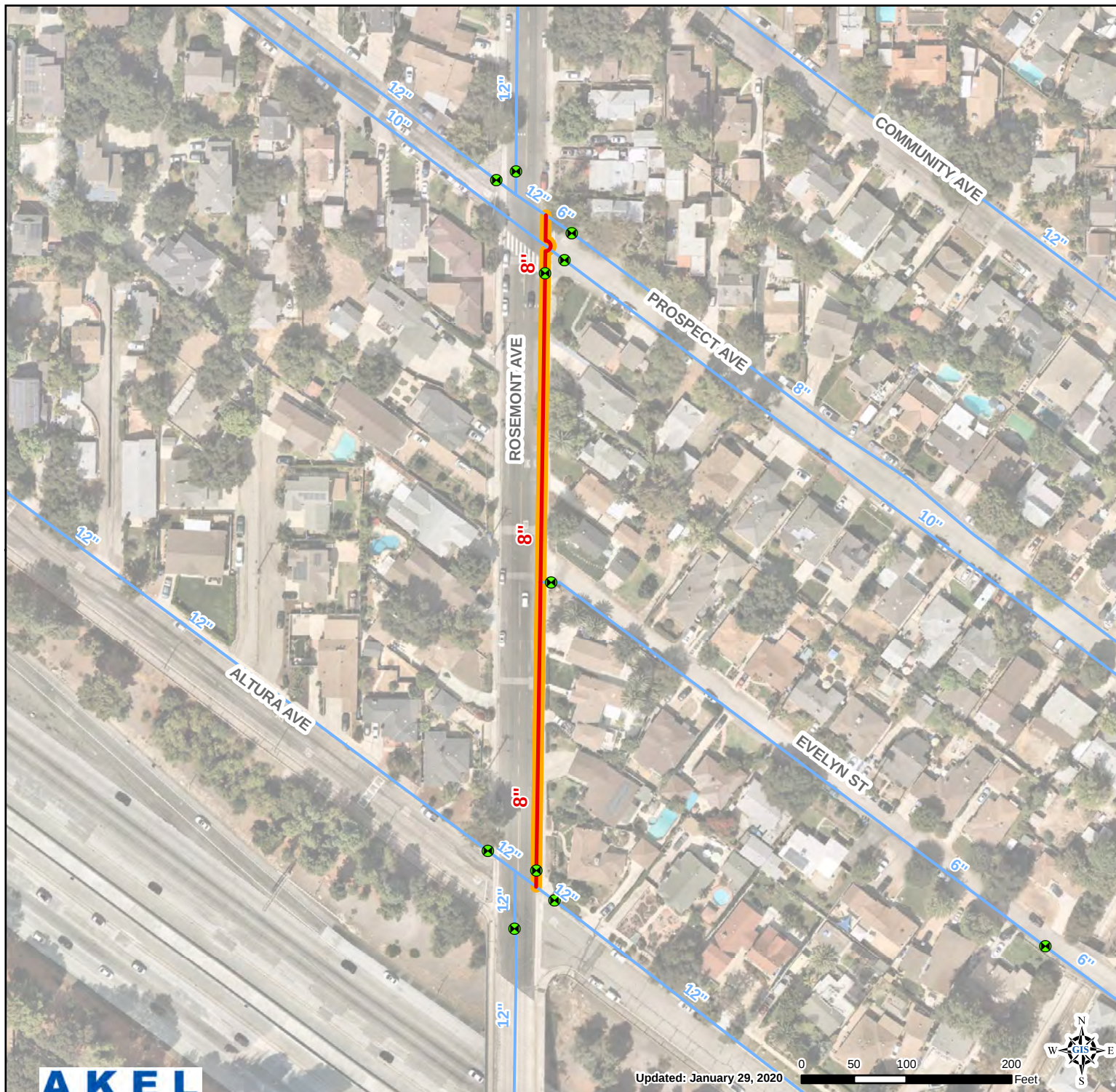
Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
6. Public Safety/Emergency Response												
A. Emergency Electrical Generators												
New Emergency Electrical Generator - Mills Plant									\$ 128,000			
B. Water Storage												
Dunsmore/Pickens - Seismic Sensors & Valve Actuators	\$ 7,500											
Ordunio - Seismic Sensors & Valve Actuators			\$ 150,000									
Oak Creek #1 & #2 - Seismic Sensors & Valve Actuators					\$ 185,000							
Encinal & Ocean View - Seismic Sensors & Valve Actuators								\$ 155,000				
C. Security												
D. Miscellaneous												
Local Hazard Mitigation Plan - FEMA Grant		\$ 165,000										
SF/ER Total	\$ 7,500	\$ 165,000	\$ 150,000	\$ -	\$ 185,000	\$ -	\$ -	\$ 155,000	\$ 128,000	\$ -	\$ -	\$ -
7. Facilities & Planning												
A. Main Office												
Expansion with New Roof with Solar Panels			\$ 50,000									
New Main Office Building - Design												
B. Glenwood Plant												
C. Mills Plant												
D. Reservoir Site Improvements												
Williams Reservoir Site Evaluation and Improvement Study	\$ 110,000											
Roof for Old Encinal - Storage Bldg		\$ 150,000										
Facilities Maintenance Master Plan		\$ 125,000										
5. Misc. Properties												
6. District Planning												
Asset Management Study			\$ 100,000									
F & P Total	\$ 110,000	\$ 275,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total	\$ 2,872,936	\$ 7,000,000	\$ 8,500,000	\$ 9,500,000	\$ 9,000,000	\$ 8,000,000	\$ 8,000,000	\$ 8,500,000	\$ 8,500,000	\$ 8,000,000	\$ 8,000,000	\$ 9,811,000

	ID No.	Street Name	Block No.	Year Const or Replaced	Pipe Size (in)	Pipe Length (ft)	Length of Pipe Replace (ft)	Atlas Book Page No.		Comment	Pipe Material	Years in Service	Total No. Leaks
Year 1 - FY 20/21	1	689 ROSEMONT	4300	1929	8	650	650	27		Prospect to Altura	STD	91	3
	2	153 ENCINAL	3400	1932	10	810	1460	13	14	New York to Dunsmore; Cross Channel	STD	88	0
		154 ENCINAL	3500	1932	10	780	2240	13	14	New York to Dunsmore; Cross Channel	STD	88	1
	3	521 PARAISO WAY	2700	1946	2	180	2420	16			STD	74	3
		135 DYER	4800	1946	2	380	2800	15		Needs to go with 2800 El Caminito	STD	74	0
		240 GLENWOOD	4800	1960	6	325	3125			Needs to go with 2800 El Caminito	CL&W	60	0
		729 STEVENS	2800	1958	6	125	3250			Needs to go with 2800 El Caminito	CL&W	62	0
		142 EL CAMINITO	2800	1946	8	680	3930	15	16		STD	74	1
	4	363 LOS OLIVOS	2800	1947	6	850	4780	15	16		STD	73	4
		364 LOS OLIVOS	2900	1947	6	850	5630	15			STD	73	2
Year 2 - FY 21/22		365 LOS OLIVOS	3000	1946	6	800	6430	15			STD	74	3
		366 LOS OLIVOS	3100	1946	6	830	7260	15	14		STD	74	1
	1	304 HONOLULU (SOUTH ALLEY)	2200	1933	5	740	740	32		Market to OV; concrete alley	OD	87	8
		452 MONTROSE LN (NORTH ALLEY)	2200	1933	5	700	1440	32		Thompson Ct to OV, concrete alley	OD	87	1
	2	383 MARKRIDGE (EASEMENT)	3200	1940	6	1300	2740	2		Easement, need survey; time?	STD	80	4
	3	756 THELMA	3300	1946	4	320	3060	14			STD	74	1
		11 ALABAMA	3200	1947	4	790	3850	14	7		STD	73	3
		71 CHERYL	4700	1947	4	290	4140	7	14		STD	73	0
		72 CHERYL	4800	1947	6	1080	5220	7			STD	73	2
	4	511 ORANGE (NORTH)	2600	1947	12	1280	6500	16		La Crescenta to Rosemont	CL&W	73	4
		512 ORANGE (SOUTH)	2600	1947	6	400	6900	16		In front of Mira Vista Elem.	STD	73	0
		513 ORANGE (SOUTH)	2600	1953	6	430	7330	16			STD	67	0
		505 ORANGE	2700	1953	6	1030	8360	16		Combine into one 12-inch pipe	STD	67	0
		59 CAMINITO LN	4900	1954	4	310	8670	16			STD	66	2
	5	69 CECILVILLE	4900	1951	4	810	9480	16			STD	69	0
Year 3 - FY 22/23		770 VICWOOD	4900	1951	4	850	10330	16			STD	69	0
	1	200 FOOTHILL (NORTHERN PIPE)	3300	1948	4	290	290	14		New York to Penn	STD	72	0
		188 FOOTHILL	3200	1967	4	770	1060	14			OD	53	1
		189 FOOTHILL	3300	1967	4	820	1880	14			OD	53	5
	2	437 MONTROSE (NORTH)	2400	1948	10	880	2760	28		Florencita to La Crescenta	STD	72	0
		438 MONTROSE (NORTH)	2500	1948	10	820	3580	27	28		STD	72	0
		439 MONTROSE (NORTH)	2600	1948	10	910	4490	27			STD	72	0
		440 MONTROSE (NORTH)	2700	1948	10	940	5430	27			STD	72	1
	3	389 MARY	2900	1949	6	820	6250	21		Rasmdell to La Crescenta	STD	71	4
		388 MARY	2800	1973	6	850	7100	21	22		CL&W	47	0
		653 RAMSDELL (NORTH OF COMMUNITY)	4400	1949	6	590	7690	21			STD	71	0
		659 RAMSDELL (SOUTH OF COMMUNITY)	4400	1949	8	360	8050	21			STD	71	0
		FOOTHILL (Southern Easement)	2900	1949	6	800	8850	21			CL&W	71	
	4	247 GROMER	3400	1948	3	260	9110	7			STD	72	0
		9 ALABAMA	3000	1950	4	790	9900	15			STD	70	2
		10 ALABAMA	3100	1954	6	860	10760	15	14		STD	66	0

	ID No.	Street Name	Block No.	Year Const or Replaced	Pipe Size (in)	Pipe Length (ft)	Length of Pipe Replace (ft)	Atlas Book Page No.		Comment	Pipe Material	Years in Service	Total No. Leaks
Year 4 - FY 23/24	1	694 ROSEMONT (EASTERN PIPE)	4500	1949	8	660	660	22		Rosemont Reservoir to Foothill	STD	71	1
		706 ROSEMONT (WESTERN PIPE)	4600	1949	8	690	1350	22			STD	71	0
		707 ROSEMONT (WESTERN PIPE)	4700	1949	8	720	2070	22			STD	71	0
	2	731 STEVENS	3000	1955	6	820	2890	15			CL&W	65	0
		732 STEVENS	3100	1950	6	810	3700	15	14		STD	70	0
	3	763 UPPER TERRACE	2600	1950	4	210	3910	9			STD	70	0
		761 UPPER TERRACE	2400	1954	6	510	4420	10	17		STD	66	1
		762 UPPER TERRACE	2500	1954	6	600	5020	9			STD	66	1
	4	430 MONTROSE	3400	1970	6	920	5940	19	20		CL&W	50	0
		431 MONTROSE	3500	1951	2	100	6040	19			STD	69	1
	5	532 PARK VISTA	3200	1951	2	350	6390	25	20		STD	69	6
		533 PARK VISTA	3200	1951	4	300	6690	25			STD	69	0
	6	506 ORANGE	2800	1953	8	840	7530	16	15		STD	67	0
		507 ORANGE	2900	1953	8	800	8330	15	8		STD	67	0
		508 ORANGE	3000	1952	8	910	9240	8			STD	68	0
Year 5 - FY 24/25		509 ORANGE	3100	1952	8	910	10150	8	7		STD	68	0
		510 ORANGE	3200	1957	6	710	10860	7			CL&W	63	1
	1	37 BRIGGS	4500	1954	6	1150	1150	23			CL&W	66	1
		115 COUNTRYSIDE LN	2500	1954	6	190	1340	23			STD	66	1
		634 QUEENSVIEW	2500	1954	4	240	1580	23			STD	66	1
		740 SUNSET	4700	1958	12	710	2290	23			CL&W	62	0
		741 SUNSET	4800	1958	8	650	2940	23			CML & CMC	62	0
	2	750 TEASLEY	2300	1948	4	460	3400	17			STD	72	4
		751 TEASLEY	2300	1975	8	400	3800	17			CL&W	45	0
		752 TEASLEY	2400	1954	6	720	4520	17			STD	66	0
		753 TEASLEY	2500	1954	6	630	5150	17			STD	66	0
	3	547 PENNSYLVANIA	5300	1940	6	500	3240	7		Penn - 5-yr - 2024	STD	80	1
		67 CARACAS	2300	1954	6	780	5930	17			STD	66	1
	4	160 FAIRESTA	3000	1954	6	810	6740	15			STD	66	0
		308 HUME	4600	1954	6	210	6950	15			CL&W	66	0
		519 ORIN	4600	1954	6	200	7150	15			STD	66	3
	5	185 FOOTHILL	2100	1955	8	170	7320	29			CL&W	65	0
		186 FOOTHILL	2200	1955	8	980	8300	29			CL&W	65	0
		209 FOOTHILL (ZONE 2)	2300	1977	12	910	9210	29			CL&W	43	0
		210 FOOTHILL (ZONE 3)	2300	1977	8	1310	10520	29	28		CL&W	43	0

Crescenta Valley Water District
Pipeline Replacement Cost Estimate - Year 1

	ID No.	Street Name	Block No.	Year Const or Replaced	Pipe Size (in)	Pipe Length (ft)	Contractor Cost Estimate	Consultant, Materials, Permits, etc..	Total Cost Estimate	Cost/LF
1	689	ROSEMONT	4300	1929	8	650	\$231,000	\$157,260	\$388,260	\$597
2	153	ENCINAL	3400	1932	10	810				\$540
	154	ENCINAL	3500	1932	10	780	\$594,000	\$264,600	\$858,600	
3	521	PARAISO WAY	2700	1946	2	180				\$517
	135	DYER	4800	1946	2	380				
	240	GLENWOOD	4800	1960	6	325				
	729	STEVENS	2800	1958	6	125				
	142	EL CAMINITO	2800	1946	8	680	\$598,950	\$274,500	\$873,450	
4	363	LOS OLIVOS	2800	1947	6	850				\$449
	364	LOS OLIVOS	2900	1947	6	850				
	365	LOS OLIVOS	3000	1946	6	800				
	366	LOS OLIVOS	3100	1946	6	830	\$1,143,230	\$352,000	\$1,495,230	
						7,260	\$2,567,180	\$1,048,360	\$3,615,540	\$498
						</				



Legend

— Pipeline to Replace

Replacement Segment ID

ID: Length, Year Inst., Material

689: 650ft, 1929, STD

Existing System



Tanks



Pump Stations



Wells



Valves

— Active Mains

Group 1 Replacement

Total Length: 650 ft

PRELIMINARY

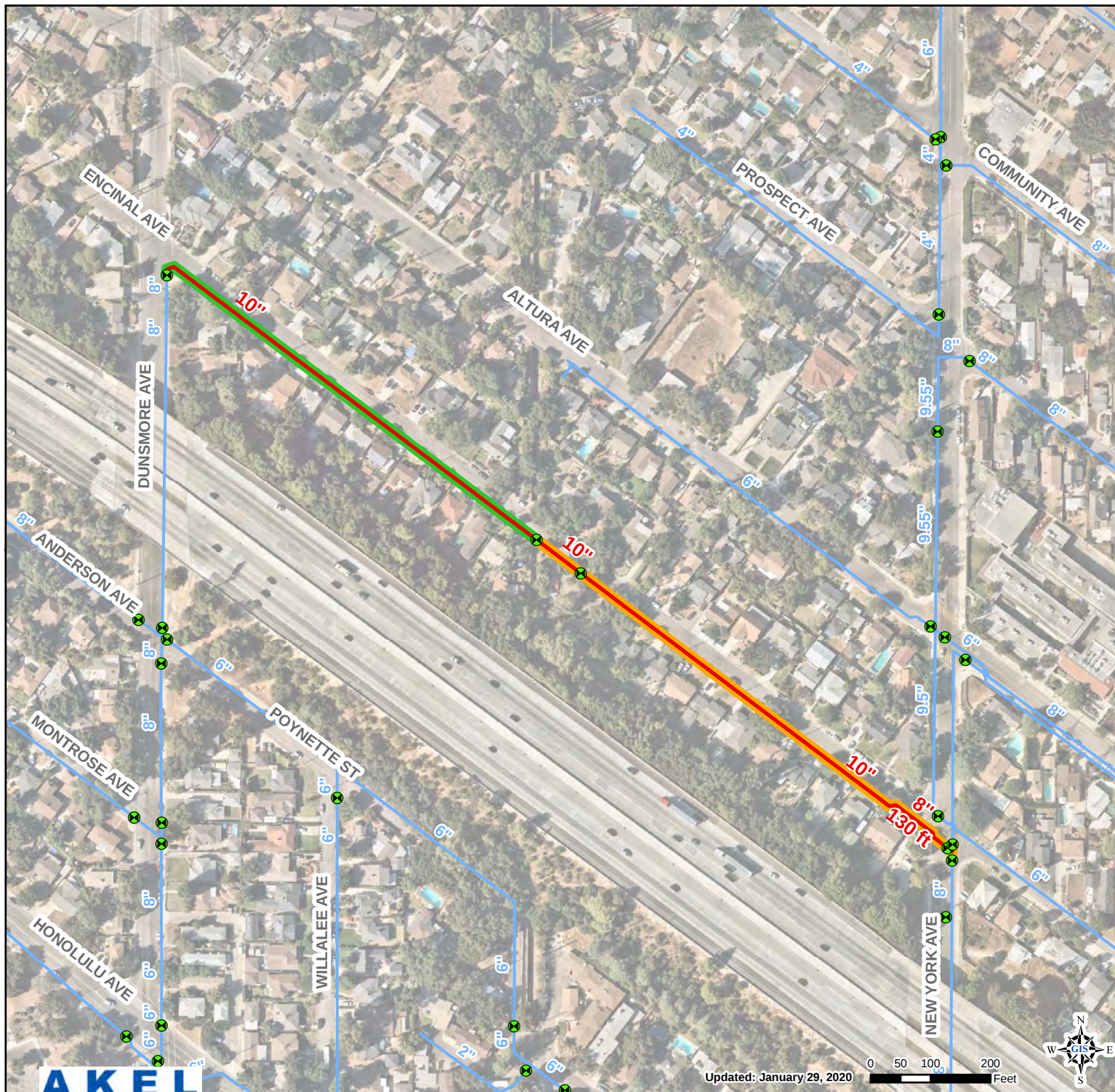
Year 1 - FY 20/21

Group 1

Pipeline Replacement
Schedule

Crescenta Valley Water District





Legend

— Pipeline to Replace

Replacement Segment ID

ID: Length, Year Inst., Material

153: 880ft, 1932, STD

154: 780ft, 1932, STD

Existing System

Tanks

Pump Stations

Wells

Valves

— Active Mains

Group 2 Replacement

Total Length: 1,660 ft

PRELIMINARY

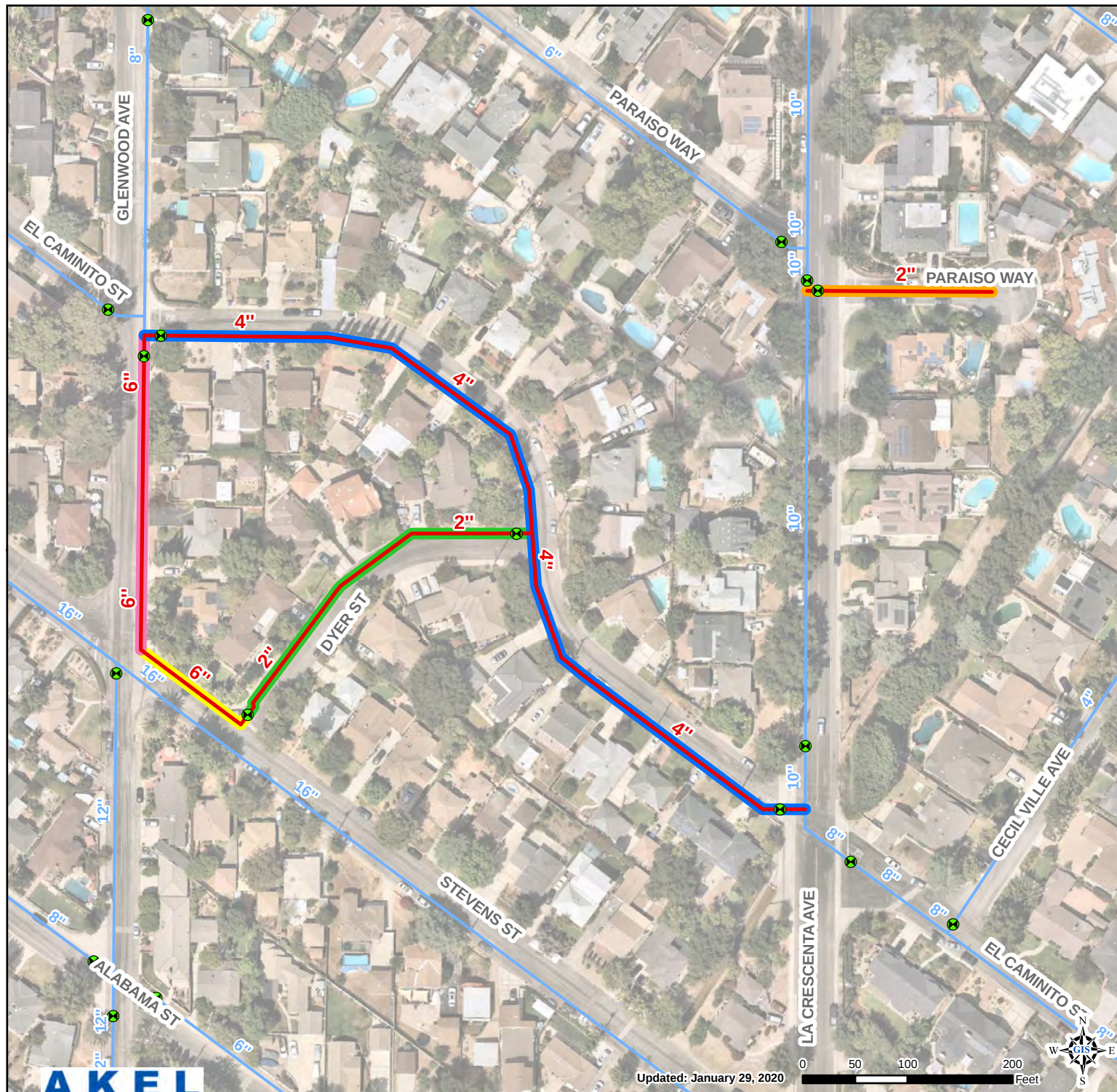
Year 1 - FY 20/21

Group 2

Pipeline Replacement
Schedule

Crescenta Valley Water District





Legend

— Pipeline to Replace

Replacement Segment ID

ID: Length, Year Inst., Material

135: 360ft, 1946, STD

142: 880ft, 1946, STD

240: 300ft, 1960, CL&W

521: 180ft, 1946, STD

729: 130ft, 1958, CL&W

Existing System

Tanks

Pump Stations

Wells

Valves

Active Mains

Group 3 Replacement

Total Length: 1,840 ft

PRELIMINARY

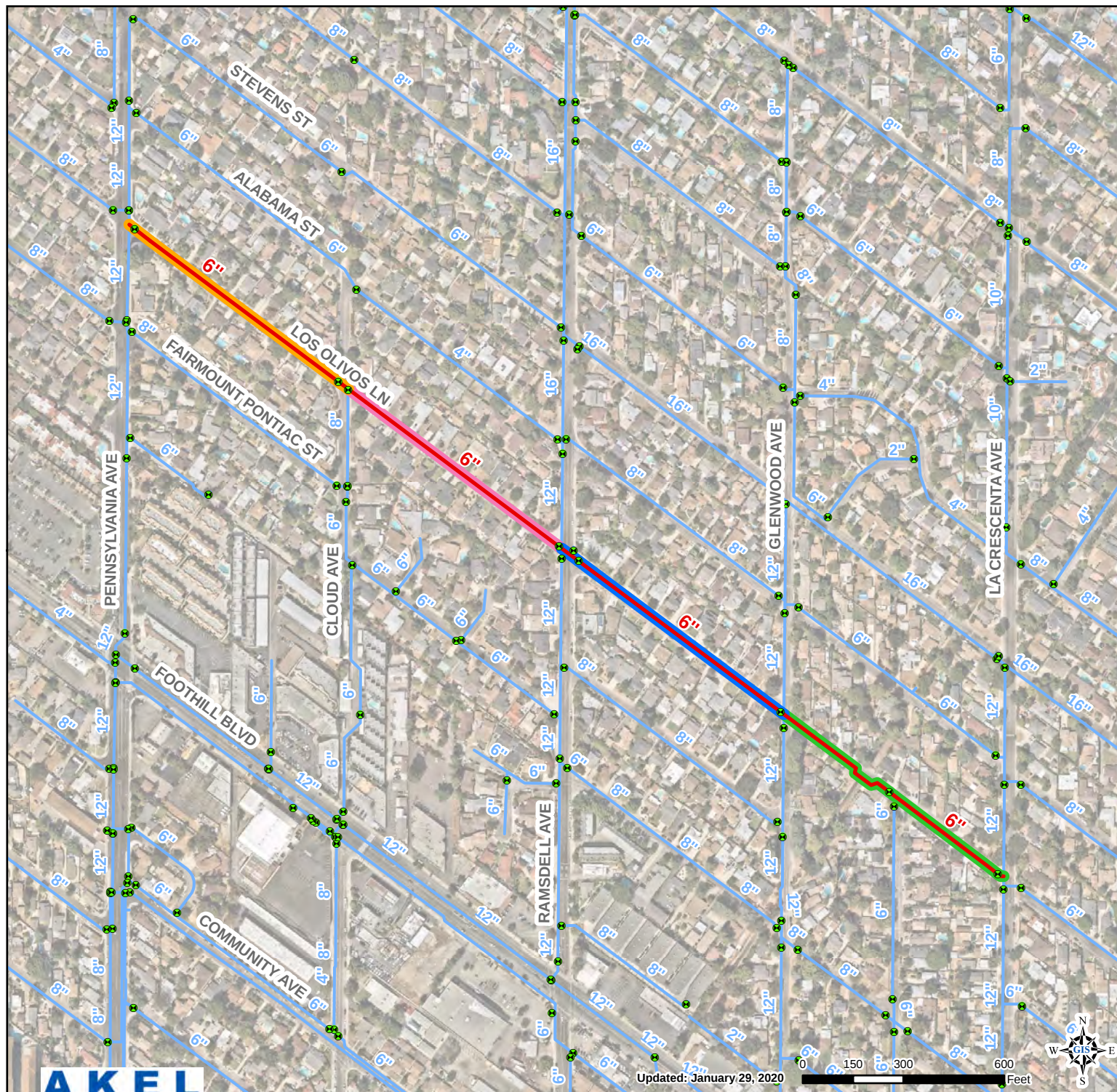
Year 1 - FY 20/21

Group 3

Pipeline Replacement
Schedule

Crescenta Valley Water District





Legend

— Pipeline to Replace

Replacement Segment ID

ID: Length, Year Inst., Material

363: 830ft, 1947, STD

364: 830ft, 1947, STD

365: 790ft, 1947, STD

366: 820ft, 1947, STD

Existing System

Tanks

Pump Stations

Wells

Valves

Active Mains

Group 4 Replacement

Total Length: 3,270 ft

PRELIMINARY

Year 1 - FY 20/21

Group 4

Pipeline Replacement
Schedule

Crescenta Valley Water District



Long-Term CIP Program with Bond Financing Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
1. Water Supply	\$ 194,500	\$ 648,000	\$ 330,000	\$ 2,760,000	\$ 930,000	\$ 1,479,000	\$ 995,000	\$ 315,000	\$ 595,000	\$ 340,000	\$ 560,000	\$ 3,060,000
2. Water Storage	\$ 453,300	\$ 659,300	\$ 960,500	\$ 860,000	\$ 1,260,000	\$ 550,000	\$ 600,000	\$ 1,620,000	\$ 650,000	\$ 1,256,000	\$ -	\$ -
3A. Water Distribution - Pipeline	\$ 1,232,136	\$ 3,250,000	\$ 4,750,000	\$ 5,004,000	\$ 5,150,000	\$ 5,200,000	\$ 5,356,000	\$ 5,517,000	\$ 5,883,000	\$ 6,060,000	\$ 6,218,000	\$ 6,405,000
3B. Water Distribution - Other	\$ 385,000	\$ 885,000	\$ 1,367,000	\$ 384,000	\$ 1,010,000	\$ 277,000	\$ 1,049,000	\$ 445,000	\$ 1,244,000	\$ 344,000	\$ 1,222,000	\$ 346,000
4. Water Treatment	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 448,000	\$ -	\$ -	\$ -	\$ -
5. Technology	\$ 265,500	\$ 1,117,700	\$ 792,500	\$ 492,000	\$ 465,000	\$ 494,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response	\$ 7,500	\$ 165,000	\$ 150,000	\$ -	\$ 185,000	\$ -	\$ -	\$ 155,000	\$ 128,000	\$ -	\$ -	\$ -
7. Facilities & Planning	\$ 110,000	\$ 275,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total	\$ 2,872,936	\$ 7,000,000	\$ 8,500,000	\$ 9,500,000	\$ 9,000,000	\$ 8,000,000	\$ 8,000,000	\$ 8,500,000	\$ 8,500,000	\$ 8,000,000	\$ 8,000,000	\$ 9,811,000

Long-term Capital Improvement Project Program Budget - PayGo Date: 02/21/2020			Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
1. Water Supply														
A. Groundwater Water Supply														
i. Well Rehabilitation														
	Well 16 Rehabilitation	\$ 130,800												
	Well 11 Rehabilitation	\$ -	\$ 75,000											
	Well 9 Rehabilitation													
	Well 14 Rehabilitation													
	Well Rehabilitation			\$ 95,000		\$ 105,000			\$ 100,000		\$ 100,000		\$ 100,000	
ii. New Wells														
iii. Groundwater Basin Recharge														
B. Imported Water Supply														
C. Recycled Water System														
i. Recycled Water														
ii. Membrane Bioreactor Technology (MBR)														
D. Water Supply Studies														
	Leasing Water Storage to FMWD	\$ 4,500												
WS Total		\$ 194,500	\$ 75,000	\$ 95,000	\$ -	\$ 105,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ 200,000	\$ 150,000	
2. Water Storage														
A. Reservoir Rehabilitation														
i. Steel Reservoir Re-Coating/Roof/Vents Rehabilitation														
	Markridge	\$ 453,300												
	Rosemont		\$ 480,000											
	Eagle Canyon			\$ 720,000										
	Edmund #2				\$ 500,000									
	Goss Canyon #1 & #2					\$ 500,000	\$ 550,000							
	Shields							\$ 550,000						
	Cresta Hts #1 & 2													
	Dunsmore								\$ 600,000					
	Pickens Canyon									\$ 650,000				
	Ordunio										\$ 850,000			
ii. Concrete Reservoir Rehabilitation														
	Encinal					\$ 100,000								
	Williams (Ocean View)								\$ 100,000					
B. Reservoir Water Quality														
i. Water Quality Mixing System														
C. Water Storage Studies														
WS Total		\$ 453,300	\$ 480,000	\$ 710,000	\$ 500,000	\$ 600,000	\$ 550,000	\$ 550,000	\$ 700,000	\$ 650,000	\$ 850,000	\$ -	\$ -	

Long-term Capital Improvement Project Program Budget - PayGo Date: 02/21/2020		Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
3. Water Distribution													
A. Pipeline Replacement													
3200 & 3300 Blocks of Brookhill - 1,485 LF		\$ 510,000											
4700 & 4800 Block of Pennsylvania - 800 LF		\$ 722,136											
Annual Pipeline Replacement - 2,700 LF			\$ 1,000,000										
Annual Pipeline Replacement				\$ 900,000	\$ 800,000	\$ 750,000	\$ 850,000	\$ 600,000	\$ 350,000	\$ 550,000	\$ 200,000	\$ 1,000,000	\$ 1,000,000
C. Booster Pump System													
i. Annual Pump /Motor Replacement													
Boosters - Glenwood 32 & 33		\$ 85,000											
Annual Booster Replacement - 1 Booster				\$ 45,000		\$ 45,000		\$ 50,000	\$ 50,000		\$ 50,000		\$ 50,000
ii. Pump Station Upgrade													
iii. MCC Replacement													
D. Pressure Reducing Stations													
PRS - Zone 2 to Zone 1		\$ 300,000											
E. Miscellaneous Projects													
i. Water Surge Control													
Rehabilitation Surge Tank at Glenwood					\$ 80,000								
Rehabilitation Surge Tank at Paschall Booster Station					\$ 85,000								
iii. Misc.													
Repairs to Ramsdell Mixing Station		\$ -	\$ 440,000										
Mills Plant - Aeration Tower Rehabilitation					\$ 75,000								
F. Water Distribution Studies													
WD Total		\$ 1,617,136	\$ 1,440,000	\$ 945,000	\$ 1,040,000	\$ 795,000	\$ 850,000	\$ 650,000	\$ 400,000	\$ 550,000	\$ 250,000	\$ 1,000,000	\$ 1,050,000
4. Water Treatment													
A. Nitrate Removal													
i. Glenwood													
iii. Ordunio													
C. Convert to Chloramines													
Conversion to Chloramination Disinfection		\$ 225,000											
D. Federal and State Regulations													
E. Water Quality Studies													
F. MTBE Removal													
WT Total		\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Long-term Capital Improvement Project Program Budget - PayGo Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
5. Technology												
A. Automated Meter Information (AMI) System												
AMI - Conversion of 3/4" to 4" Meters to Smart Meters	\$ 178,500											
B. Supervisory Control and Data Acquisition (SCADA) System												
Upgrade Communication Radio Network for SCADA		\$ 90,000	\$ 90,000									
SCADA RTU Replacement (35 sites) - Design	\$ 87,000											
SCADA RTU Replace - Equipment & Integration		\$ 260,000	\$ 260,000	\$ 260,000								
C. Graphical Information System (GIS)												
TECH Total	\$ 265,500	\$ 350,000	\$ 350,000	\$ 260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response												
A. Emergency Electrical Generators												
B. Water Storage												
Dunsmore/Pickens - Seismic Sensors & Valve Actuators	\$ 7,500											
C. Security												
D. Miscellaneous												
Local Hazard Mitigation Plan - FEMA Grant		\$ 165,000										
SF/ER Total	\$ 7,500	\$ 165,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning												
A. Main Office												
B. Glenwood Plant												
C. Mills Plant												
D. Reservoir Site Improvements												
Roof for Old Encinal - Storage Bldg		\$ 70,000										
Facilities Maintenance Master Plan				\$ 100,000								
5. Misc. Properties												
6. District Planning												
F & P Total	\$ -	\$ 70,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total	\$ 2,762,936	\$ 2,580,000	\$ 2,100,000	\$ 1,900,000	\$ 1,500,000	\$ 1,400,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000

Long-term Capital Improvement Project Program Budget - PayGo Date: 02/21/2020	Projected FY 19/20	Budget FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31
10-Year Capital Improvement Project Summary												
1. Water Supply	\$ 194,500	\$ 75,000	\$ 95,000	\$ -	\$ 105,000	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ 200,000	\$ 150,000
2. Water Storage	\$ 453,300	\$ 480,000	\$ 710,000	\$ 500,000	\$ 600,000	\$ 550,000	\$ 550,000	\$ 700,000	\$ 650,000	\$ 850,000	\$ -	\$ -
3A. Water Distribution - Pipeline	\$ 1,232,136	\$ 1,000,000	\$ 900,000	\$ 800,000	\$ 750,000	\$ 850,000	\$ 600,000	\$ 350,000	\$ 550,000	\$ 200,000	\$ 1,000,000	\$ 1,000,000
3B. Water Distribution - Other	\$ 385,000	\$ 440,000	\$ 45,000	\$ 240,000	\$ 45,000	\$ -	\$ 50,000	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000
4. Water Treatment	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5. Technology	\$ 265,500	\$ 350,000	\$ 350,000	\$ 260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response	\$ 7,500	\$ 165,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning	\$ -	\$ 70,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total	\$ 2,762,936	\$ 2,580,000	\$ 2,100,000	\$ 1,900,000	\$ 1,500,000	\$ 1,400,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
February 21, 2020

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: FY 19/20 Water and Wastewater Capital Improvement Project Program – Project Status

BACKGROUND:

The following table is a summary of the FY 19/20 Water CIP program including project status and budgeted cost estimates:

Capital Improvement Project Program Project Name	Budget FY 19/20	Project Status
Well Rehabilitation	\$190,000	Well 16 - Under Construction - 50% complete; Well 11 - Under Design
Reservoir Rehabilitation	\$435,000	Markridge Reservoir - Under Construction - 75% complete
Annual Pipeline Replacement	\$624,000	3200 & 3300 Blocks of Brookhill - Complete
	\$515,000	4700 & 4800 Blocks of Pennsylvania Ave - 95% complete
Annual Booster Pump Replacement	\$85,000	Booster 32 & 33 at Glenwood Plant - Advertising for Bids
Rehabilitation of Ramsdell/Mayfield Blending Station	\$300,000	Pressure Reducing Station - Zone 2 to Zone 1 - Under Design
Conversion to Chloramines	\$125,000	Installation of Ammonia Stations at Pickens - 90% complete & Well 2 - 70% complete
SCADA Replacement - Equipment & Integration	\$315,000	Replacement, programing, integration and testing of RTU/PLC equipment - Under Design
Advanced Metering Infrastructure (AMI) Program	\$178,500	Installation of Meters - Zones 1, 2 & 3 - Zone 3 - 40% complete; Zone 2 - 10%; Zone 1 moved to FY 20/21
District Facility Improvements	\$110,000	Williams Reservoir site improvements - Planning - 10% complete
Total	\$2,877,500	

Also attached is the FY 19/20 CIP Program – Cost update, which shows the costs from July to December 2019 and the amount remaining or committed to the project. At the present time, the FY 19/20 CIP is about \$105,000 below budget.

DISCUSSION:

The following is a status projects and project schedule for FY 19/20 Water CIP Program:

- Replacement of Pump and Motor Assembly for Glenwood Boosters 32 & 33, Project E-1013
 - o Project currently requesting quotes from pump contractors
 - o Award contract at 3/10/20 Board Meeting
 - o Installation to start – early April 2020
 - o Engineer’s Estimate - \$62,000
- Well 11 Rehabilitation – Project E-1015
 - o Design – 65% complete
 - o Request to advertise for bids at 3/24/20 Board Meeting
 - o Award of Contract at 4/14/20 Board Meeting
 - o Construction start – early May 2020
- Pressure Reducing Station for Zone 2 to Zone 1 located at intersection of Ramsdell & Mayfield
 - o Design – 75% complete
 - o Request to advertise for bids at 4/14/20 Board Meeting
 - o Award of Contract at 5/12/20 Board Meeting
 - o Construction start – early June 2020

- Conversion to Chloramines, Project E-995
 - o Glenwood & Mills Plant
 - Construction - 100% complete
 - Testing – Tentatively set for week of 3/16/20
 - o Chlorine Analyzers – six (6) sites
 - Installation – 100% complete
 - o Pickens Canyon Tunnel
 - Construction – 90% complete
 - Testing - Tentatively set for week of 3/16/20
 - o Well 2
 - Construction 80% complete
 - Testing - Tentatively set for week of 3/16/20
 - o Amended Permit – DDW
 - 80% Complete
 - Submittal - Tentatively set for week of 3/23/20
 - o Conversion to Chloramines
 - Testing - Tentatively set for week of 4/13/20; after review by DDW
 - Conversion - Tentatively set for week of 5/11/20

The following is a status projects and project schedule for FY 19/20 Wastewater CIP Program:

- New Emergency Electrical Generator at the La Granada Wastewater Lift Station, Project S-962 -
Permanent emergency electrical generator at the lift station with an automatic transfer switch as part of CVWD's continuing effort for emergency planning and prevention of sewer overflows
 - o Design – Request for additional profession services for Cannon – 2/24/20
 - Additional Services - \$52,000; \$75,000 estimated in budget
 - o Complete design and permitting issues with LCF - 3/6/20 to 5/20/20
 - o Public outreach and community meeting - 4/13/20 to 5/13/20
 - o Advertise for Bids - 5/26/20
 - o Award Contract - 6/23/20
 - o Construction - 9/28/20 to 11/6/20

PROJECT STATUS:

Staff will provide a project status update to the Board as part of the monthly Engineering/Operations report and provide additional details at the next Engineering Committee meeting.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Capital Improvement Project Program FY 19/20 CIP Program - Cost update Date: 02/21/20		Recorded FY 18/19	Budget FY 19/20	FY 19/20 Cost to date from 7/1/19 to 12/31/19	FY 19/20 Cost Committed from 1/1/20 to 6/30/20	Projected FY 19/20
1. Water Supply						
A. Groundwater						
i. Well Rehabilitation						
	Well 1 Rehabilitation	\$ 55,315				
	Well 7 Rehabilitation	\$ 90,739				
	Well 16 Rehabilitation					
	Well 11 Rehabilitation					
ii. New Wells						
	Re-Activate Well 2 - Construction	\$ 554,961				
B. Imported Water						
	Ocean View - Final	\$ 2,819				
D. Recycled Water System						
WS Total		\$ 701,015	\$ 190,000	\$ -	\$ 190,000	\$ 190,000
2. Water Storage						
A. Reservoir Rehabilitation						
i. Steel Reservoir Re-Coating/Roof/Vents Rehabilitation						
	Oak Creek #1 & #2	\$ 521,593				
	Markridge					
B. Reservoir Water Quality						
C. Studies						
WS Total		\$ 521,593	\$ 435,000	\$ 13,886	\$ 439,414	\$ 453,300
3. Water Distribution						
A. Pipeline Replacement						
	Lower Pickens Canyon Crossing & Slope - 600 LF	\$ 2,976				
	2700 Block - Brookhill - 800 LF	\$ 173,169				
	5100 Block of La Crescenta - 400 LF	\$ 77,628				
	3000 Block of Brookhill - 800 LF	\$ 157,569				
	3100 Block of Brookhill - 800 LF	\$ 154,594				
	3200 & 3300 Blocks of Brookhill - 1,485 LF		\$ 624,000	\$ 17,282	\$ 492,718	\$ 510,000
	4700 & 4800 Block of Pennsylvania - 800 LF		\$ 515,000	\$ 597,136	\$ 125,000	\$ 722,136
B. New Pipelines						
C. Booster Pump System						
i. Annual Pump /Motor Replacement						
	Boosters - Encinal B & C	\$ 28,773				
	Boosters - Glenwood 32 & 33		\$ 85,000	\$ -	\$ 62,500	\$ 62,500
D. Pressure Reducing Stations						
	PRS - Zone 2 to Zone 1		\$ 165,000	\$ -	\$ 165,000	\$ 165,000
E. Miscellaneous Projects						
ii. Street/Utility/ Meter Adjustment & Upgrade						
	Street Rehabilitation - Pennsylvania Ave	\$ 88,000				
iii. Misc.						
	Repairs to Ramsdell Mixing Station	\$ 2,869	\$ 135,000	\$ -	\$ 135,000	\$ 135,000
WD Total		\$ 685,579	\$ 1,524,000	\$ 614,418	\$ 980,218	\$ 1,594,636
4. Water Treatment						
A. Nitrate Removal						
C. Convert to Chloramines						
	Conversion to Chloramination Disinfection	\$ 982,690	\$ 125,000	\$ 83,950	\$ 141,050	\$ 225,000
D. Federal and State Regulations						
E. Water Quality Studies						
F. MTBE Removal						
WT Total		\$ 982,690	\$ 125,000	\$ 83,950	\$ 141,050	\$ 225,000

Capital Improvement Project Program FY 19/20 CIP Program - Cost update Date: 02/21/20		Recorded FY 18/19	Budget FY 19/20	<u>FY 19/20</u> Cost to date from 7/1/19 to 12/31/19	<u>FY 19/20</u> Cost Committed from 1/1/20 to 6/30/20	Projected FY 19/20
5. Technology						
A. Automated Meter Information (AMI) System						
AMI - Conversion of 3/4" to 4" Meters to Smart Meters			\$ 178,500	\$ -	\$ 97,000	\$ 97,000
AMI - Install & Integration of Fixed Area Network						
B. Supervisory Control and Data Acquisition (SCADA) System						
SCADA RTU Replacement (35 sites) - Design			\$ 315,000	\$ 4,238	\$ 90,762	\$ 95,000
C. Graphical Information System (GIS)						
TECH Total		\$ -	\$ 493,500	\$ 4,238	\$ 187,762	\$ 192,000
6. Public Safety/Emergency Response						
A. Emergency Electrical Generators						
B. Water Storage						
Dunsmore/Pickens - Seismic Sensors & Valve Actuators		\$ 5,000	\$ -	\$ 2,705	\$ 4,795	\$ 7,500
C. Security						
D. Miscellaneous						
Local Hazard Mitigation Plan - FEMA Grant						
SF/ER Total		\$ -	\$ -	\$ 2,705	\$ 4,795	\$ 7,500
7. Facilities & Planning						
A. Main Office						
B. Glenwood Plant						
C. Mills Plant						
D. Reservoir Site Improvements						
Williams Reservoir Site Improvements			\$ 110,000	\$ -	\$ 110,000	\$ 110,000
5. Misc. Properties						
6. District Planning						
F & P Total		\$ -	\$ 110,000	\$ -	\$ 110,000	\$ 110,000
Capital Improvement Projects - Total		\$ 2,890,877	\$ 2,877,500	\$ 719,197	\$ 2,053,239	\$ 2,772,436

FY 19/20 Capital Improvement Project Summary

1. Water Supply	\$ 701,015	\$ 190,000	\$ -	\$ 190,000	\$ 190,000
2. Water Storage	\$ 521,593	\$ 435,000	\$ 13,886	\$ 439,414	\$ 453,300
3. Water Distribution	\$ 685,579	\$ 1,524,000	\$ 614,418	\$ 980,218	\$ 1,594,636
4. Water Treatment	\$ 982,690	\$ 125,000	\$ 83,950	\$ 141,050	\$ 225,000
5. Technology	\$ -	\$ 493,500	\$ 4,238	\$ 187,762	\$ 192,000
6. Public Safety/Emergency Response	\$ -	\$ -	\$ 2,705	\$ 4,795	\$ 7,500
7. Facilities & Planning	\$ -	\$ 110,000	\$ -	\$ 110,000	\$ 110,000
Capital Improvement Projects - Total	\$ 2,890,877	\$ 2,877,500	\$ 719,197	\$ 2,053,239	\$ 2,772,436