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 22, 2019 at 9:00 AM

Posted February 21, 2019 at 9:00 AM

Call to Order

Adoption of Agenda

Information Items

1. Status of Groundwater Wells and Well Capacity
2. Discussion of FY 19/20 Capital Improvement Project Program
3. Discussion of Administrative Consultants for FY 19/20 Budget
4. Discussion of CVWD's Emergency Water Supply Connections with GWP and LADWP
5. Project Update
    - TTHM Study and Upgrades to Disinfection System, Project E-995
    - Oak Creek Reservoir Rehabilitation, Project E-970
    - Well 2 and Related Facilities, Project E-956
    - Automated Meter Infrastructure Program, Project E-998
    - Well Rehabilitation of Wells 1 & 7, Project E-999
    - Stormwater Capture Facilities at CVC Park, Project E-985

Public Comments

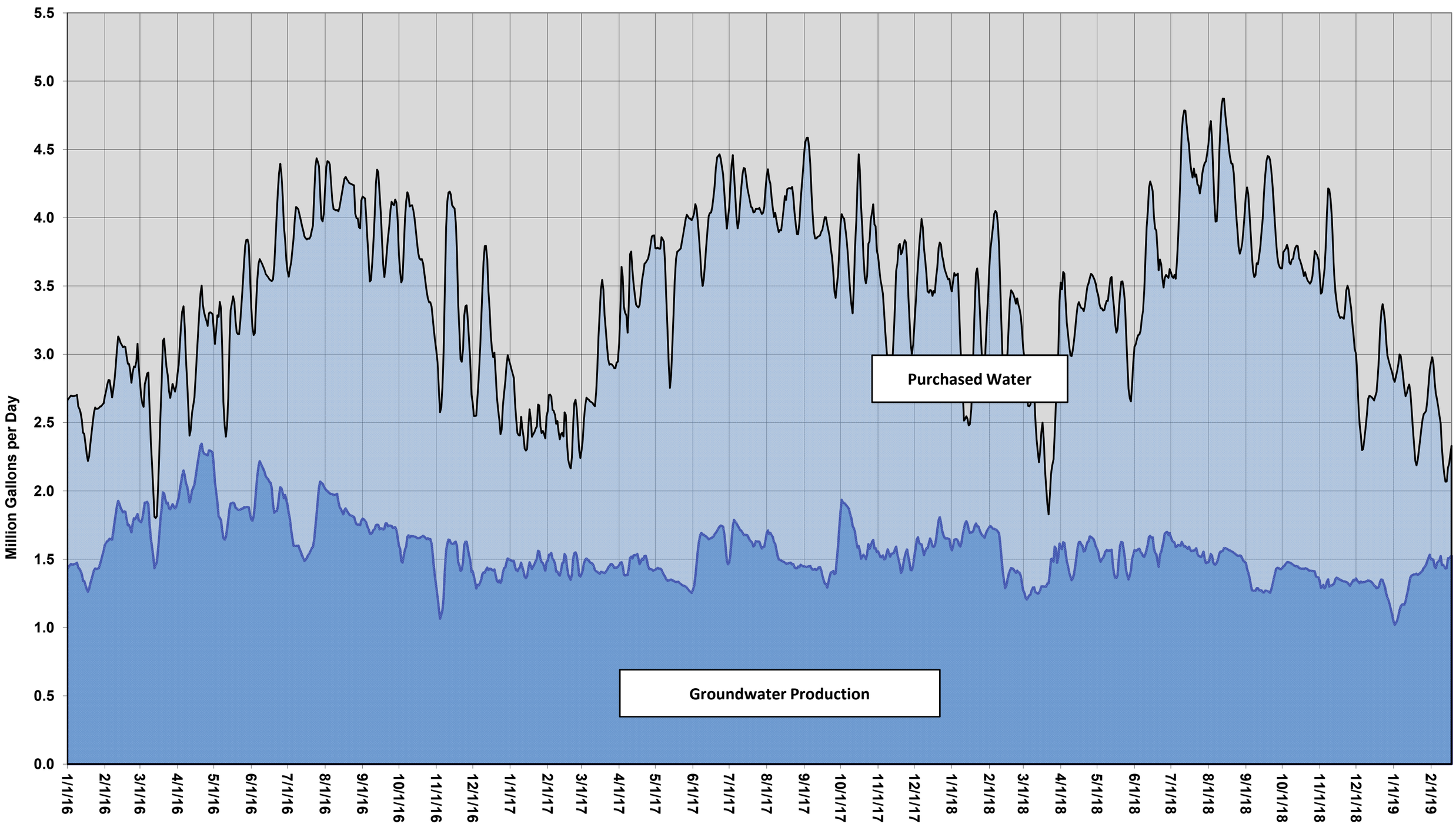
At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable and speakers are limited to three (3) minutes each.

Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – March 15, 2019

Adjournment

Water Production Chart 2016 - 2019



CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 2
February 22, 2019

To: Engineering Committee

From: David S. Gould, P.E. – District Engineer

Subject: **Preliminary FY 19/20 Capital Improvement Project Program**

Discussion of FY 19/20 Preliminary Capital Improvement Project Program - The preliminary FY 19/20 Capital Improvement Project (CIP) program includes the following goals, objectives and projects which are summarized below:

1. WATER SUPPLY

GOAL: Provide a sustainable water supply to meet existing and future water demands.

1. Groundwater Wells – Produce annual adjudicated rights of 3,294 ac-ft per water year
2. Imported Water – Utilize imported water to meet demands and to stay within FMWD's Tier 1 limits per calendar year
3. Groundwater Basin Recharge – Recharge the Verdugo Groundwater basin with other water sources such that it will increase the amount of groundwater water available in the basin and lessen the effects of fluctuating water levels during droughts or dry weather conditions
4. Recycled Water – Develop a plan to utilize recycled water for irrigation customers

Groundwater Wells:

OBJECTIVE: Groundwater Wells:

1. Maintain CVWD's existing groundwater wells through Well Rehabilitation
2. Install at least two (2) new wells or re-activate an existing well within the next 5 to 10 years to increase CVWD's ability to produce its adjudicated right in the Verdugo Basin and replace 70 year wells that are well beyond the end of their useful life

Objective No. 1 - Well Rehabilitation – Well rehabilitation projects include repairing or replacing pump and motors assemblies, cleaning or chemical treatment of well casings, installation of well liners, replacement of meters, valves or other appurtenances. The program has been ongoing since 1998 as shown on the summary table below.

CVWD - Well Rehabilitation Projects - 1998 - 2018

Well No.	Location	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
1	3246 Mills Ave						X										X					X	3
2	4029 Lowell Ave										X												1
5	3937 Pennsylvania		X					X										X			X		4
6	3730 Glenwood Ave	X						X															2
7	3117 Mills Ave			X					X													X	3
8	1425 Val Verde			X	X			X										X		X			5
9	3312 Honolulu							X			X		X					X					4
10	3730 Glenwood Ave				X						X					X					X		4
11	3812 Honolulu					X								X					X				3
12	3730 Glenwood Ave								X			X				X		X					4
14	2760 Sycamore	X		X			X	X				X			X	X							7
15	3730 Glenwood Ave				X					X													2
16	2740 Hermosa Ave																			X			1
17	3246 Mills Ave																						0
	Total	2	1	3	3	1	2	5	2	1	3	2	1	1	1	3	1	4	1	2	2	2	43

FY 19/20 - Rehabilitation of Well No 11 & 14 – The well efficiencies for Well 11 and Well 14 were tested at the end of 2018 and they were 24.6% and 32.1% respectfully. If the well efficiencies were increased through down-sizing pumps and well rehabilitation to about 56%, the District could see an electrical cost savings around $22,000 per year. Well rehabilitation projects typically include repairing or replacing the pump and motor assembly, cleaning or chemical treatment of well casing, replacement of meters, valves or other appurtenances.

Project Schedule: The project will be designed in-house using previous bid specification and should be completed by the end of September 2019.

The project will be advertised for bids in October 2019 and award a contract in November 2019. Construction will begin in January 2020, during the low winter demand and completed by the end of May 2020.

Cost Estimate: - Staff's engineer's cost estimate is based on previous bids provided in 2017 and 2018. As shown in the table below, the cost estimate is $95,000 per Well.

Project Payback: Staff anticipates that Well 11 could see a 50% increase in production from 65 gpm to 100 gpm and Well 14 could see a 50% increase in production from 70 gpm to 105 gpm. Well 11 & 14 are projected to produce an additional 9.3 ac-ft per month. There is an approximate cost difference of $700/ac-ft between import and local water production. CVWD would see a monthly cost savings of $6,505, not including efficiency gains of the pump and motor assembly. The payback period for this work is estimated to be about 24 months.

Well 11 & 14 - Engineer's Cost Estimate

Bid Item	Description	Quantity		Unit Cost	Amount
1	Mobilization and Demobilization	1	LS	$15,000	$15,000
2	Remove Existing Pump Assembly, Line Shaft and Column Pipe	2	LS	$4,500	$9,000
3	Wire Brush Casing and Airlift/Bail Sediment	48	Hr	$320	$15,360
4	Chemical Treatment Using Acids and Dispersants	2	LS	$19,000	$38,000
5	Mechanical Development	24	Hr	$450	$10,800
6	New Pump & Motor Assembly	2	LS	$19,500	$39,000
7	Column Piping, Line Shaft and Chemical Feed Tube	400	LF	$45	$18,000
8	Start-up and Testing	2	LS	$3,420	$6,840
	Subtotal				$152,000
	Contingency	20%			$30,400
	Video Inspection & Engineering/Inspection Labor				$7,600
	Total				$190,000
	Engineer's Cost Estimate per Well				$95,000

Objective No. 2 – New Groundwater Wells –Installation of new groundwater wells to increase CVWD's well capacity and its ability to extract its groundwater adjusted rights on an annual basis.

1. **Well 18 at 2815 Sycamore Ave.** – CVWD purchased the property in 2011, which is located north the of the Glenwood Operations facility with the intention of drilling a new groundwater well to replace Well 10. The current 5-year CIP budget calls for the design of the project starting in FY 23/24 and construction in FY 24/25 with a preliminary cost of $2,000,000.
2. **Update Water Well Replacement Study** – Staff is proposing to update the 1999 Water Well Replacement Study with new data from the 2004 Geophysical Study and new monitoring wells that will be inputted into the Verdugo Basin Groundwater Model. The updated model and study will be utilized to determine optimal locations of future well sites and transmission pipeline that will replace the older

existing groundwater wells. The current 10-year CIP budget shows this study in FY 22/23 with a preliminary cost of $150,000.

3. **Pilot Hole Study** - This involves drilling 4-inch diameter pilot holes in areas near the proposed new locations to determine the geological profile, water quality and well capacity parameters of the site. It is anticipated that five (5) pilot holes will be drilled. This is typically performed at a lower cost to determine if the site is feasible for a water production well before proceeding with drilling a new well with the accompany facilities. The Pilot Hole study will start in FY 23/24 with a preliminary cost of $250,000.

Groundwater Basin Recharge:

Objection No. 1 – Recharge the Verdugo Groundwater basin with other water sources

1. **Crescenta Valley County Park Storm Water Recharge Facility** – Staff completed the Crescenta Valley County Park (CVC Park) Stormwater Recharge Project Facility Feasibility Study (Study) in March 2017, which provided important groundwater flow data and geologic information. This study concluded that portions of CVC Park can be utilized for stormwater capture for groundwater recharge to reduce fluctuation in groundwater levels during dry and wet rainfall years. Use of stormwater runoff for groundwater recharge will also help improve groundwater quality, increase water-supply reliability and improve surface water quality in downstream receiving waters.

   The following is a summary of project tasks over the next three to 12 months:

   Conceptual Plan & Cost Estimate: Staff and its consultants (Wood Environmental and John Robinson Consulting) will be working on a preliminary conceptual plan to locate the infiltration galleries within CVC Park, creating a "Green" street on Dunsmore Ave, south of Honolulu, add a native landscaping garden, and possible upgrades to CVC Park. The "Green" Street concept could include swales with native landscaping and under drains to direct stormwater flow into the ground.

   Included with the conceptual plan, consultants will prepare a preliminary construction cost estimate including a benefit/cost analysis for review and discussion at the April 2019 Engineering Committee.

   Presentation to Board of Directors: Staff and its consultants will make a presentation to the Board of Directors to discuss the project, the preliminary conceptual plan and preliminary construction cost estimate for review.

   Staff is planning to complete the conceptual plan, cost estimate and presentation to the Board by the beginning of July 2019. Staff's goal will be to get Board acceptance of the project before proceeding with the next set of planning tasks. The work effort describe below will be completed within FY 19/20 and will used to determine if the District wants to proceed with the project.

   Planning Tasks: The following tasks will be performed concurrently as to determine if there are any "road blocks" to the project. Staff will report at future Board meetings on the status of the project.

   1. Meeting with Stakeholders: Consultants will be meeting with stakeholders such as City of Glendale, Los Angeles County Department of Parks and Recreation (LACDPW) Los Angeles County Department of Public Works (LACDPR), Crescenta Valley Town Council and non-government organization such as Tree People, Arroyo Seco Foundation, and Council for Watershed Health to get input on the preliminary conceptual plan and discuss the possibility of providing funding for the project.
   2. City of Los Angeles – Stormwater Rights: The ULARA Judgement states that the City of Los Angeles owns the "Pueblo" or stormwater rights within the ULARA watershed. Staff and its consultants will meet and confer with LADWP about the stormwater rights and work on an agreement to utilize these rights within the Verdugo Basin.
   3. Permit from State Water Resources Control Board, Division of Water Rights: Consultants will meet with the SWRCB, Division of Water Rights to determine the water rights permitting and licensing requirements. Initial discussion with legal counsel and SWRCB indicate that this process could take up to 2-years to complete the permitting and licensing.

- *Permitting* is the process of filing an application to request that the SWRCB authorize the development of a water diversion project by issuing a permit. A permit provides the legal authorization to develop the project and divert water in accordance with conditions and within a time schedule.
- *Licensing* is the process of reviewing a permitted project that is complete to confirm the amount of water put to beneficial use and that the permit conditions were met. A license is the final confirmation of the water right and remains effective as long as its conditions are met and beneficial use continues.

4. Grant Funding: Consultants will be looking into getting grant funding under Proposition 1, Integrated Regional Water Management (IRWM) Grant program, Los Angeles County Measure W and other state and federal grants available for the project. Consultant will summarize the grants available and the time-frame for funding available, application submittal and award of grants.
5. CEQA Process: The project and grant requirements will necessitate the need for the District to go through the CEQA process from the initial environmental study to determine the type of CEQA documentation will be need. Staff will need the assistance of a consultant to determine the limits of the CEQA work and the involvement of LACDPW and LACDPR.

Project Schedule: The conceptual plan and preliminary cost estimate will be completed in July 2019 for approval by the Board before proceeding to the next planning tasks.

Staff is planning as part of the FY 19/20 CIP program to include time and funding for consultants to proceed with the planning elements described above over the next 12-months. As staff reports on each element to the Board, it will give the Board the opportunity to re-adjust the project schedule or to determine the project's feasibility.

Cost Estimate: - Staff's cost estimate for consulting services is based on previous experience. In addition, the cost for legal services is included as this is outside their normal scope service to the District. As shown in the table below, the anticipated cost is $185,000 for FY 19/20.

Task No.	Task	CVWD Staff	John Robinson Consulting	Wood Environment & Infrastructure Solutions	Lagerlof, Senecal, Gosney & Kruse	CEQA Consultant	Total
1	Meeting with Stakeholders:	$2,500	$4,500	$15,000			$22,000
2	City of Los Angeles – Stormwater Rights	$4,000	$3,000	$10,000	$10,000		$27,000
3	Permit from State Water Resources Control Board, Division of Water Rights	$3,000	$8,000	$10,000	$5,000		$26,000
4	Grant Funding:	$4,000	$15,000	$10,000	$1,500		$30,500
5	CEQA Process:	$1,500	$5,000	$5,000	$1,000	$67,000	$79,500
	Total	$15,000	$35,500	$50,000	$17,500	$67,000	$185,000

2. **Water Storage:**

Goal: Provide a water storage system to meet average, high or peak demands, emergency water storage, and water quality parameters.

1. Reservoir Rehabilitation - maintain or improve conditions of the existing steel or concrete reservoirs to sustain the longevity of the water storage system.
2. Reservoir Water Quality - maintain or improve the water quality within the water storage system.

Objective No. 1 - Reservoir Rehabilitation:

1. Removal and replacement of interior and exterior coatings for steel reservoirs
2. Re-conditioning and rehabilitation of concrete reservoirs
3. Maintain corrosion protection system for steel reservoirs
4. Modification to reservoirs to maintain air circulation and reduce corrosion

Steel Reservoir Rehabilitation at Markridge Reservoir - The District has a 0.5 MG steel tank at the Markridge Reservoir site built in 1961. The Markridge Reservoir was re-coated and seismic structural upgrades in 2001. In 2005, the reservoir was inspected and the report indicated general corrosion on the roof and rafters. The reservoir was re-coated in 2007 and additional air vents were added to the roof. In 2015, the reservoir was inspected and the report stated that there was increased corrosion on the roof and rafters above the water line.

The 2015 inspection report showed that the underside of the roof and structural elements are in poor condition. It was recommended to sand blast, remove the coating and corrosion, and re-coat the interior roof and shell. In addition, any structural members damaged by the corrosion should also be replaced and additional roof fans will be installed.

Project Schedule: - Project design will commence in July 2019 and the project will be advertised for bid in October 2019. The contract will be awarded in November 2019 and construction will start in January 2020 during the winter low demand season.

Cost Estimate: - Staff's engineer's cost estimate is based on previous bids provided in 2018 and as shown in the table below, the cost estimate is $475,000.

Markridge			Engineers Estimate	
Description	**Quantity**		**Unit**	**Amount**
Interior Coating: Prepare surfaces and coat interior with epoxy coatings	1	LS	$150,000	$150,000
Disinfection: Prepare surfaces and disinfect interior.	1	LS	$3,000	$3,000
Exterior Painting: Prepare and paint designated exterior surfaces with and epoxy/urethane paint	1	LS	$20,000	$20,000
Interior Caulking: Caulk all designated voids on the interior surfaces	1	LS	$5,000	$5,000
Auxiliary Vent Screen: Remove existing vent screen and install new stainless steel screen	1	LS	$2,000	$2,000
Center Vent : Remove the existing center vent and install a new 48" center vent	1	LS	$8,000	$8,000
Roof Hatch: Remove the existing roof hatch and install a new 36"x36" hatch with hinged aluminum cover	1	LS	$4,500	$4,500
Auxiliary Vents: Furnish and install three (3) new 24" auxiliary vents and modify the existing auxiliary vent for installation of the fan and solar panel	1	LS	$15,000	$15,000
Vent Fans: Furnish and install vent fans, solar panels, conduit, junction box and wiring	1	LS	$10,000	$10,000
Fall Restraint System: Install fall restraint stainless steel cables, attachments, and mounting hardware	1	LS	$3,000	$3,000
Stairway: Remove the existing exterior ladder and cage and furnish and install a new spiral stairway	1	LS	$17,500	$17,500
Cathodic Protection: Remove and dispose of the existing system and install a galvanic cathodic protection system	1	LS	$17,000	$17,000
Dehumidification: Dehumidification system for interior work	7	Wks	$2,500	$17,500
Pit/Perforation Treatment: Fill pits or weld plates over pitted or corroded areas	16	Hrs	$300	$4,800
Grinding: Grind smooth sharp edges of the rafter and girder flanges	16	Hrs	$500	$8,000
Inspection Spot Blasting: Abrasively blast clean severely corroded surfaces	8	Hrs	$300	$2,400
Cathodic Protection: Remove the existing system and reinstall the system with new hand hole covers.	1	LS	$10,000	$10,000
Misc	1	LS	$2,300	$2,300
Subtotal				$300,000
Contingency	20%			$60,000
Total Construction Estimate				$360,000
Design/Inspection - HAEI; CVWD Inspection labor	1	LS	$115,000	$115,000
Total Cost Estimate for Project				$475,000

Objective No. 2 - Reservoir Water Quality:

1. Maintain or improve the water quality such as reducing Total Trihalomethanes's (TTHM) and maintaining proper water mixing to eliminate stagnate water.
2. Replace common inlet/outlet piping that will improved water flow in and out of the reservoir, and to prevent future nitrification.

Installation of Potable Water Circulation System: Staff is completing the conversion of the disinfection system from free chlorine to chloramines by the end of FY 18/19. This involved the installation of a new ammonia injection system to create chloramines which will reduce the TTHM levels in the District's reservoirs and water distribution system. Staff is concerned about the possibility of nitrification in a reservoir, which may require discharging water for a reservoir. One method to prevent nitrification is to install a water mixing system inside each reservoir to maintain chloramines over time. Staff discussed this with its consultants and researched various types of equipment on the market. Staff met with the Medora Corporation about their GridBee Potable Water Circulation Equipment, which will circulate water inside a reservoir with minimal installation. The equipment also includes the ability to connect chlorine and ammonia feeds line to increase the levels in case of nitrification. The majority of the work could be completed by field staff; however, there will still need to be consultant work to tie the system into the SCADA monitoring system.

Project Schedule: - Project design will commence in early fall 2019 as staff observes the conversion to chloramines and nitrification concerns. Equipment would be ordered in October 2019 and staff will start installation in early 2020 at critical locations and the remainder of the system should be completed in FY 20/21.

Cost Estimate: - Staff's engineer's cost estimate is based on bid provided by Medora Corporation, estimate of staff time and consulting services for SCADA upgrades as shown in the table below:

FY 19/20				
Equipment	**Quantity**		**Cost/Unit**	**Cost**
GS-9-120v Submersible Electric Mixer:	4	EA	$6,880.00	$27,520
GS-12-120v Submersible Electric Mixer:	2	EA	$9,580.00	$19,160
GS Series Control Box with SCADA Monitoring:	6	EA	$1,090.00	$6,540
Portable Disinfectant Boost System	2	EA	$8,720.00	$17,440
Subtotal				$70,660
Tax			9.5%	$6,713
Delivery				$1,140
Subtotal - Equipment				**$78,513**
Installation				
Installation - Each Site - Power; Conduit & Misc	6	EA	$5,000.00	$30,000
Labor	6	EA	$2,500.00	$15,000
Misc	1	EA	$6,487.00	$6,487
Subtotal - Installation				**$51,487**
SCADA Programing & Integration	1	LS	$35,000.00	$35,000
Subtotal				**$130,000**
Contingency			**10.0%**	**$13,000**
Total				**$143,000**

FY 20/21				
Equipment	**Quantity**		**Cost/Unit**	**Cost**
GS-9-120v Submersible Electric Mixer:	4	EA	$6,880.00	$27,520
GS-12-120v Submersible Electric Mixer:	3	EA	$9,580.00	$28,740
GS Series Control Box with SCADA Monitoring:	7	EA	$1,090.00	$7,630
Portable Disinfectant Boost System	0	EA	$8,720.00	$0
Subtotal				$63,890
Tax			9.5%	$6,070
Delivery				$1,140
Subtotal - Equipment				**$71,100**
Installation				
Installation - Each Site - Power; Conduit & Misc	7	EA	$5,000.00	$35,000
Labor	7	EA	$2,500.00	$17,500
Misc	1	EA	$6,400.00	$6,400
Subtotal - Installation				**$58,900**
SCADA Programing & Integration	1	LS	$15,000.00	$15,000
Subtotal				**$130,000**
Contingency			**10.0%**	**$13,000**
Total				**$143,000**

3. Water Distribution:

Goal: Provide for the ability to move water within the distribution system to meet existing and future water demands, fire flow requirements, and emergency conditions.

1. Pipeline Replacement – To replace existing older water pipelines based on age, size and number of leaks to meet existing or future water demands and have reached the end of their useful life.
2. New Pipelines – install new water pipelines to meet future water demands, fire flow requirements, and conductivity between pressure zones, water quality, and recommendations from the Water Master Plan.
3. Booster Pump System – maintain, replace, or upgrade the 34 booster pumps to meet customer water demands, maximize "water to wire" efficiency and controlling electrical power usage.
4. Motor Control Center Replacement – Replace and upgrade existing electrical motor control centers with standardized Allen-Bradley equipment and SCADA monitoring and controls.
5. Pressure Reducing Stations – install pressure reducing valve (PRV) stations between pressure zones to allow for the movement of water in an emergency from higher pressure zones to lower pressures zones.
6. Water Surge Control – Analysis and installation of water surge control system to prevent cavitation and pump damage during a water surge event.
7. Miscellaneous Projects – Replacement and/or repairs to existing water distribution system structures and control systems.

Objective No. 1 - Pipeline Replacement:

1. Replacement of existing older water pipelines based on age, size and number of leaks to meet existing or future water demands and have reached the end of their useful life.
2. Replacement of existing pipelines with yoke assembly water services as part of the water meter replacement project.

Pipeline Replacement – As shown in the table below, 49% of the District's pipelines are over 50 years old and should be replaced within the next 5 – 10 years. The table also shows the breakdown by pipe size, pipe material and number of leaks on a section of pipeline. Staff utilizes this information to determine the next pipelines to replace during the next fiscal year.

Crescenta Valley Water District

Pipeline - Breakdown by Category - 2018

Year	2018		Cost/LF	$450
Pipe Age	Pipe Length	Pipe (miles)	Percent	Cost Estimate
> 50 years	247,730	46.9	48.9%	$111,478,500
40-49 years	73,280	13.9	14.5%	$32,976,000
30-39 years	37,760	7.2	7.4%	$16,992,000
20-29 years	54,230	10.3	10.7%	$24,403,500
15-19 years	40,970	7.8	8.1%	$18,436,500
10-14 years	34,970	6.6	6.9%	$15,736,500
< 9 years	18,030	3.4	3.6%	$8,113,500
	506,970	96.0	100.0%	$228,136,500

Pipe Size (inch)	Pipe Length	Pipe (miles)	Percent	Cost Estimate
2	2,700	0.5	0.5%	$1,215,000
3	1,200	0.2	0.2%	$540,000
4	16,970	3.2	3.3%	$7,636,500
5	1,740	0.3	0.3%	$783,000
6	149,520	28.3	29.5%	$67,284,000
8	185,080	35.1	36.5%	$83,286,000
10	23,960	4.5	4.7%	$10,782,000
12	101,970	19.3	20.1%	$45,886,500
14	6,120	1.2	1.2%	$2,754,000
16	17,710	3.4	3.5%	$7,969,500
	506,970	96.0	100.0%	$228,136,500

Pipe Material	Pipe Length	Pipe (miles)	Percent	Cost Estimate
AC	0	0.0	0.0%	$0
PE	270	0.1	0.1%	$121,500
GALV	0	0.0	0.0%	$0
CI	500	0.1	0.1%	$225,000
SS	1,980	0.4	0.4%	$891,000
OD	9,040	1.7	1.8%	$4,068,000
STD	55,970	10.6	11.0%	$25,186,500
CML&CMC	98,030	18.6	19.3%	$44,113,500
CL&W	341,180	64.6	67.3%	$153,531,000
	506,970	96.0	100.0%	$228,136,500

No of Leaks	Pipe Length	Pipe (miles)	Percent	Cost Estimate
> 7	740	0.1	0.1%	$333,000
6	310	0.1	0.1%	$139,500
5	820	0.2	0.2%	$369,000
4	3,990	0.8	0.8%	$1,795,500
3	5,640	1.1	1.1%	$2,538,000
2	10,140	1.9	2.0%	$4,563,000
1	35,750	6.8	7.1%	$16,087,500
0	449,580	85.1	88.7%	$202,311,000
	506,970	96.0	100.0%	$228,136,500

Staff also assessed the need to replace the older pipelines (50 years or older) in a timely and cost effective manner. As shown in the table below, CVWD would have to replace about 5 miles of pipe each year to replace the entire amount of older pipes within 10 years at a cost of $11.2M per year. Staff understands that this is not attainable with budget limitation.

Typically, staff has recommended replacing about 2,700 liner feet of pipe each year and at this rate, it will take about 94 years to replace the older pipelines.

Crescenta Valley Water District

Pipeline Replacement - No. of Years to Replace

Pipelines - 50 years or older				Pipelines - 40 - 49 years or older			
Miles	46.9		$111,478,500	Miles	13.9		$32,976,000
Cost per Mile	$450		$2,376,000	Cost per Mile	$450		$2,376,000
Years to Replace	**Miles/Year**	**LF/Yr**	**Cost**	**Years to Replace**	**Miles/Year**	**LF/Yr**	**Cost**
5	9.4	49,546	$22,295,700	5	2.8	14,656	$6,595,200
10	4.7	24,773	$11,147,850	10	1.4	7,328	$3,297,600
15	3.1	16,515	$7,431,900	15	0.9	4,885	$2,198,400
20	2.3	12,387	$5,573,925	20	0.7	3,664	$1,648,800
25	1.9	9,909	$4,459,140	25	0.6	2,931	$1,319,040
30	1.6	8,258	$3,715,950	30	0.5	2,443	$1,099,200
35	1.3	7,078	$3,185,100	35	0.4	2,094	$942,171
40	1.2	6,193	$2,786,963	40	0.3	1,832	$824,400
45	1.0	5,505	$2,477,300	45	0.3	1,628	$732,800
50	0.9	4,955	$2,229,570	50	0.3	1,466	$659,520
94	0.50	2,640	$1,188,000	28	0.50	2,640	$1,188,000
223	0.21	1,111	$500,000	66	0.21	1,111	$500,000

Pipeline Replacement Recommendation for FY 19/20:

1. 3200 & 3300 Blocks of Brookhill Ave: Staff has been working on replacement of the old 4-inch water main on Brookhill Avenue over the past year including the 2700 Block & the 3000 – 3100 Blocks of Brookhill. The 3200 & 3300 Blocks are within the City of Glendale and are the last pipelines in the area that need to be upgraded. In addition, these pipelines have developed 7 leaks within the last 2-years and the pipeline is located in the resident's front yard.

2. 2400 & 2500 Blocks of Janet Lee: This is an existing 6-inch pipeline that was installed in 1951 with yoke assembly water service laterals. As part of the water meter replacement program, the 34 water meters could not be replaced because of the yoke assemblies. Staff is including this pipeline are part of the replacement program to also replace the water meters.

CVWD - Pipeline Replacement

FY 19/20 - Engineer's Cost Estimate

ITEM	DESCRIPTION	QUANTITY		UNIT	AMOUNT
1	Excavation and Backfill	4,135	LF	$85	$351,475
2	Resurfacing Trench	12,480	SF	$10.00	$124,800
3	8" CML & CMC Steel Pipe	2,785	LF	$65	$181,025
4	6" Fire Hydrant Assembly	8	EA	$3,000	$24,000
5	1-inch Water Services	72	EA	$1,500	$108,000
6	Traffic Control	1	LS	$10,700	$10,700
7	Replace Valve	1	EA	$2,000	
	Subtotal				$800,000
	Contingency	10.0%			$80,000
	Total Construction				$880,000
	Total Materials				$140,000
	Soils Eng				$6,500
	Engineering/Permits				$88,500
	Contractor Cost/LF	**2,785**	**LF**	**$315.98**	**$880,000**
	Total Cost/LF	**2,785**	**LF**	**$400.36**	**$1,115,000**

Project Schedule: - Design should be completed by October 2019 and advertising for bids in November 2019. The contract will be awarded in December 2019 and construction will start in late January 2020.

Cost Estimate: - The following engineer's cost estimate shown below is based on previous bids from 2017 and 2018 and staff's experience with pipeline contractors.

Objective No. 3 - Booster Pump System:

1. Maintain, replace, or upgrade the 34 booster pumps to:
   a. Meet customer water demands
   b. Maximize "water to wire" efficiency
   c. Controlling electrical power usage

Annual Booster Pump Replacement – Staff plan is to replace two booster pumps and motors per year as part of the annual budget. For FY 19/20, Boosters 32 & 33 located at the Glenwood Plant is planned for replacement. Booster 32 & 32 are 800 gpm pumps, which were last placed in 2003, the pumps have been running basically 24 hours/7days a week for the last 7 years and they are beyond there useful life. These boosters are the main booster to pump groundwater into the system and if the pumps failed, we would not be able to use the wells at the Glenwood plant.

Project Schedule: Design should be completed by November 2019 and advertising for bids in December 2019. The contract will be awarded in January 2020 and construction will start in late February 2020.

Cost Estimate: - The following engineer's cost estimate shown below is based on previous bids from 2017 and 2018 and staff's experience with booster pump contractors.

CVWD - Booster Pump Replacement

FY 19/20 - Engineer's Cost Estimate

Item	Decription	Quantity		Unit	Amount
1	Mobilization and Demobilization	1	LS	$1,500.00	$1,500.00
2	Remove Existing Pump and Motor Assembly	2	LS	$4,500.00	$9,000.00
3	New Vertical Turbine Pump	2	LS	$12,000.00	$24,000.00
4	New Vertical Turbine Motor	2	LS	$6,500.00	$13,000.00
5	Discharge Head, Column Pipe and Additional Equipment	2	LF	$2,000.00	$4,000.00
6	Field Balancing, Start-up and Testing	2	LS	$1,000.00	$2,000.00
	Subtotal				$53,500
	Contingency	10%			$5,350
	Total Construction				$58,850
	Total Materials				$2,750
	Engineering/Inspection - Labor				$13,400
	Total Construction Costs				**$75,000**

Objective No. 6: Water Surge Control:

1. Analysis and installation of water surge control system to prevent cavitation and pump damage during a water surge event
2. Repair/replacement of existing water surge tanks

Rehabilitation Surge Tanks at Glenwood - CVWD has an existing surge tank for three (3) booster pumps located at the Glenwood Plant. The purpose of the surge tank is to defuse a water surge wave during an outage event and protect the booster pumps. The surge tank was installed in 1955 and needs to be rehabilitated with an air-surge system. Staff has been working with GEI Consultants on the design of this project. The recommendations included resizing the piping and replacing the surge tank equipment.

Project Schedule: - Prepare plans and specifications by October 2019, advertise for bids in November 2019, award contract in December 2019, and construction beginning in February 2020.

Cost Estimate: - $75,000 for construction.

Objective No. 7: Miscellaneous Projects:

1. Replacement and/or repairs to existing water distribution system structures and control systems

Repairs to Ramsdell-Mayfield Mixing Station: The piping, meters and pressure flow valves inside the vault have been detreating over the last 5-years and reduced the crews' ability to maintain the equipment. However, the original design did not include an isolation valve for Zone 1 and it cannot be shut down without taking Zone 1 out of service.

CVWD installed a pressure reducing valve station to allow water from to flow from Zone 2 to Zone 1 on Montrose Avenue. A second pressure reducing valve station needs to be installed adjacent to the mixing station to allow proper flow into Zone 1. The FY 19/20 project will be the installation of the second pressure reducing valve station and isolation valve. In FY 20/21, the equipment and piping will be replaced inside the vault.

Project Schedule: - Prepare plans and specifications by December 2019, advertise for bids in January 2020, award contract in February 2019, and construction beginning in April 2020.

Cost Estimate: - $165,000 for construction.

CVWD - New PRV - Zone 2 to Zone 1					
FY 19/20 - Engineer's Cost Estimate					
1	Excavation and Backfill (pipeline, laterals & appurtenances)	375	LF	$80.00	$30,000
2	Resurfacing Trench	1,125	SF	$10.00	$11,250
3	Install 8" CML & CMC Steel Water Pipeline and appurtenant Construction	200	LF	$90.00	$18,000
4	Install New 8" Pressure Reducing Station, 6'x12'x6' Vault and appurtenant construction	1	LS	$50,750.00	$50,750
5	Provide traffic control for the Project	1	LS	$12,500.00	$12,500
	Subtotal				$122,500
	Contingency	10%			$12,250
	Total Construction				$134,750
	Total Materials				$23,000
	Engineering/Inspection - Labor				$7,250
	Total Construction Costs				**$165,000**

4. Water Quality and Treatment:

Goal: Provide high quality water by improving existing treatment processes or installing new water treatment systems to meet Federal and State water quality standards.

1. Nitrate Removal - provide nitrate removal treatment for all groundwater wells to maintain a maximum 35 mg/L nitrate level throughout the water distribution system.
2. Chlorine Disinfection - provide for chlorine disinfection treatment to maintain minimum 1.0 mg/L chlorine residual throughout the water distribution system.
3. New Federal and State Regulations - comply with all new United States Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) water quality regulations.
4. Water Quality Studies - perform studies to improve water quality and/or as required by USEPA/CDPH.
5. MTBE Removal - provide MTBE removal treatment for groundwater wells

No projects are planned for FY 19/20

5. Technology:

Goal: Ability to utilize advancements in technology to maximum efficiency for CVWD.

1. Advanced Meter Information (AMI) system - install an AMI system to increase efficiencies, outage detection, tamper notification and reduce labor costs.
2. Supervisory Control and Data Acquisition (SCADA) System - upgrade the existing SCADA/Telemetry system to maximum newer technology and increase effectiveness
3. Graphical Information System (GIS) - implement a GIS to integrate with asset tagging, customer service and operations

Objective No. 1 - Advanced Meter Information (AMI) system:

1. Replacement of residential meters with Iperl "Smart Meter" with radio transceivers.
2. Installation of an AMI collection system to transmit the meter data to the internet
3. Installation of a meter data management system (MDMS) to provide information to customers and to utilize data information for short-term and long-term goals

Advanced Metering Information System: Staff has been working with UtiliWorks on an AMI business case report to determine the planning, implementation and financial elements for full implementation of an AMI program. CVWD has replaced over 5,000 residential meters since 2012 with smart meters in anticipation of an AMI program. UtiliWorks will be making a presentation to the Board of Directors in April 2019 to discuss the business case to implement the program. Staff utilized this information and preliminary cost estimates for FY 19/20 budget preparation. It has been discussed that the AMI program will be completed over a 3-year fiscal budget with the first year planning, and installation of the meters and radio transceivers, second year the AMI collection system and starting on the MDMS system and the third year will be implementation of the MDMS system, training and field testing.

Project Schedule: - To be determined after April 2019 Board Meeting.

Cost Estimate: - $180,000 for FY 19/20.

AMI - Preliminary Cost Estimate	
Fiscal Year	Cost Estimate
FY 19/20	$325,000
FY 20/21	$1,500,000
FY 21/22	$1,500,000
Total	**$3,325,000**

Objective No. 2 - Supervisory Control and Data Acquisition (SCADA) System:

1. Upgrade the existing SCADA/Telemetry hardware system to maximum newer technology and increase effectiveness
2. Upgrade the existing SCADA/Telemetry software interface system to maximum newer technology and increase effectiveness

SCADA RTU Replace - Equipment & Integration: Staff embarked on a project to upgrade District's SCADA system in 2016 with improvements and upgrades to the system software platforms to a newer version of Wonderware software and integration into the existing. The majority of this work was completed in 2018. The next step will be the upgrade and replacement of the existing Remote Terminal Units (RTUs) to modern equipment that utilize a common programing language and processes. The existing SCADA hardware system was install in 1996 with proprietarily equipment and programing. This will be a 2-year program to design and install the new equipment and utilizing a consultant for programing and integration.

Project Schedule: - Prepare plans and specifications by January 2020; advertise for bids in February 2020, award contract in April 2020, and installation beginning in June 2020. Staff anticipates this program to be completed over 2-years.

Cost Estimate: - $300,000 for FY 19/20 & $300,000 for FY 20/21.

6. Public Safety/Emergency Response:

Goal: Ability to meet customer water demands during local emergencies or natural disasters.

1. Emergency Electrical Generators - provide portable emergency electrical generators at strategic locations within the District to ensure CVWD can meet water demands during a local emergency or natural disaster when electrical power has been disrupted
2. Water Storage – install seismic sensors and valve actuators on all District reservoirs to prevent loss of water in case of an earthquake event from a break in the downstream piping
3. Security - install security cameras at the Main Office, Glenwood Plant, Mills Plant, Reservoir Sites, Well Sites and other CVWD facilities

No projects are planned for FY 19/20

7. Facilities & Planning:

Goal: Maintain and/or upgrade CVWD facilities to increase the life span of the facility, improve efficiency, and to meet the needs of the District. Also perform various planning studies to assist in defining the future direction of the District.

Objective No. 1 - Reservoir Site Improvements

1. Maintain and/or improve the existing reservoir sites to meet the needs of the staff and operations.
2. Make an assessment to determine needed repairs, infrastructure, and equipment at each reservoir site.

Williams Reservoir Site Improvements: The Williams Reservoir (also called Ocean View Reservoir) has been utilized over the years as a storage area for pipe, base material and other equipment. However, the site is underutilized and needs better planning for access and site storage. Other improvements that are need as re-design of the driveway entrance for larger truck access, upgrading to an automatic gate for security and re-grading of the site for better drainage. In addition, the site can be better utilized for storage of equipment and materials to better assist the field crews. The project will be a 2-year project with the first year of planning and design and construction the second year.

Project Schedule: - Site Assessment and topographic survey by January 2020; complete design and specifications by May 2020 and advertise for bids in June 2020. Staff anticipates construction to be start and be completed in FY 20/21.

Cost Estimate: - $110,000 for FY 19/20 & $300,000 for FY 20/21.

SUMMARY:

Staff prepared the preliminary FY 19/20 CIP budget based on the needs of the District for this coming year and for the next 5 years. The preliminary budget shown is estimated at $3.158M, which is greater than the CIP budget proposed during last year's discussion, which was $2.1M.

Option 1 – Additional Funding - Current CIP funding method is pay as you go (or Pay-Go) and staff will be looking into other funding mechanism such as:

- MTBE Reserve Fund – Currently $3.75M
- Wastewater Reserve Fund
- Bond and/or Commercial Loan Funding
- State Revolving Loan Fund
- Grant Revenue
- Adding a Capital Fund charge to bi-monthly bills.

Option 2 – Defer Capital Improvement to future years to reduce annual CIP budget

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

Attachments:

1. FY 19/20 CIP Budget Cost Summary

g:\engineering committee\2019 ec memo\02-22-19 ecm memo - fy 19-20 cip summary.docx

Capital Improvement Project Program FY 19-20 - Preliminary	Recorded FY 16/17	Recorded FY 17/18	Budget FY 18/19	FY 18/19 Cost to date from 7/1/18 to 12/31/18	FY 18/19 Cost Committed from 1/1/19 to 6/30/19	Projected FY 18/19	Budget FY 19/20	Forecast 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
1. Water Supply																	
A. Groundwater																	
i. Well Rehabilitation																	
Well 8 Rehabilitation	$ 43,039	$ 3,453															
Well 5 Rehabilitation		$ 69,388															
Well 10 Rehabilitation		$ 76,008															
Well 1 Rehabilitation			$ 65,000	$ -	$ 80,000	$ 80,000											
Well 7 Rehabilitation			$ 65,000	$ -	$ 80,000	$ 80,000											
Well 11 Rehabilitation							$ 95,000										
Well 14 Rehabilitation							$ 95,000										
Well Rehabilitation (2 Wells per year)								$ 210,000	$ 220,000	$ 230,000	$ 240,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
ii. New Wells																	
Re-Activate Well 2 - Design	$ 92,891	$ 99,746	$ -														
Re-Activate Well 2 - Construction	$ 224,776	$ 2,001,593	$ 405,000	$ 354,389	$ 197,000	$ 551,389											
Well 18 (Sycamore House) - Design											$ 175,000						
Well 18 (Sycamore House) - Construction												$ 1,825,000					
Well 19 - Design													$ 200,000				
Well 19 - Construction														$ 2,000,000			
Well 20 - Design															$ 200,000		
Well 20 - Construction																$ 2,100,000	
Well 21- Design																	$ 200,000
Well 21 - Construction																	
iii. Studies																	
Groundwater Source Water Protection Study																	
Update Water Well Replacement Study										$ 150,000							
Pilot Hole Study (Drill 5 pilot holes)											$ 250,000						
B. Imported Water																	
CVWD/LADWP Inter. at Ordunio (Grant - Matching Funds)																	
Ocean View Piping & Vaults (Grant - Matching Funds)																	
Ocean View Chlorination St (Grant - Matching Funds)	$ 4,464																
Ocean View - Equip. (Grant - Matching Funds)	$ 40,567																
Ocean View - Elect (Grant - Matching Funds)	$ 30,356																
Ocean View - Final	$ 58,073	$ 43,459	$ -	$ 2,819	$ 1,181	$ 4,000											
C. Groundwater Basin Recharge																	
Storm Water Recharge Study (Grant - Matching Funds)	$ 54,286																
Stormwater Recharge Project - Planning & Design							$ 185,000	$ 325,000									
Stormwater Recharge Project - Construction									$ 1,250,000	$ 750,000							
D. Recycled Water System																	
WS Total	$ 548,451	$ 2,293,647	$ 535,000	$ 357,208	$ 358,181	$ 715,389	$ 375,000	$ 535,000	$ 1,470,000	$ 1,130,000	$ 665,000	$ 2,075,000	$ 450,000	$ 2,295,000	$ 450,000	$ 2,350,000	$ 450,000
2. Water Storage																	
A. Reservoir Rehabilitation																	
i. Steel Reservoir Re-Coating/Roof/Vents Rehabilitation																	
Oak Creek #1 & #2 - Roof/Air Vents/Recoat	$ 13,689	$ 502,096	$ 514,800	$ 8,325	$ 484,000	$ 492,325											
Markridge - Roof/Air Vents/Recoat							$ 475,000										
Rosemont - Roof/Air Vents/Recoat								$ 550,000									
Eagle Canyon - Roof/Air Vents/Recoat											$ 700,000						
Edmund #2 - Roof/Air Vents/Recoat												$ 700,000					
Goss Canyon #1 & #2 - Roof/Air Vents/Recoat													$ 950,000				
Shields - Roof/Air Vents/Recoat														$ 750,000			
Mills Forebay - Roof/Air Vents/Recoat															$ 250,000		
Cresta Hts #1 & 2 - Roof/Air Vents/Recoat																$ 1,100,000	
Dunsmore - Roof/Air Vents/Recoat																	$ 750,000
Pickens Canyon - Roof/Air Vents/Recoat																	
ii. Concrete Reservoir Rehabilitation																	
Encinal Reservoir - Concrete Rehabilitation									$ 175,000								
Ocean View Reservoir - Concrete Rehabilitation										$ 175,000							

Capital Improvement Project Program FY 19-20 - Preliminary	Recorded FY 16/17	Recorded FY 17/18	Budget FY 18/19	FY 18/19 Cost to date from 7/1/18 to 12/31/18	FY 18/19 Cost Committed from 1/1/19 to 6/30/19	Projected FY 18/19	Budget FY 19/20	Forecast 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
B. Reservoir Water Quality																	
Reservoir Mixing System Design & Construction							$ 143,000	$ 143,000									
C. New Reservoir Water Storage																	
WS Total	$ 13,689	$ 502,096	$ 514,800	$ 8,325	$ 484,000	$ 492,325	$ 618,000	$ 693,000	$ 175,000	$ 175,000	$ 700,000	$ 830,000	$ 950,000	$ 750,000	$ 250,000	$ 1,100,000	$ 750,000
3. Water Distribution																	
A. Pipeline Replacement																	
2600 Block - Harmony Place - 450 LF	$ 47,080																
3900 Block - Park Place - 450 LF	$ 47,080																
3900 Block - Glenwood - 650 LF	$ 47,080																
2800 Block - Prospect & 4400 Block - Glenwood - 800 LF	$ 121,259																
Lower Pickens Canyon Crossing & Slope - 600 LF	$ 490,486	$ 90,702	$ -	$ 2,976	$ -	$ 2,976											
4200 - 4400 Block - Penn - 1,450 LF	$ 234,713	$ 224,130															
2700 Block - Brookhill - 800 LF	$ 1,906	$ 120,088	$ 94,600	$ 132,569	$ 40,600	$ 173,169											
5100 Block of La Crescenta - 400 LF	$ 854	$ 53,832	$ 42,900	$ 59,428	$ 18,200	$ 77,628											
3000 Block of Brookhill - 800 LF	$ 1,906	$ 120,088	$ 94,600	$ 132,569	$ 40,600	$ 173,169											
3100 Block of Brookhill - 800 LF	$ 1,906	$ 120,088	$ 94,600	$ 132,569	$ 40,600	$ 173,169											
3200 & 3300 Blocks of Brookhill - 1,485 LF							$ 590,000										
2400 & 2500 Block of Janet Lee - 1,300 LF							$ 525,000										
Annual Pipeline Replacement - 2,700 LF								$1,215,000	$1,485,000	$1,485,000	$2,250,000	$200,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
C. Booster Pump System																	
i. Annual Pump /Motor Replacement																	
Booster 12 at Markridge	$ 31,086																
Boosters - Encinal B & C		$ 7,021	$ -	$ 27,304	$ -	$ 27,304											
Boosters - Glenwood 32 & 33							$ 75,000										
Boosters - Booster 26 at CH								$ 35,000									
Boosters - Paschall B									$ 35,000								
Boosters - Ocean View B & Booster 25 at Markridge										$ 85,000							
Annual Booster Replacement - 2 Boosters											$ 95,000	$ 95,000	$ 100,000	$ 100,000	$ 110,000	$ 110,000	$ 110,000
ii. Pump Station Upgrade																	
Upgrade Paschall Booster Station - Design & Construction									$ 85,000	$ 450,000							
iv. MCC Replacement																	
MCC upgrade at Paschall - - Design & Construction									$ 85,000	$ 450,000							
E. Miscellaneous Projects																	
i. Water Surge Control																	
Rehabilitation Surge Tank at Glenwood							$ 75,000										
Rehabilitation Surge Tank at Mills Plant										$ 125,000							
iii. Misc.																	
Repairs to Ramsdell Mixing Station	$ 34,355	$ 16,737	$ -	$ 2,869	$ 2,131	$ 5,000	$ 165,000	$ 435,000									
Mills Plant - Aeration Tower Rehabilitation								$ 75,000									
WD Total	$ 1,059,709	$ 752,685	$ 326,700	$ 490,285	$ 142,131	$ 632,416	$ 1,430,000	$ 1,760,000	$ 1,690,000	$ 2,595,000	$ 2,345,000	$ 295,000	$ 2,100,000	$ 2,100,000	$ 2,110,000	$ 2,110,000	$ 2,110,000
4. Water Treatment																	
A. Nitrate Removal																	
i. Glenwood																	
Replace Ion Exchange Resin at Glenwood												$ 500,000					
ii. Mills																	
Ion Exchange Plant at Mills - Design													$ 150,000				
Ion Exchange Plant at Mills - Construction														$ 1,500,000	$ 1,500,000		
iii. Ordunio																	
Replace Bio Remediation AroNite Media at Ordunio										$ 200,000							
C. Convert to Chloramines																	
Conversion to Chloramination Disinfection			$ 100,000	$ 189,048	$ 740,952	$ 930,000											
WT Total	$ -	$ -	$ 100,000	$ 189,048	$ 740,952	$ 930,000	$ -	$ -	$ -	$ 200,000	$ -	$ 500,000	$ 150,000	$ 1,500,000	$ 1,500,000	$ -	$ -

Capital Improvement Project Program FY 19-20 - Preliminary	Recorded FY 16/17	Recorded FY 17/18	Budget FY 18/19	FY 18/19 Cost to date from 7/1/18 to 12/31/18	FY 18/19 Cost Committed from 1/1/19 to 6/30/19	Projected FY 18/19	Budget FY 19/20	Forecast 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
5. Technology																	
A. Automated Meter Information (AMI) System																	
AMI - Conversion of 3/4" to 4" Meters to Smart Meters							$ 325,000	$ 1,500,000	$ 1,500,000								
B. Supervisory Control and Data Acquisition (SCADA) System																	
SCADA RTU Replace - Equipment & Integration	$ 140,054	$ 13,193					$ 300,000	$ 300,000									
TECH Total	$ 140,054	$ 13,193	$ -	$ -	$ -	$ -	$ 625,000	$ 1,800,000	$ 1,500,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6. Public Safety/Emergency Response																	
A. Emergency Electrical Generators																	
B. Water Storage																	
Dunsmore/Pickens - Seismic Sensors & Valve Actuators	$ 72,834	$ 12,689	$ -	$ 199	$ 4,801	$ 5,000											
Ordunio - Seismic Sensors & Valve Actuators									$ 105,000								
Oak Creek #1 & #2 - Seismic Sensors & Valve Actuators										$ 105,000							
Encinal & Ocean View - Seismic Sensors & Valve Actuators											$ 125,000						
SF/ER Total	$ 72,834	$ 12,689	$ -	$ 199	$ 4,801	$ 5,000	$ -	$ -	$ 105,000	$ 155,000	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ -
7. Facilities & Planning																	
A. Main Office																	
Expansion with New Roof with Solar Panels									$ 125,000								
B. Glenwood Plant																	
D. Reservoir Site Improvements																	
Williams Reservoir Site Improvements							$ 110,000	$ 300,000									
Roof for Old Encinal - Storage Bldg									$ 150,000								
Pickens - Access Road Improvements										$ 250,000							
Edmund #2 - Lower Access Road Improvements											$ 300,000						
Goss Canyon - Site Improvements												$ 250,000					
Edmund #2 - Upper Access Road Improvements													$ 300,000				
Cresta Heights - Site & Road Improvements														$ 250,000			
Rosemont - Site Improvements															$ 150,000		
Edmund #2 - Site Improvements																$ 100,000	
Shields - Access Road & Site Improvements																	$ 350,000
Dunsmore - Site Improvements																	
Eagle Canyon - Site Improvements																	
Edmund #1 - Site Improvements																	
5. Misc. Properties																	
6. District Planning																	
F & P Total	$ 68,368	$ -	$ -	$ -	$ -	$ -	$ 110,000	$ 300,000	$ 275,000	$ 250,000	$ 300,000	$ 250,000	$ 300,000	$ 250,000	$ 150,000	$ 100,000	$ 350,000
Capital Improvement Projects - Total	$ 1,903,106	$ 3,574,310	$ 1,476,500	$ 1,045,065	$ 1,730,065	$ 2,775,130	$ 3,158,000	$ 5,088,000	$ 5,215,000	$ 4,505,000	$ 4,135,000	$ 3,950,000	$ 3,950,000	$ 6,895,000	$ 4,460,000	$ 5,660,000	$ 3,660,000

Capital Improvement Project Program FY 19-20 - Preliminary	Recorded FY 16/17	Recorded FY 17/18	Budget FY 18/19	*FY 18/19 Cost to date from 7/1/18 to 12/31/18*	*FY 18/19 Cost Committed from 1/1/19 to 6/30/19*	Projected FY 18/19	Budget FY 19/20	Forecast 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
FY 19/20 Capital Improvement Project Summary																	
1. Water Supply	$ 548,451	$ 2,293,647	$ 535,000	$ 357,208	$ 358,181	$ 715,389	$ 375,000	$ 535,000	$ 1,470,000	$ 1,130,000	$ 665,000	$ 2,075,000	$ 450,000	$ 2,295,000	$ 450,000	$ 2,350,000	$ 450,000
2. Water Storage	$ 13,689	$ 502,096	$ 514,800	$ 8,325	$ 484,000	$ 492,325	$ 618,000	$ 693,000	$ 175,000	$ 175,000	$ 700,000	$ 830,000	$ 950,000	$ 750,000	$ 250,000	$ 1,100,000	$ 750,000
3. Water Distribution	$ 1,059,709	$ 752,685	$ 326,700	$ 490,285	$ 142,131	$ 632,416	$ 1,430,000	$ 1,760,000	$ 1,690,000	$ 2,595,000	$ 2,345,000	$ 295,000	$ 2,100,000	$ 2,100,000	$ 2,110,000	$ 2,110,000	$ 2,110,000
4. Water Treatment	$ -	$ -	$ 100,000	$ 189,048	$ 740,952	$ 930,000	$ -	$ -	$ -	$ 200,000	$ -	$ 500,000	$ 150,000	$ 1,500,000	$ 1,500,000	$ -	$ -
5. Technology	$ 140,054	$ 13,193	$ -	$ -	$ -	$ -	$ 625,000	$ 1,800,000	$ 1,500,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6. Public Safety/Emergency Response	$ 72,834	$ 12,689	$ -	$ 199	$ 4,801	$ 5,000	$ -	$ -	$ 105,000	$ 155,000	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ -
7. Facilities & Planning	$ 68,368	$ -	$ -	$ -	$ -	$ -	$ 110,000	$ 300,000	$ 275,000	$ 250,000	$ 300,000	$ 250,000	$ 300,000	$ 250,000	$ 150,000	$ 100,000	$ 350,000
Capital Improvement Projects - Total	$ 1,903,106	$ 3,574,310	$ 1,476,500	$ 1,045,065	$ 1,730,065	$ 2,775,130	$ 3,158,000	$ 5,088,000	$ 5,215,000	$ 4,505,000	$ 4,135,000	$ 3,950,000	$ 3,950,000	$ 6,895,000	$ 4,460,000	$ 5,660,000	$ 3,660,000
Capital Improvement Projects - Budget within FY 18/19 CVWD Cashflow model			$ 2,476,500			$ 298,630	$ 2,100,000	$ 2,500,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,500,000	$ 3,500,000	$ 3,500,000	$ 3,500,000	$ 3,500,000	$ 3,500,000
			12.06%				$ 1,058,000 50%	$ 2,588,000 104%	$ 2,215,000 74%	$ 1,505,000 50%	$ 1,135,000 38%	$ 450,000 13%	$ 450,000	$ 3,395,000	$ 960,000	$ 2,160,000	$ 160,000

CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Action Item No. 3
February 22, 2019

To: Engineering Committee
From: David S. Gould. P.E. – District Engineer
Subject: **Administrative Consultants for FY 19/20**

ACTION ITEM:

Administrative Consultants for FY 19/20– Discussion of Proposed Studies and Reports for the Administrative Consultants expense for FY 19/20.

DISCUSSION:

The following is a list of Administration Consultants planned for FY 19/20:

FY 19/20 Administration Consultants						
Project Name	**Water**	**Sewer**	**Total**	**% Water**	**% WW**	**Comments**
GIS - Update	$5,000	$5,000	$10,000	50%	50%	GIS Consultant to assist with CVWD's GIS Program
Annual On-Call Grant Assistance	$30,000	$10,000	$40,000	75%	25%	Annual On-Call Grant Assistance
FMP: Reservoir Site Topo Boundary Survey	$10,000	$0	$10,000	100%	0%	Facilities Maintenance Plan: Rosemont Reservoir - Topo & Boundary
AMP: Assessment Management - Preliminary Assessment Study	$52,500	$17,500	$70,000	75%	25%	Facilities Maintenance Plan: Consultant to provide a preliminary assessment of CVWD's Assets
WMP: Update Hydraulic Model	$75,000	$0	$75,000	100%	0%	Water Master Plan: - Consultant to Update Hydraulic Model from 2004
WRP: Verdugo Basin/Groundwater Update	$50,000	$0	$50,000	100%	0%	Water Resource Plan: - Consultant to Update Groundwater Model; Joint Project with GWP
Total	**$222,500**	**$32,500**	**$255,000**	**87%**	**13%**	

The following is a list of Administration Consultants planned for FY 20/21:

FY 20/21 Administration Consultants						
Project Name	**Water**	**Sewer**	**Total**	**% Water**	**% WW**	**Comments**
GIS - Update	$5,000	$5,000	$10,000	50%	50%	GIS Consultant to assist with CVWD's GIS Program
Annual On-Call Grant Assistance	$30,000	$10,000	$40,000	75%	25%	Annual On-Call Grant Assistance
FMP: Reservoir Site Topo Boundary Survey	$10,000	$0	$10,000	100%	0%	Facilities Maintenance Plan: Oak Creek Reservoir - Topo & Boundary
AMP: Asset Management Plan	$168,750	$56,250	$225,000	75%	25%	Asset Management Plan: Consultant to prepare a Asset Management Plan
WMP: Booster Pump/Energy Study	$125,000	$0	$125,000	100%	0%	Water Master Plan: Consultant to perform a Energy Efficieny Study
Total	**$338,750**	**$71,250**	**$410,000**	**83%**	**17%**	

The following is a list of Administration Consultants planned for FY 21/22:

FY 21/22 Administration Consultants						
Project Name	**Water**	**Sewer**	**Total**			**Comments**
GIS - Update	$5,000	$5,000	$10,000	50%	50%	GIS Consultant to assist with CVWD's GIS Program
Annual On-Call Grant Assistance	$37,500	$12,500	$50,000	75%	25%	Annual On-Call Grant Assistance
FMP: Reservoir Site Topo Boundary Survey	$12,500	$0	$12,500	100%	0%	Facilities Maintenance Plan: Eagle Canyon Reservoir - Topo & Boundary
Wastewater Master Plan	$0	$175,000	$175,000	0%	100%	Wastewater Master Plan: Consultant to prepare a wastewater master plan
WMP: Ocean View #2 Reservoir (Top of Ocean View) - Feasibility Study	$75,000	$0	$75,000	100%	0%	Water Master Plan: Feasibility Study for New Reservoir to remove pipeline canyon crossings
FMP: Main Office Replacement Feasibility Study	$25,000	$25,000	$50,000	50%	50%	Needs Assessment of the Main Office
Total	**$155,000**	**$217,500**	**$372,500**	**42%**	**58%**	

RECOMMENDATION:

It is staff's recommendation for FY 19/20 is $225,500 for Administrative Consultants in the Water Budget and $32,500 for Administrative Consultants in the Wastewater Budget for a total of $255,000.

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

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CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 4
February 22, 2019

To: Engineering Committee

From: David S. Gould, P.E. – District Engineer

Subject: **CVWD – Emergency Water Supply Connections with GWP and LADWP**

Emergency Water Supply Connections with GWP and LADWP – Discussion of Emergency Water Supply Connections with GWP and LADWP

BACKGROUND:

Glendale-CVWD Interconnection

In 2003, CVWD, GWP and FMWD entered into an agreement for an emergency water supply interconnection between GWP and CVWD. Since CVWD is not a MWD member agency, FMWD was included in the agreement to account for water being transferred from one MWD member agency to another.

The agreement calls for when water is used by CVWD, that CVWD pays FMWD for the water use per MWD's treated water rate and pays GWP for the power/operations costs to bring the water to CVWD from GWP's system. In turn, GWP and FMWD exchange water transfer through MWD to account for the water being used by CVWD.

From 2003 to 2013, CVWD paid an additional $192/ac-ft to Glendale for water used during an emergency. In 2013, CVWD, GWP and FMWD met to review the GWP costs and it was agreed to revise the cost to $479/ac-ft to Glendale.

LADWP – CVWD Interconnection

In 2008, CVWD received a grant from DDW to install an emergency water supply interconnection between LADWP, CVWD and FMWD. The goal of the project was to be able to use LADWP connection during an emergency to provide water to CVWD and FMWD's sub agencies.

Construction of the project has been completed and the infrastructure is in place. The next steps are to test the system, get approval from DDW and finally complete an agreement between LADWP, CVWD and FMWD.

DISCUSSION:

Staff has attached the CVWD, GWP & FMWD agreement for review, a copy of a monthly invoice and a summary of water used over the past 5 years for further discussion. Staff will discuss the status of the LADWP interconnection and the next steps with this project.

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

Attachments:

1. 2003 CVWD, FMWD, GWP Agreement
2. Sample monthly invoice
3. Water Use Summary

GLENDALE WATER SERVICE INTERCONNECTION AGREEMENT WITH CRESCENTA VALLEY WATER DISTRICT AND THE FOOTHILL MUNICIPAL WATER DISTRICT (FMWD)

The City of Glendale *Water & Power* (GWP) and Crescenta Valley Water District (CVWD) currently have an agreement for temporary water service interconnection for use during water system emergencies. The Foothill Municipal Water District (FMWD) is CVWD's wholesale provider of water from The Metropolitan Water District of Southern California (MWD). The three parties intend to enter into this agreement for a permanent water system interconnection in the vicinity of New York and Honolulu Avenue (see Attachment 1), so that GWP can deliver water to CVWD, according to the terms presented below. The parties intend that the water delivered through the interconnection be treated as MWD water purchased by CVWD from FMWD. The physical facilities of GWP are being used for delivery only.

A. Interconnection Features

1. CVWD will pay all capital, operation, maintenance, and replacement costs for all facilities and features constructed as part of the interconnection. GWP will own the actual connection to GWP's pipeline and all features constructed to and including the first isolation valve. CVWD will own all the remaining features. GWP will have the right to review and approve the design prior to construction without incurring any legal obligations.

2. The maximum capacity of the interconnection is five cubic feet per second (5 cfs).

3. CVWD consultant, Bookman-Edmonston Consulting Engineers, has identified in a report dated June 27, 2002, that sufficient water delivery capacity exists in the Glendale water delivery system to deliver water from GWP's MWD connection G1 to meet both the Glendale and projected CVWD water demands.

4. CVWD will design a metering system in the interconnection to assure it will record the flows in a manner acceptable to GWP and FMWD, and annually calibrate the meters to maintain accuracy. Any calibration shall be conducted in the presence of GWP staff with results forwarded to GWP and FMWD.

5. CVWD will coordinate and incorporate into the construction project any SCADA communication system reasonably requested by GWP and FMWD so that the GWP system and FMWD can monitor flows through the connection.

B. Water Quality and Regulatory Requirements

1. CVWD will satisfy the California Environmental Quality Act (CEQA) requirements for this project and other regulatory requirements.

2. CVWD acknowledges that the quality of water in the Glendale water system at the point of proposed interconnection and understands that these conditions could change from time to time, based on the quality of water from MWD and in Glendale's Verdugo Basin water supplies and regulatory requirements. CVWD further acknowledges that Glendale is free to alter the quality of this water, as GWP deems appropriate for operational and regulatory purposes, provided the water continues to meet federal and state regulatory requirements.

3. CVWD will secure all approvals from the State Department of Health Services.

C. Water Operation

1. Subject to the terms and limitations of this Agreement, CVWD shall be entitled to take water from the interconnection on demand, up to five cubic feet per second (5 cfs).

2. CVWD agrees to abide by GWP's water service obligations, limitations, and conditions in water deliveries, and shall be in accordance with Glendale Water Service Regulations as they may change from time to time, exclusive of fixed monthly charges.

3. CVWD agrees that GWP's water service obligations, limitations, and conditions in water deliveries to CVWD from Glendale's MWD connection G1 shall be in accordance with MWD's Administrative Code as it may change from time to time.

4. CVWD will not expand its water service area so as to increase water demands on the proposed interconnection above 5 cfs and will continue to maintain, to the extent possible, its local production capability.

5. CVWD agrees that the delivery of water to CVWD will be subject to water availability, with the first priority to GWP customers.

6. CVWD agrees to notify GWP staff of any significant changes in operation, using criteria jointly established by GWP and CVWD.

7. CVWD agrees to operate flow rates at the Interconnection within the accuracy range of the meter.

8. CVWD further agrees that GWP may impose reasonable operating and design requirements so as not to impact the Glendale water system.

9. CVWD acknowledges that it is familiar with the water pressure at the point of interconnection and how it may vary from time to time.

10. CVWD will meter all water deliveries and report them to GWP and FMWD, who shall have the right to verify the meter readings at any time.

D. Financial

1. FMWD and GWP will develop the appropriate procedures with MWD to implement the provision that water delivered to CVWD through the Interconnection shall be accounted as if the water had physically delivered to FMWD. All deliveries to CVWD will be from MWD sources, and FMWD will be responsible for all MWD charges associated with those deliveries.

2. FMWD will reimburse GWP and invoice CVWD monthly for the water delivered through the Interconnection as if it had been delivered directly from FMWD to CVWD, and CVWD will pay FMWD directly for water supplies used. Said invoice will include the following cost components described below.

(a) Operation and Maintenance Cost – To compensate for the use of its facilities, FMWD will reimburse GWP for all operation and maintenance costs required to deliver water to CVWD, but in no event less than the amount FMWD charges CVWD for the water, less cost to purchase the water from MWD. Currently these charges consist of administration and energy rate components. GWP may adjust the reimbursement rate from time to time in consultation with CVWD and FMWD.

(b) GWP System Cost – A surcharge of 10% of the Operation and Maintenance Cost, as defined in Paragraph D.2(a) above, will be added for every acre-foot of water delivered to CVWD through the Interconnection to cover associated system costs of GWP.

(c) MWD Capacity Charge – GWP will account for any portion of their annual peak day demand caused by delivery of water to CVWD through the Interconnection. The CVWD portion of GWP's annual MWD Capacity Charge will be calculated by GWP in accordance with MWD methodology with documentation of such sent to both FMWD and CVWD by January 31st of each year. FMWD will maintain adequate water delivery records for the Interconnection showing appropriate use patterns to allow said calculation.

3. All FMWD payments to Glendale will be made monthly within 30 days following the first of every month. The minimum payment for every month will be $50 to cover administration costs, commencing with the first delivery of water through the Interconnection. All FMWD costs shall be recovered from CVWD in accordance with FMWD's monthly invoicing process.

E. Indemnity

1. CVWD shall indemnify, defend and hold harmless, to the maximum extent permitted by law, GWP and its officers, agents, employees and representatives, from and against any and all liability, suits, actions, proceedings, judgments, claims, losses, liens, damages, injuries (whether in contract or in tort, including personal injury, accidental death or property damage, and regardless of whether the allegations are false, fraudulent or groundless), costs and expenses (including attorney fees, litigation, arbitration, mediation, appeal expenses) which in whole or in part arise out of or are connected with, or which are alleged to have arisen out of or to have been connected with, CVWD's performance of this Agreement (including performance by its agents, employees, subcontractors or by anyone CVWD directly or indirectly employed).

2. CVWD's obligation to indemnify, defend and hold harmless shall remain in effect and shall be binding upon CVWD whether such injury or damage shall accrue, or may be discovered, before or after termination of this Agreement.

3. CVWD's failure to comply with this section's provisions shall constitute a material breach upon which GWP may immediately terminate or suspend this Agreement.

4. Each party represents and warrants that the execution and delivery of this agreement, and the performance by the party of its terms, do not conflict with, and will not constitute a material breach or default under, any other agreement to which it is a party.

F. Source Obligation

1. GWP will use its best efforts to meet its contractual water delivery commitment to CVWD. However, GWP will not be liable for inability to provide deliveries to CVWD because of operation problems, including but not limited to system and water supplies, deficiencies, mechanical failure, interruption in electrical energy, natural disaster, labor issues, drought, and regulatory issues.

G. Entire Agreement

1. This Agreement supersedes any and all other Agreements, either oral or in writing, between the parties hereto with respect to the subject matter hereof, and no other Agreement, statement, or promise relating to the subject matter of this Agreement which is not contained herein shall be valid or binding.

H. Assignment

1. Nothing under this Agreement shall be construed to give any rights or benefits to any party other than the parties hereto. No party shall assign any right or interest in this Agreement, nor delegate any duty owed, without the others' prior written consent. Any attempted assignment or delegation shall be void and totally ineffective for all purposes, and shall constitute a material breach and grounds for immediate termination or suspension of this Agreement.

2. In the event the parties consent to an assignment or delegation, the assignee, delegatee, or its legal representative shall agree in writing to personally assume, perform, and be bound by this Agreement's covenants, conditions, obligations and provisions.

I. Successors and Assigns

1. Subject to the provision regarding assignment, this Agreement shall be binding on the heirs, executors, administrators, successors, and assigns of the respective parties.

J. Attorney's Fees

1. If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees in addition to any other relief to which it may be entitled.

K. Governing Law

1. The validity of this Agreement and of any of its terms or provisions, as well as the rights and duties of the parties hereunder, shall be governed by the laws of the State of California.

L. Time is of the Essence

1. Whenever a task is to be performed by any party herein it shall be performed consistent with any time constraints set forth hereunder including exhibits, time being considered of the essence of this Agreement.

M. Notices

1. All notices hereunder must be in writing and, unless otherwise provided herein, shall be deemed validly given on the date either personally delivered to the address indicated below; or on the third (3rd) business day following deposit, postage prepaid, using certified mail, return receipt requested, in any U.S. Postal mailbox or at any U.S. Post Office; or when sent via facsimile to a party at the facsimile number set forth below or to such other or further facsimile number provided in a notice sent under the terms of this paragraph, on the date of transmission of that facsimile.

   Should any party change its address, the other parties shall immediately be notified in writing of such change, provided, however, that each address for notice must include a street address and not merely a post office box. All notices, demands or requests shall be sent by mail addressed as follows:

   GWP:

   City of Glendale
   Glendale *Water & Power*
   141 N. Glendale Avenue, Level 4
   Glendale, CA 91206-4496
   Attn: Donald R. Froelich
   Water Services Administrator
   Tel. No. 818/548-2137
   Fax. No. 818/552-2852

   CVWD: Crescenta Valley Water District
   2700 Foothill Boulevard
   La Crescenta, CA 91214
   Attn: Michael Sovich
   General Manager
   Tel. No. 818/248-3925
   Fax. No. 818/248-1659

   FMWD: Foothill Municipal Water District
   4536 Hampton Road
   La Canada Flintridge, CA 91011
   Attn: Anthony Zampiello
   General Manager
   Tel. No. 818/790-4036
   Fax. No. 818/790-9418

N. **Non-Discrimination in Employment**

1. CVWD certifies and agrees not to discriminate against any employee or person who is subject to this Agreement because of race, color, religion, religious belief, national origin, ancestry, citizenship, age, sex, sexual orientation, marital status, pregnancy, parenthood, medical condition, or physical or mental disability. Evidence of discrimination shall be sufficient cause for termination of this Agreement.

O. Severability

1. Should any part, term or provision of this Agreement or any document required herein to be executed be declared invalid, void or unenforceable, all remaining parts, terms and provisions hereof shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby.

P. Force Majeure

1. Neither party shall be considered in default in the performance of its obligations hereunder or any of them, if such obligations were prevented or delayed by any cause, existing or future beyond the reasonable control of such party which include but are not limited to acts of God, labor disputes or civil unrest. Any delays beyond the control of either party shall automatically extend the time schedule as set forth in this Agreement by the period of any such delay.

Q. Glendale Connection to CVWD System

1. CVWD agrees, if requested by Glendale, to develop a mutually acceptable agreement for CVWD to deliver water to GWP as presented in the Bookman-Edmonston report or other mutually designated location.

R. Term of Agreement

1. The term of this agreement is twenty years, with CVWD having the right to extend it for another twenty years upon notification prior to expiration of the initial twenty years from the date of the agreement. At the expiration of the original term or extension, CVWD will remove the facilities connected to the Glendale water system, unless the parties mutually extend this agreement.

S. Counterparts

1. This Agreement may be executed in counterparts, each of which shall be an original, but all of which shall constitute one and the same document. Each of the parties shall sign a sufficient number of counterparts, so that each party will receive a fully executed original of this Agreement.

Executed at _____, California, on the day and year first written.

Accepted by Crescenta Valley Water District (CVWD)

_____ _____

General Manager **Date**

Accepted by the City of Glendale

_____ _____

City Manager **Date**

Accepted by Foothill MWD

_____ _____

General Manager **Date**

To: Water Services Administrator
Glendale Water & Power
141 N. Glendale Ave., 4th Level
Glendale, CA 91206-4496

General Manager
Foothill Municipal Water District
P.O. Box 686
La Canada Flintridge, CA 91012-0686

MONTHLY PAYMENT FORM
GLENDALE/CVWD WATER SUPPLY INTERCONNECTION (GCVI)

Month: December Year: 2018

WATER SOLD

End-of-Month GCVI Meter Read = 79036 hundred cubic feet (hcf)

Prior End-of-Month GCVI Meter Read = 79036 hcf

Usage for Month, 0.00 cf ÷ 43,560 = 0.00 Acre-Feet, (AF)

COST per Section D.2 of the Glendale/CVWD/FMWD Agreement

(a) Operation & Maintenance Cost, $ 479.00 per AF x 0.00 AF = $ 0.00

(b) GWP System Cost, (from (a)) $ 0.00 * 10% = $ 0.00

(c) MWD Capacity Charge (2013), $6800 per cfs x 0 cfs[1] = $ 0.00

Total $ 0.00

Total Payment, FMWD to Glendale ($50 minimum) $50.00

Approved by: _____ Glendale
Approved by: _____ CVWD
Approved by: _____ FMWD

NOTE[1]: This is the portion of Glendale's peak capacity attributable to CVWD from flow through GCVI. The parties (Glendale/CVWD/FMWD) will meet after October 1st of each year to recalculate and determine the MWD Capacity charge component in accordance with Section D.2.c of the Agreement

Revised – 4/2/13

CRESCENTA VALLEY WATER DISTRICT
GLENDALE/FMWD/CVWD INTERCONNECTION
WATER USAGE SUMMARY

GWP System Cost									
Date	Present Reading	Previous Reading	Usage (hcf)	Usage (ac-ft)	Usage (gals)	Operation & Maintenance Cost ($479/ac-ft)	GWP System Cost (10% M & O Costs)	Total Monthly Payment	Total Payment, FMWD to Glendale ($50 minimum)
Jan-14	**61327**	**61327**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Feb-14	**61315**	**61327**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Mar-14	**61327**	**61315**	**1,174**	**0.03**	**8,804**	**$12.91**	**$1.29**	**$14.20**	**$50.00**
Apr-14	**61348**	**61327**	**2,126**	**0.05**	**15,946**	**$23.38**	**$2.34**	**$25.72**	**$50.00**
May-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jun-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jul-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Aug-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Sep-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Oct-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Nov-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Dec-14	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Total 2014			3,300	0.08	24,750	$36.29	$3.63	$39.92	$600.00

GWP System Cost									
Date	Present Reading	Previous Reading	Usage (hcf)	Usage (ac-ft)	Usage (gals)	Operation & Maintenance Cost ($479/ac-ft)	GWP System Cost (10% M & O Costs)	Total Monthly Payment	Total Payment, FMWD to Glendale ($50 minimum)
Jan-15	**61348**	**61348**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Feb-15	**62377**	**61348**	**102,900**	**2.36**	**769,692**	**$1,131.52**	**$113.15**	**$1,244.67**	**$1,244.67**
Mar-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Apr-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
May-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jun-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jul-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Aug-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Sep-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Oct-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Nov-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Dec-15	**62377**	**62377**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Total 2015			102,900	2.36	769,692	$1,131.52	$113.15	$1,244.67	$1,794.67

Date: 2/21/2019

CRESCENTA VALLEY WATER DISTRICT
GLENDALE/FMWD/CVWD INTERCONNECTION
WATER USAGE SUMMARY

GWP System Cost									
Date	Present Reading	Previous Reading	Usage (hcf)	Usage (ac-ft)	Usage (gals)	Operation & Maintenance Cost ($479/ac-ft)	GWP System Cost (10% M & O Costs)	Total Monthly Payment	Total Payment, FMWD to Glendale ($50 minimum)
Jan-16	**62377**	**62377**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Feb-16	**62462**	**62377**	**8,500**	**0.2**	**63,580**	**$93.47**	**$9.35**	**$102.82**	**$102.82**
Mar-16	**66116**	**62462**	**365,400**	**8.4**	**2,733,192**	**$4,018.81**	**$401.88**	**$4,420.69**	**$4,420.69**
Apr-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
May-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jun-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jul-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Aug-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Sep-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Oct-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Nov-16	**66116**	**66116**	**0**	**0.0**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Dec-16	**66138**	**66116**	**2,200**	**0.1**	**16,500**	**$47.90**	**$4.79**	**$52.69**	**$50.00**
Total 2016			376,100	8.69	2,813,272	$4,160.18	$416.02	$4,576.20	$5,023.51

GWP System Cost									
Date	Present Reading	Previous Reading	Usage (hcf)	Usage (ac-ft)	Usage (gals)	Operation & Maintenance Cost ($479/ac-ft)	GWP System Cost (10% M & O Costs)	Total Monthly Payment	Total Payment, FMWD to Glendale ($50 minimum)
Jan-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Feb-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Mar-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Apr-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
May-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jun-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jul-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Aug-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Sep-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Oct-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Nov-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Dec-17	**66138**	**66138**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Total 2017			0	0.00	0	$0.00	$0.00	$0.00	$600.00

Date: 2/21/2019

CRESCENTA VALLEY WATER DISTRICT
GLENDALE/FMWD/CVWD INTERCONNECTION
WATER USAGE SUMMARY

GWP System Cost									
Date	Present Reading	Previous Reading	Usage (hcf)	Usage (ac-ft)	Usage (gals)	Operation & Maintenance Cost ($479/ac-ft)	GWP System Cost (10% M & O Costs)	Total Monthly Payment	Total Payment, FMWD to Glendale ($50 minimum)
Jan-18	**73791**	**66138**	**765,300**	**17.57**	**5,739,750**	**$8,415.49**	**$841.55**	**$9,257.04**	**$9,257.04**
Feb-18	**73791**	**73791**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Mar-18	**79036**	**73791**	**524,500**	**12.04**	**3,923,260**	**$5,767.16**	**$576.72**	**$6,343.88**	**$6,343.88**
Apr-18	**79036**	**79036**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
May-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$50.00**
Jun-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Jul-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Aug-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Sep-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Oct-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Nov-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Dec-18	**0**	**0**	**0**	**0.00**	**0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total 2018			1,289,800	29.61	9,663,010	$14,182.65	$1,418.26	$15,600.91	$15,750.91

Date: 2/21/2019

CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 5

To: Engineering Committee — February 22, 2019

From: David S. Gould, P.E. – District Engineer

Subject: **Project Status - FY 18/19 - Capital Improvement Project Program**

FY 18/19 – CIP Project Schedule & Cost Estimate - The FY 18/19 Capital Improvement Project (CIP) program includes the following projects which are summarized below:

1. **TTHM Study and Chloramine Disinfection, Project E-995** – Staff has updated the project schedule based on the lead-time for the ammonia skids and the precast concrete vault provided by the vendors. The ammonia tank for Mills Plant was delivered at the end of January 2019, the ammonia skids should be delivered around the week of February 25, 2019 and the precast concrete vault should be delivered around the week of April 15, 2019. CVWD's crews will first work on installing the ammonia equipment at the Mills Plant, which should be completed towards the middle of March 2019. The work at the Glenwood Plant will start in end of March 2019 and completed in April 2019.

   Staff and its consultants are also working with the Division of Drinking Water (DDW) to amend the District's permit to operate. Staff is planning to submit a permit amendment request with supporting data to DDW in late March 2019 and the amendment to the permit should be completed by the end of April 2019.

   As staff continues monitoring the trends in the TTHM levels over the next few months, it's believed that the levels will stay near or below the target level of 64 ug/L. However, staff still has concerns that TTHM levels will rise during the summer of 2019 due to high demands, temperature and reduced groundwater. Staff is in discussion on a start date for the conversion to chloramines and is tentatively looking at early May 2019, prior to the 2nd quarter compliance sampling.

   02/22/19 Project Update:
   - Equipment ordered and waiting on delivery
   - Construction at Mills Plant – March 2019
   - Water Main – Dead-End Flushing starting March 4, 2019
   - Construction at Glenwood Plant – April 2019
   - DDW approval – anticipated in April 2019
   - Installation of Chlorine Analyzers at 6 sites – April - May 2019
   - Tentative Date – Conversion to Chloramines – May - June 2019

2. **Rehabilitation of Wells 1 & 7, Project E-999** – The FY 18/19 Capital Improvement Project (CIP) budget included the rehabilitation of Wells 1 and 7 as part of the District's on-going well rehabilitation program. The design and specification were completed in early December and was sent out to pump contractors that perform this type or work. The construction cost estimate for this project was $153,000.

   02/22/19 Project Update:
   - Construction – Well 1 – Start – March 4, 2019
   - Construction – Well 7 – Start - Late April 2019

3. **Automated Meter Infrastructure Program, Project E-998** – Staff met with the team from UtiliWorks from January 15 – 17, 2019 to begin the assessment of CVWD's AMI program. UtiliWorks will be using information to prepare a baseline business case study for CVWD for AMI including a cost-benefit analysis for the installation and implementation of the program, an estimation of costs to complete the project and funding options including available grant funding.

   02/22/19 Project Update:
   - Prepare preliminary Business Case Report for Engineering Committee – 3/15/19
   - Grant application submittal – 3/19/19
   - Presentation to Board of Directors – 4/9/19

4. **Steel Reservoir Rehabilitation at Oak Creek Reservoir #2, Project E-970** – The District has two (2) 1.6 MG steel tanks at its Oak Creek Reservoir site which were built in 1958 and 1961. The Oak Creek Reservoirs were re-coated and seismic structural upgrades in 2001. In 2005 and 2011, the reservoirs were again inspected and the report stated that there was increased corrosion on the roof and rafters above the water line. Oak Creek Reservoir #1 was completed in May 2018 and Oak Creek Reservoir #2 was postponed until November 2018.

   02/22/19 Project Update:
   - Oak Creek Reservoir #2 – Started 1/7/19 with interior coating removal and re-coating
   - Oak Creek Reservoir #2 – Additional structural repairs – to be completed by 2/26/19
   - Oak Creek Reservoir #2 – Anticipated completion date – 3/8/19

5. **Stormwater Capture Project, Project E-985** – John Robinson Consulting (JRC) has been assisting CVWD and their consultant, Greg Hamer from Wood Group (formally Foster Wheeler) with developing conceptual plans to depict the planned facilities at CVC Park that will include:
   - Infiltration galleries beneath the ball field area and parking areas including piping from the Verdugo Wash
   - Conversion of the southern end of Dunsmore Avenue to a "green street" including improved drainage, bioswales, and other improvements,
   - Park improvements to ball field, basketball court and picnic areas
   - Native plant demonstration garden in the southeast end of the park.

   In addition, the County of Los Angeles Department of Parks & Recreation (DPR) have identified through a needs assessment a number of items including adding lighting at the dog park, additional trails, picnic shelters and fitness zones.

   The next steps will be to complete the conceptual plan and then meet with County of Los Angeles Department of Parks & Recreation and Department of Public Works, City of Glendale, and CV Town Council to get input and comments.

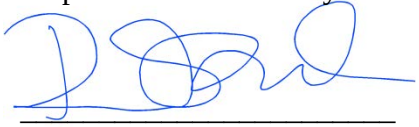
   02/22/19 Project Update:
   - Preliminary Conceptual Plan – Reviewed at 4/15/19 Engineering Committee meeting
   - Meet with Stakeholders for input and comment
   - Develop a preliminary cost estimate for review
   - Develop a project schedule for design, review, approvals and construction
   - Develop potential project funding
   - Presentation to Board of Directors

6. **CVWD's Well 2 and Related Facilities, Project E-956** – APTwater completed the testing phase of the project including water quality testing to reduce nitrates. The AroNite Verification Report was sent to DDW on 12/21/18 for their review and comments. DDW has requested additional information on the construction of the facility and methodology for nitrate reduction. Staff is waiting on comments from DDW and hopefully DDW will issue the amendment to the permit by the middle of February 2019. Well 2 started out pumping at 150 gpm in September 2018 and now it is running at about 100 gpm. The AroNite treatment system has shown nitrate reduction from 45 mg/L as N to 7 mg/L inside the system and 24 mg/L as N when blended with untreated Well 2 water. See schedule below for lasted update.

CVWD - Re-active Well 2 & Nitrate Removal Treatment System
Update Project Schedule for DDW Approval
(Revised 2/14/19)

Task No.	Task	Person Responsible	Start Date	End Date	Status	Calendar Days
1	Review Comments from DDW, Respond to DDW & Send back	1. Well 2 - DG/CS 2. Test Protocol - DF 3. Testing Report - DG	Monday, February 11, 2019	Tuesday, February 26, 2019		15
2	DDW Review Comments & Send back to CVWD	DDW	Tuesday, February 26, 2019	Tuesday, March 19, 2019		21
3	Meeting to review permit requirements, tentative date to put into service & Sampling List	DG	Tuesday, March 19, 2019	Friday, March 22, 2019		3
4	Finalize Sampling Plan for Monthly Report	DDW/CVWD	Friday, March 22, 2019	Friday, March 29, 2019		7
5	**Amended Permit/Put into Service**	**DDW/CVWD**	**Friday, March 29, 2019**	**Monday, April 15, 2019**		**17**
6	Operations & Maintenance Manual - Draft	DF/APT	Tuesday, February 19, 2019	Tuesday, February 26, 2019		7
7	Operations & Maintenance Manual - Review by CVWD	Operators	Tuesday, February 26, 2019	Friday, March 8, 2019		10
8	On-site training (Session 1)	DF/Operators	Monday, March 11, 2019	Wednesday, March 13, 2019		2
9	On-site training (Session 2)	DF/Operators	Monday, March 18, 2019	Wednesday, March 20, 2019		2
10	On-site training (Session 3)	DF/Operators	Monday, March 25, 2019	Wednesday, March 27, 2019		2
11	SCADA Coordination Meeting - On-site	RD, MH, DG, & DF	Tuesday, March 5, 2019	Friday, March 8, 2019		3
12	Installation of SCADA & Communication Equipment	RD, MH, DG, & DF	Monday, March 11, 2019	Monday, March 25, 2019		14
13	SCADA Coordination Meeting 2 - On-site - Final	RD, MH, DG, & DF	Monday, April 8, 2019	Friday, April 12, 2019		4

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

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