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

April 26, 2019 at 3:30 PM

Posted April 25, 2019 at 9:00 AM

Call to Order

Adoption of Agenda

Information Items

1. Status of Groundwater Wells and Well Capacity
2. Graphical Information System (GIS) Upgrades
3. Advance Metering Infrastructure (AMI) Project Update, Project E-998
4. FY 19/20 – Capital Improvement Project (CIP) Program
5. Project Update
    - TTHM Study and Upgrades to Disinfection System, Project E-995
    - Well 2 and Related Facilities, Project E-956
    - 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.

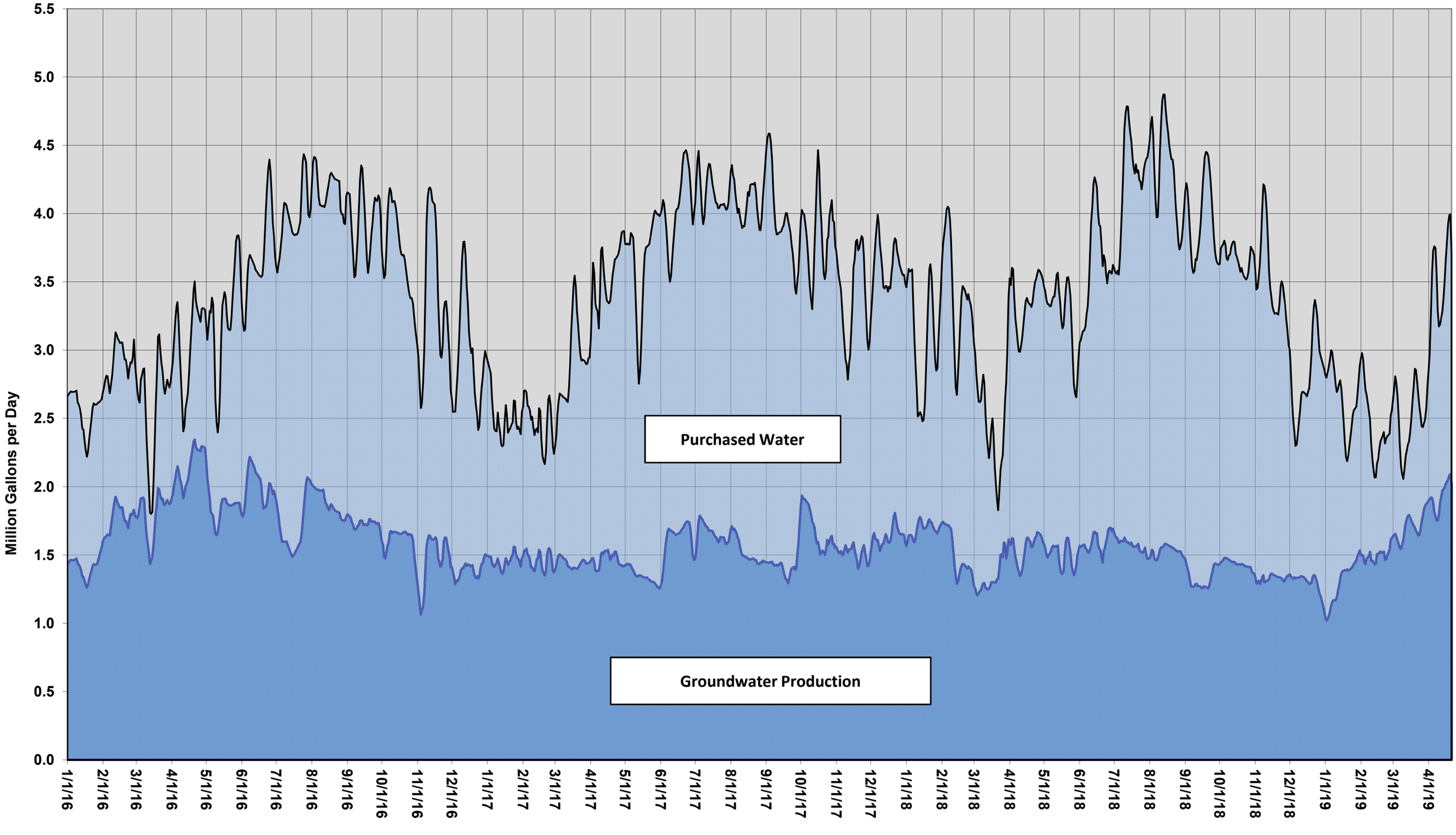
Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – May 24, 2019

Adjournment

Water Production Chart 2016 - 2019

Groundwater Production (MGD) Total Water (MGD)



CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 2

To: Engineering Committee — April 26, 2019

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

Subject: **Graphical Information System (GIS) Update**

INFORMATION ITEM:

Graphical Information System (GIS) Update: Award a contract to Miller Spatial to provide GIS support services to upgrade CVWD's GIS system for a cost of $31,175.

BACKGROUND:

An Engineering Department goal that was set in August 2018 was to update and improve the District's GIS system to include base information of parcels, accounts location of water meters and other base information. This information will be utilized as an update the CVWD's Customer Information System and provide update data for staff.

DISCUSSION:

It was the Department's original intention was to update the GIS system with staff as time allowed. However, the number of developer projects and O & M projects has increased over the year and has not allowed staff to fully concentrate on the detailed work necessary to update the GIS system.

Staff met with Mr. David Manuwa from Miller Spatial (Miller), which provides GIS support services to discuss using their services to update CVWD's GIS system and to provide this information in a "cloud" environment for use by CVWD staff.

Miller provided a proposal with a scope of work that includes reviewing CVWD's existing GIS system, data hosting and updating the base map and providing integration with the District's CIS system.

RECOMMENDATION:

It is staff's recommendation to award a contract to Miller Spatial for $31,175 at the next Board meeting on May 14, 2019. There is funding available in the FY 18/19 Administrative Consultants budget for these services.

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

Attachment:

1. Miller Spatial proposal dated April 16, 2019

g:\engineering committee\2019 ec memo\04-26-19 ecm memo - gis update.docx

PROPOSAL

GEOGRAPHIC INFORMATION SYSTEMS (GIS) CONSULTING SERVICES

Submitted To: Crescenta Valley Water District
Attention: David Gould
2700 Foothill Blvd
La Crescenta, CA 91214

Submitted On: April 16, 2019

Miller Spatial Services
3499 Tenth Street
Riverside, CA 92501

Contents

Cover Letter:

RE: Geographic Information System (GIS) Consulting Services

Dear Mr. Gould,

It was a pleasure to meet with you and the other staff at the Crescenta Valley Water District (CVWD) office. As we discussed, this proposal is for GIS Consulting Services to CVWD to assist the district in the evaluation and updating of the existing GIS data, CIS water and sewer tables, associated spatial datasets, user accessibility, and data management to help streamline workflow processes. The scope of services in this proposal is for evaluating existing databases, systems, and work already completed by CVWD. More importantly, provide deliverables and recommendations for data consolidation, system connectivity, and the foundation to meet the district's current and future GIS needs.

The goal of CVWD is to leverage its investment in technology, consolidate information, improve data quality, increase user collaboration, and expand GIS within the agency. As an Esri business partner, we will work with Esri on behalf of district to identify a GIS solution that best fits CVWD's workflows and needs. CVWD provides services to approximately 8,000 accounts that include both water and wastewater. The district is using Springbrook Utility Billing software for customer billing and information. It is critical, that GIS and CIS data to be synchronized allowing for better decision making, customer service, and operational maintenance.

Miller Spatial Services (MSS), is a leading GIS Consulting firm specializing in the development and deployment of Esri Technologies and Enterprise Asset Management Systems. Our, customers consist of public utilities (Water) and local government agencies. We bring over fifty-years of combined work experience to this project.

This proposal is valid and binding for a period of sixth (60) days after the proposal due dates. Thank you for considering Miller Spatial Services for this project and we look forward to working with CVWD. Should you have any questions, feel free to contact me or David Manuwa.

Sincerely,

Bruce Miller, GISP
Founder | GIS Consultant

esri Partner Network Silver

MILLER SPATIAL

General Information:

Miller Spatial Services, LLC (Miller) is a multi-service organization providing specialized services in asset lifecycle management, Geographic Information Systems (GIS), and application software services. Miller provides professional services including consulting, implementation, training, staffing and technical support.

The Miller Spatial team has implemented and customized Esri software and GIS data in over 50 organizations. Our team has an unmatched breadth of experience, unique talent and industry leading know-how that will complement your existing GIS program and server your future needs.

Miller Spatial is comprised of a core group of GIS professionals, as well as Asset Management, networking, and programming professionals with extensive experience in the industry. Miller Spatial has 10 technical employees and specialized network of trusted partners that can be utilized as needed. Our employees have expertise in Esri software implementation, customization and integration, application development, asset management, and database administration.

Miller Spatial sets the standard for high quality CMMS/AMS implementation projects, particularly within organizations who manage water, sewer, and park assets. Our asset management and GIS teams are staffed with a wide range of industry and technical experts, combining for over 30 years of experience in GIS and asset management. We have achieved certification with the Institute of Asset Management and maintain active partnerships with ESRI, Cityworks, CitySourced and others. MSS currently has about 50 active clients throughout the western United States, but our business is primarily in Southern California and can be on-site, same day if necessary.

MSS is fully insured and bonded for all services that we offer. We are a Dun & Bradstreet verified business (DUNS 03-076-7626). We have been contracted for over $1,000,000 in services over the past 5 years, and the company has no debt.

Partner Network

We are official Business Partners of Esri, Cityworks®, and CitySourced. Each of these partnerships provides opportunities for access to developer teams and support personnel as needed. Our employees also have access to training and education with these specific partners that keeps them up to date on the latest developments and technologies. Our strong relationships allow us to be early accepters for the latest releases and applications.

Location and Address:	Miller Spatial Services, LLC 3499 Tenth Street Riverside, CA 92501
Telephone Number:	(888) 890-5611
Company Officer:	Bruce Miller

President
brucemiller@millerspatialservices.com
(888) 890-5611 x700 office
(951) 505-9276 mobile

Key Contact:	David Manuwa dmanuwa@millerspatialservices.com (310) 953-1844 mobile
Form of Business:	Limited Liability Company
Federal Tax ID Number:	45-4791831
Company Owner:	Bruce Miller, President
Surety Information:	General Liability, Automobile, E&O, Workers Compensation (Certifications)

Project Scope:

TASK 1: PROJECT SETUP AND KICKOFF MEETING

A project initiation meeting will be scheduled with CVWD staff to review the project scope of work, timeline, and discuss team member roles and responsibilities. MSS will collect a copy of datasets (Water/Sewer/Billing) as well as any additional information deemed relevant to the success of the project.

- Review Project Scope of Work
- Review Project Timeline
- Identify Team Member Roles and Responsibilities
- Data Acquisition

TASK 2: KNOWLEDGE DISCOVERY AND DATA ASSESSMENT

MSS will perform a review and evaluation of CVWD's existing GIS water and sewer data in comparison to Esri's Utility Data Model and identify any missing fields or data that may be required by an Esri' application or template which CVWD may use in the future. The evaluation process will determine the feature status, data themes (layers), data content, data integrity, connectivity, and flush out any unforeseen shortfalls related to the GIS database. A follow-up meeting will be scheduled to discuss the findings with District staff.

- Identify Account Status
- Review Data Themes (points, lines, polys)
- Review Data Content (structure and standards)
- Review Data Integrity (connectivity and tables)

TASK 3: DATA HOSTING AND SYSTEM CONNECTIVITY (GIS/CIS)

MSS will review the existing GIS and CIS databases and identify critical attribute fields and information to establish connectivity between the GIS and CIS Billing systems. Once, this has been completed the team will update the GIS water and sewer geodatabase feature class to include the necessary attribute fields and information for a seamless data migration of the two systems.

- Establish data connectivity between the GIS and CIS databases
- Review existing Esri licensing and provide a hosted solution roadmap
- Define data management and storage protocols
- Define end-user needs

TASK 4: BASE MAP DATA DISCOVERY AND ACQUISITION

MSS will review existing base map spatial datasets and acquire updated spatial datasets from surrounding local agencies and County (If available), to support objectives within CVWD's service area. Once, the spatial datasets have been acquired and migrated into the GIS system, CVWD staff will have the ability to overlay the water and sewer data to validate CVWD's accounts and service area. The validation process provides a representation of accounts currently serviced by CVWD.

- Acquire spatial datasets (Boundary) for local agencies and county
- Migrate boundary spatial datasets into CVWD GIS system
- Perform CVWD Account Assessment within Service Area

TASK 5: CVWD CIS ACCOUNT ASSESSMENT AND DATA UPDATES

MSS will review the existing CVWD account table and compare the Account No. to Ref No. and define and capture critical account information related to water and sewer accounts. MSS will update the CIS water and sewer account information to reflect Account, Lot or Parcel, Service Type, Water, Sewer or combination, Active, Inactive or Suspended.

- Review CVWD Account Table
- Update CVWD Water/Sewer Account Table

TASK 6: METER (CIS) INTEGRATION WITH GIS WATER GDB

MSS will migrate water meter information form the CIS database into the GIS water geodatabase. Once, the data has been migrated MSS will work with CVWD staff to ensure the newly updated feature-class layer is compatible with CVWD GIS system and meets CVWD requirements.

- Update Water Meter Geodatabase (Point Layer)
- Training if required

TASK 7: ASSESSOR DATA AND BILLING DATA ASSESSMENT

MSS will conduct a review and comparison of the County assessor database to CVWD's CIS account (Meter) database and identify data relationship discrepancies i.e. One-to-One, One-to-Many, between the assessor information (APN) and CIS meter information (Ref No.). MSS will update the meter database to reflect the most update locational information (APN/Address/RefNo.), based on the information available from the County and CVWD.

- Updated CVWD Table
- Updated Assessor Information (If available)
- Identify other options to County Assessor offerings

DELIVERABLES:

- Project Kickoff Meeting Notes
- Knowledge Discovery and Data Assessment Findings Document
- Data Hosting Road Map and GIS/CIS Data Connectivity
- Base Map (Boundary) Findings and Data Acquisition
- GIS and CIS Account Findings and Data Updates
- Update GIS Water Geodatabase (Meter) Information
- Updated CVWD Table and Property Information (If available)

Compensation:

Task	Description	Total Cost
1	**Project Setup and Kick Off Meeting**	$ 1,500
2	**Knowledge Discovery and Data Assessment**	$ 2,500
3	**Data Hosting and System Connectivity (GIS/CIS)**	$ 5,800
4	**Base Map Data Discovery and Acquisition**	$ 1,200
5	**CVWD CIS Account Assessment and Data Updates**	$ 5,800
6	**Meter (CIS) Integration with GIS**	$ 6,700
7	**Assessor Property and CVWD Meter Assessment**	$ 7,675
	Total Project Cost	**$ 31,175**

Total project cost not exceed $31,175. Tasks 1 through 7 will be billed fix fee.

MILLER SPATIAL

Project Schedule:

The project schedule will be dependent on the availability of District staff. MSS anticipates that this scope of work can be completed by June 28, 2019 after the Project kickoff meeting depending on the availability of District staff for meetings and data acquisition.

Thank you for considering Miller Spatial Services for this project. Please contact me or David Manuwa if you have any questions or concerns.

Sincerely,

Bruce Miller, GISP
President | GIS Consultant

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the last date below written.

President, Miller Spatial Services, LLC	CVWD Authorizing Signature
Date	Date

MILLER SPATIAL

CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 3

To: Engineering Committee — April 26, 2019

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

Subject: **CVWD's Advanced Metering Infrastructure Project Update**

INFORMATION ITEM:

Award a contract to Utiliworks Consulting to provide services to prepare a Request for Proposal (RFP) for the procurement and installation of the AMI communication network for a cost of $28,900.

BACKGROUND:

UtiliWorks made a presentation for the AMI business case at a previous Board meeting, which was well received by the Board. UtiliWorks preliminary cost estimate for the entire project was $3.3M over an initial 30-month period. The Board requested that staff look into making the overall project scalable, where the AMI network and customer engagement portal would be installed in the next 2-year and to bring the meters into the AMI network system over a longer period of time, thereby spreading the cost of the overall project over a 5-year period on the attached AMI summary.

DISCUSSION:

As the District proceeds forward with AMI, the next step will be preparing an RFP for the procurement and installation of AMI communication network. Staff requested a proposal from UtiliWorks for the development of a RFP to solicit vendors that can provide an AMI communications network that meets the District's needs (see attached proposal).

UtiliWorks' scope of work include meeting with staff to finalize core functions of the AMI Network such as:

- Functional Requirements: What does CVWD want this new technology to do?
- Telecommunications Requirements: Does CVWD have existing structures to mount communications equipment and what backhaul methods are available?
- Business Requirements: What business needs is fulfilled by an AMI Program?
- Integration Requirements: How does CVWD want this new technology to interface with other systems?
- Performance Requirements: What measures of performance should be specified in the RFP for the vendor to satisfy the business requirements?
- Reporting Requirements: What types of reports and reporting tools will the District need to optimize the information?

After meeting with staff, UtiliWorks will prepare a scope of work for the RFP with the purpose of providing necessary information to the AMI Network vendors for a complete project. UtiliWorks will also provide a list of potential vendors that can complete the work and include options for purchasing or leasing the equipment.

UtiliWorks proposal to provide consulting services is $28,900 and staff will be bring the award of contract at the next Board meeting on May 14, 2019. There is funding available in the FY 18/19 Administrative Consultants budget for these services.

The project schedule will be for UtiliWorks to start on May 15, 2019 and complete the RFP by July 31, 2019. The RFP will not be sent out to vendors until the Board has approved the FY 19/20 Water Budget and CIP program, thereby giving the Board additional time to discuss possible funding options for the AMI program.

Summary of AMI Program for FY 19/20

The District's AMI program for FY 19/20 includes coordination, deployment, programing and integration of the AMI communications network (as discussed above), installation of a small amount of lids and connectors to perform proof of concept, incorporating the AMI communications network into the District's current Customer Information System (CIS), and GIS system, and resume water meter replacement in Pressure Zones 1, 2 & 3 by CVWD crews.

The District's project manager will be David Gould, who will coordinate the project with CVWD staff and field crews. Mr. Gould will also need additional consulting services from Utiliworks including evaluation of proposals, contract negotiations, maintaining the overall project schedule; working with all project participants to monitor progress and adjust the work plan as needed to stay on schedule; facilitating regular project progress and other meetings; creating project status reports; and, tracking project budgets for the installation, programing and integration of the AMI communications network. Staff has estimated this cost to be approximately $95,000, which is part of the overall cost for AMI communications network deployment.

AMI Program – FY 20/21 to FY 23/24

As shown on the attached AMI project summary, staff is planning to implement the AMI program over a five year period. As shown, each year, a portion of the ¾" and 1" meters will be equipped with new lids and connectors, the larger meters will be incorporated into the AMI system and deployment of the customer engagement platform for customer interaction. Other tasks that still need to be discussed further are opt-out policy, community outreach, changing billing period from bi-monthly to monthly and other business policies.

The project schedule as proposed above is a 5-year deployment schedule based on current funding available. If the District receives a $300,000 grant from the US Bureau of Reclamation, the project schedule will need to be accelerated as the USBR Grant stipulates the project has to be completed in 2-years. If the District decides to obtain bond financing for the CIP program, then the AMI program need to be completed within 30 to 36 months to meet the requirements of the bond financing.

SUMMARY:

It is staff's recommendation to move forward with the AMI program by utilizing UtiliWorks to prepare the RFP to solicit vendors that can provide an AMI communications network for $28,900. The award of contract will be placed on the agenda at the next Board meeting on May 14, 2019.

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

Attachments:

1. Advanced Metering Infrastructure (AMI) Project Summary
2. Utiliworks Consulting Proposal dated April 17, 2019

Advanced Metering Infrastructure (AMI) Project Summary

Staff utilized the AMI Recommendations Memorandum (Memo) dated 4/16/19 from UtiliWorks to develop a preliminary project schedule and estimated project costs for discussion and as shown below.

FY 19/20 – Year 1

- AMI communication network
  - Procure AMI Network Vendor
  - Installation AMI Network
  - AMI Software programing and integration
  - Program Management - Consultant
- CIS & GIS programing and integration
  - Integration of CIS program to accept data from AMI Network
  - Upgrade GIS data from information from AMI Network
  - Program Management - CVWD
- Proof of Concept – Alpha & Beta Testing
  - Program Management – Consultant
  - Install and testing – 50 meters – CVWD crews
- Meter Replacement
  - Install ¾" & 1" meters in Zone 1, 2 & 3 - CVWD Crews
  - Program Management – CVWD

YEAR 1 - Summary FY 19/20				Comments
Task	**Quality**	**Unit Cost**	**Cost**	
AMI/MDMS Deployment	1	$289,575	$289,575	RFP, award, integration, installation, testing
CIS & GIS Integration	1	$65,000	$65,000	Integration AMI into CIS & GIS
Proof of Concept - 50 meters	50	$175	$8,750	Replacing Meters, Lids & Connectors (CVWD)
Project Management - UtiliWorks	1	$15,000	$15,000	Alpha & Beta Testing - 50 meters (CVWD)
Pressure Zone 1,2 & 3 - Meters Only	1,190	$150	$178,500	Install new meters (CVWD)
			$556,825	

FY 20/21 – Year 2

- MDMS and Customer Engagement Platform (MDMS/CEP)
  - Program Management - Consultant
  - Procure MDMS/CEP Vendor
  - Installation MDMS/CEP
  - MDMS/CEP Software programing and integration
- AMI Connectors at meter box
  - Zone 9, 10 & 11 – Contractor
  - Meter Box Lids and Connectors
  - Program Management - CVWD
- Replace 1-½" and 2" Meters
  - Install 1-½" and 2" Meters – CVWD crews
  - Install meter lids and connectors – CVWD crews
  - Program Management – CVWD

YEAR 2 - Summary FY 20/21				Comments
Task	**Quality**	**Unit Cost**	**Cost**	
MDMS + Customer Engagement Platform	1	$218,450	$218,450	RFP, award, integration, installation, testing including Project Management
Project Management - CVWD	1	$60,000	$60,000	Project Management for Proof of Concept & install of Zones 9 - 11
Zone 9, 10 & 11 - lids & connectors	694	$175	$121,450	New Lids, Connectors & Labor Cost (contractor)
1.5" & 2" Meter, replace	179	$2,500	$447,500	Install new meters (CVWD)
1.5" & 2" lids & connectors	212	$750	$159,000	New Lids, Connectors & Labor Cost (CVWD)
Total			**$787,950**	

FY 21/22 – Year 3

- AMI Connectors at meter box
  - Zone 6, 7 & 8 – Contractor
  - Meter Box Lids and Connectors
  - Program Management - CVWD
- Replace 3" and 4" Meters
  - Install 3" and 4" Meters – CVWD crews
  - Install meter lids and connectors – CVWD crews
  - Program Management – CVWD

YEAR 3 - Summary FY 21/22				Comments
Task	**Quality**	**Unit Cost**	**Cost**	
Zone 6, 7 & 8 - lids & connectors	1,395	$175	$244,125	New Lids, Connectors & Labor Cost (contractor)
Project Management - CVWD	1	$60,000	$60,000	Project Management (CVWD)
3" & 4 " Meter, replace	15	$3,500	$52,500	Install new meters (CVWD)
3" & 4" - lids & connectors	31	$750	$23,250	New Lids, Connectors & Labor Cost (CVWD)
Total			**$379,875**	

FY 22/23 – Year 4

- AMI Connectors at meter box
  - Zone 3, 4 & 5 – Contractor
  - Meter Box Lids and Connectors
  - Program Management – CVWD

YEAR 4 - Summary FY 22/23				Comments
Task	**Quality**	**Unit Cost**	**Cost**	
Pressure Zone 3, 4 & 5	2,477	$175	$433,475	New Lids, Connectors & Labor Cost (contractor)
Project Management - CVWD	1	$60,000	$60,000	Project Management
Total			**$493,475**	

FY 23/24 – Year 4

- AMI Connectors at meter box
  - Zone 1 & 2 – Contractor
  - Meter Box Lids and Connectors
  - Program Management - CVWD

YEAR 5 - Summary FY 23/24				Comments
Task	**Quality**	**Unit Cost**	**Cost**	
Pressure Zone 1 & 2	2,415	$175	$422,625	New Lids, Connectors & Labor Cost (contractor)
Project Management - CVWD	1	$60,000	$60,000	Project Management
Total			**$482,625**	

Total Estimated Project Costs	**$2,700,750**	

CRESCENTA VALLEY WATER DISTRICT

Advanced Metering Infrastructure
Phase II RFP Development

Date: April 17, 2019

Crescenta Valley Water District
Attn: David S. Gould, P.E.
District Engineer
2700 Foothill Blvd.
La Crescenta, CA 91214

UtiliWorks Consulting, LLC.
2351 Energy Dr. STE 1010
Baton Rouge, LA 70808

225.766.4188 Office
225.612.6404 Fax
www.utiliworks.com

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Strategic Utility Consulting

Exhibit A – Scope of Work

Purpose

This Scope of Work (SOW) specifies, in detail, the services UtiliWorks Consulting, LLC. ("UtiliWorks") will provide Crescenta Valley Water District ("CVWD" or " the District") related to Advanced Metering Infrastructure (AMI) RFP Development Support (Phase II). This SOW is authorized following the completion of UtiliWorks/CVWD's Advanced Metering Infrastructure Strategic Planning and Roadmap Development (Phase I) activity and the District's Board of Directors recommendation to proceed with the project.

Assumptions

- A single AMI/MDMS/Customer Engagement Platform/ Meter Installation RFP will be produced.
- CVWD will be responsible for all legal and purchasing requirements (terms and conditions) to be outlined in the RFP.
- CVWD will assign a project manager to participate in status calls with the UtiliWorks project manager to review open issues and remove barriers to progress.
- Work will be performed by UtiliWorks resources either on-site or off-site in the completion of deliverables.
- CVWD will provide access to key resources that will be required.
- CVWD agrees to provide the UtiliWorks project team with online, interactive access capability as well as workspace for consultants while on-site.
- Any required state, city, or local government taxes, fees, or business licenses costs will be invoiced to the client at actual cost incurred.
- The anticipated start for the project is mid-May 2019. Based on current assumptions, the expected end date is July 2019.

Scope of Work Activities

Task 1 – Kickoff and Procurement Strategy

Prior to launching the project, UtiliWorks will work with CVWD to compile the internal project team organizational chart for the procurement phase which will facilitate effective communications. UtiliWorks will hold an on-site kickoff meeting to review the project scope, timeline, communications plan, and housekeeping items.

UtiliWorks will conduct a procurement strategy meeting to discuss different AMI implementation options/scenarios and the critical RFP requirements, including the option to solicit multiple vendors for separate components of the system (e.g. meters, AMI system, meter data management system, etc.). The intent of this session is to ensure CVWD is aware of all the possible approaches before beginning work on the actual RFP.

Deliverables: RFP Development Kickoff (.ppt)*

Task 2 – Requirements and Specifications

UtiliWorks' approach to the procurement of technology is premised on the need to identify tight, detailed specifications and requirements. UtiliWorks will conduct discovery with the project stakeholders to develop specifications based on CVWD's business goals, objectives, current situation, and plans for future changes. Findings from the requirements workshops and the AMI strategic planning and roadmap phase, will be utilized in conjunction with our findings on known system requirements and documentation to arrive at a "foundational" set of requirements for CVWD. The following topics and questions will be addressed that will roll up to the RFP document:

- Functional Requirements – What does CVWD want this new technology to do?
- Telecommunications Requirements – Does CVWD have existing structures to mount communications equipment? What backhaul methods are available?
- Business Requirements – What business needs are fulfilled by an AMI Program?
- Integration Requirements – How does CVWD want this new technology to interface with other systems?
- Performance Requirements – What measures of performance should be specified in the RFP / Scope of Work for the vendor to satisfy the business requirements?
- Reporting Requirements – What types of reports and reporting tools will the District need to optimize the information?

Deliverables: AMI, MDMS, Customer Engagement Platform, and Installation Requirements and Specifications workbooks (.xls)*

Task 3 – RFP Draft Scope of Work

UtiliWorks will prepare the RFP Scope of Work with the intent to provide the vendor community with essential information to prepare a robust response that is tailored to the District. UtiliWorks will incorporate the SOW into CVWD's standard RFP boilerplate and review with the District team (including purchasing and legal) to ensure that all requirements are accurately reflected. It is anticipated that there will be several iterations for the RFP draft until we reach the point where the RFP is complete and acceptable for publication. UtiliWorks will also compile a comprehensive list of potential proposers that would represent viable options to satisfy the goals and requirements of the District.

Deliverables: Publish-ready RFP (.doc), Vendor List and Contact Information (*.xls)*

Exhibit B – Cost

Fees

The services in this task order are for a fixed fee, not to exceed price of $28,900 for this scope of work which is inclusive of all services and estimated travel. Travel is estimated at 3-person trips, to be billed at cost, not to exceed $4,500.

UtiliWorks will invoice CVWD monthly based on progress against percent of task completed. Travel will be billed monthly at actual cost. Details are outlined in the table below.

Tasks	Fee
Task 1 - Kickoff & Procurement Strategy	$6,400.00
Task 2 – Requirements and Specifications	$8,400.00
Task 3 – RFP Development	$9,600.00
Travel and Expenses Estimate (NTE)	$4,500.00
Total	**$28,900.00**

CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 4

To: Engineering Committee — April 26, 2019

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

Subject: **FY 19/20 Capital Improvement Project (CIP)Program**

DISCUSSION:

Staff and Board have been discussing the FY 19/20 CIP program at the last few Board meetings with respect to the number of projects, project funding options (i.e. water rate increase, Pay Go, Debt Financing etc.). The attached FY 19/20 CIP program priority list and estimated costs is based on a 7% water rate increase and transfer of the MTBE reserve fund for review and discussion from the Engineering Committee. In addition, it has been suggested to assemble a Board CIP workshop to further discuss projects, priority and funding options.

SUMMARY - The following is a summary goals, objectives and projects for the FY 19/20 CIP program:

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 which has been ongoing since 1998

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. 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.
   2. 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.
   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 $105,000 for FY 19/20.

Task No.	Task	CVWD Staff	John Robinson Consulting	Wood Environment & Infrastructure Solutions	Lagerlof, Senecal, Gosney & Kruse	Total
1	Meeting with Stakeholders:	$4,000	$5,000	$15,000	$0	$24,000
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	$2,000	$23,000
4	Grant Funding:	$4,000	$15,000	$10,000	$2,000	$31,000
	Total	$15,000	$31,000	$45,000	$14,000	$105,000

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 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.

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

Cost Estimate: - $535,000 for FY 19/20.

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.

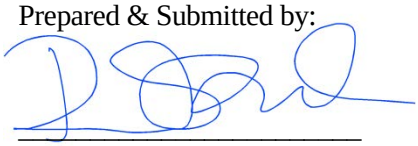
Project Schedule: - Site Assessment and topographic survey by January 2020; complete design and specifications by May 2020 and advertise for bids in June 2020. Staff anticipates construction to be start and be completed in FY 20/21.

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

RECOMMENDATION:

It is staff's recommendation \to assemble a Board CIP workshop to further discuss projects, priority and funding options.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. FY 19/20 CIP Program Priority List & Cost Summary
2. 5-year CIP Cost Summary

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Crescenta Valley Water District

FY 19/20 Capital Improvement Project Priority List

Transfer MTBE Funds; No Bond/Debt; 7.0% Water Rate increase

Capital Improvement Project Program	Budget FY 19/20	Category	Priority Level	Cumulative Estimated Costs	Project Description
Well 11 & 14 Rehabilitation	**$ 190,000**	**Water Supply**	1	$ 190,000	**Remove & Inspect Well Pump & Casing, Chemical Treatment Well Casing, Pump Test, New Pump & Motor** Increase Well Capacity for 2 wells
Markridge - Roof/Air Vents/Recoat	**$ 475,000**	**Water Storage**	2	$ 665,000	**Reservoir Rehabilitation** - Structural Repairs and Re-coating at Markridge Reservoir during low demand (Winter) season
3200 & 3300 Blocks of Brookhill - 1,485 LF	**$ 590,000**	**Water Distribution**	3	$ 1,255,000	**Replace 71 year old 4" pipeline** with a new 8-inch water main with new fire hydrants - 1,485LF
2400 & 2500 Block of Janet Lee - 1,300 LF	**$ 525,000**	**Water Distribution**	4	$ 1,780,000	**Replace 67 year old 6" pipeline** with new 8-inch water main and replace water services with yoke assemblies (part of water meter replacement program) - 1,300 LF
Boosters - Glenwood 32 & 33	**$ 75,000**	**Water Distribution**	5	$ 1,855,000	**Replace Glenwood Booster 32 & 33** with new 800 gpm pump assembly and 40 HP motor
AMI - Conversion of 3/4" to 4" Meters to Smart Meters	**$ 535,000**	**Technology**	6	$ 2,390,000	**Installation of AMI Fixed Area Network**, programming, integration and testing of selected areas
Rehabilitation Surge Tank at Glenwood	**$ 75,000**	**Water Distribution**	7	$ 2,465,000	**Rehabilitation surge tank** including replacement of piping & appurtenances and recoating of interior
SCADA RTU Replace - Equipment & Integration	**$ 300,000**	**Technology**	8	$ 2,765,000	**Replacement of SCADA System** - Replacement of RTU/PLC Equipment
Repairs to Ramsdell Mixing Station	**$ 165,000**	**Water Distribution**	9	$ 2,930,000	**Installation of a new Pressure Reducing Station** from Zone 2 to Zone 1 to help with isolating Zone 1 & Encinal Reservoir
Reservoir Mixing System Design & Construction	**$ 145,000**	**Water Storage**	10	$ 3,075,000	**Installation of Reservoir Mixing equipment** to maintain chloramines within the reservoirs - 9 sites
Stormwater Recharge Project - Planning & Design	**$ 105,000**	**Water Supply**	11	$ 3,180,000	**Preliminary Design, Grant Application and Coordination** with stakeholders for Proposed Stormwater Recharge Project at CVC Park
Williams Reservoir Site Improvements	**$ 120,000**	**Facilities & Planning**	12	$ 3,300,000	**Planning and Design of site improvements at Williams Reservoir** to control drainage and better utilization of the property for storage of materials and equipment
FY 19/20 - Preliminary Budget - Projects 1- 12 - 7.0% Increase					

Capital Improvement Project Program 5- year CIP Program Date: 4/26/19	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
1. Water Supply											
A. Groundwater											
i. Well Rehabilitation											
Well 7 Rehabilitation											
Well 8 Rehabilitation	$ 3,453										
Well 5 Rehabilitation	$ 69,388										
Well 10 Rehabilitation	$ 76,008										
Well 1 Rehabilitation		$ 65,000	$ -	$ 70,200	$ 70,200						
Well 7 Rehabilitation		$ 65,000	$ -	$ 70,200	$ 70,200						
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
ii. New Wells											
Re-Activate Well 2 - Design	$ 99,746	$ -									
Re-Activate Well 2 - Construction	$ 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
iii. Studies											
B. Imported Water											
Ocean View - Final	$ 43,459	$ -	$ 2,819	$ 1,181	$ 4,000						
C. Groundwater Basin Recharge											
Stormwater Recharge Project - Planning & Design						$ 105,000	$ 360,000	$ 2,560,000			
D. Recycled Water System											
WS Total	$ 2,293,647	$ 535,000	$ 357,208	$ 338,581	$ 695,789	$ 295,000	$ 570,000	$ 4,030,000	$ 1,130,000	$ 665,000	$ 2,075,000
2. Water Storage											
A. Reservoir Rehabilitation											
i. Steel Reservoir Re-Coating/Roof/Vents Rehabilitation											
Oak Creek #1 & #2 - Roof/Air Vents/Recoat	$ 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
ii. Concrete Reservoir Rehabilitation											
Encinal Reservoir - Concrete Rehabilitation								$ 175,000			
Ocean View Reservoir - Concrete Rehabilitation									$ 175,000		
iii. Corrosion Protection											
Cathodic Protection Inspection & Replacement											$ 130,000

Capital Improvement Project Program 5- year CIP Program Date: 4/26/19	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
B. Reservoir Water Quality											
i. Water Mixing System											
Reservoir Mixing System Design & Construction						$ 145,000	$ 175,000				
iv. Replace common inlet and outlet piping											
C. New Reservoir Water Storage											
WS Total	$ 502,096	$ 514,800	$ 8,325	$ 484,000	$ 492,325	$ 620,000	$ 725,000	$ 175,000	$ 175,000	$ 700,000	$ 830,000
3. Water Distribution											
A. Pipeline Replacement											
Lower Pickens Canyon Crossing & Slope - 600 LF	$ 90,702	$ -	$ 2,976	$ -	$ 2,976						
4200 - 4400 Block - Penn - 1,450 LF	$ 224,130										
2700 Block - Brookhill - 800 LF	$ 120,088	$ 94,600	$ 132,569	$ 40,600	$ 173,169						
5100 Block of La Crescenta - 400 LF	$ 53,832	$ 42,900	$ 59,428	$ 18,200	$ 77,628						
3000 Block of Brookhill - 800 LF	$ 120,088	$ 94,600	$ 132,569	$ 40,600	$ 173,169						
3100 Block of Brookhill - 800 LF	$ 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
C. Booster Pump System											
i. Annual Pump /Motor Replacement											
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
ii. Pump Station Upgrade											
Upgrade - Paschal Booster Station manifold & outlet piping											
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		
Surge Analysis Study											

Capital Improvement Project Program 5- year CIP Program Date: 4/26/19	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
iii. Misc.											
Repairs to Ramsdell Mixing Station	$ 16,737	$ -	$ 2,869	$ 2,131	$ 5,000	$ 165,000	$ 435,000				
Street Rehabilitation - Pennsylvania Ave		$ -	$ -	$ 65,000	$ 65,000						
Mills Plant - Aeration Tower Rehabilitation							$ 75,000				
WD Total	$ 752,685	$ 326,700	$ 490,285	$ 207,131	$ 697,416	$ 1,430,000	$ 1,760,000	$ 1,690,000	$ 2,595,000	$ 2,345,000	$ 295,000
4. Water Treatment											
A. Nitrate Removal											
i. Glenwood											
Replace Ion Exchange Resin at Glenwood											$ 500,000
ii. Mills											
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
5. Technology											
A. Automated Meter Information (AMI) System											
AMI - Conversion of 3/4" to 4" Meters to Smart Meters						$ 535,000	$ 845,000	$ 380,000	$ 495,000	$ 485,000	
B. Supervisory Control and Data Acquisition (SCADA) Syster											
SCADA RTU Replacement (35 sites) - Design											
SCADA RTU Replace - Equipment & Integration	$ 13,193					$ 300,000	$ 300,000				
C. Graphical Information System (GIS)											
TECH Total	$ 13,193	$ -	$ -	$ -	$ -	$ 835,000	$ 1,145,000	$ 380,000	$ 495,000	$ 485,000	$ -
6. Public Safety/Emergency Response											
A. Emergency Electrical Generators											
New Emergency Electrical Generator - Field									$ 75,000		
B. Water Storage											
Dunsmore/Pickens - Seismic Sensors & Valve Actuators	$ 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	$ 12,689	$ -	$ 199	$ 4,801	$ 5,000	$ -	$ -	$ 105,000	$ 180,000	$ 125,000	$ -

Capital Improvement Project Program 5- year CIP Program Date: 4/26/19	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
7. Facilities & Planning											
A. Main Office											
Expansion with New Roof with Solar Panels								$ 125,000			
D. Reservoir Site Improvements											
Williams Reservoir Site Improvements						$ 120,000	$ 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
5. Misc. Properties											
6. District Planning											
F & P Total	$ -	$ -	$ -	$ -	$ -	$ 120,000	$ 300,000	$ 275,000	$ 250,000	$ 300,000	$ 250,000
Capital Improvement Projects - Total	$ 3,574,310	$ 1,476,500	$ 1,045,065	$ 1,775,465	$ 2,820,530	$ 3,300,000	$ 4,500,000	$ 6,655,000	$ 5,025,000	$ 4,620,000	$ 3,950,000

5-Year Capital Improvement Project Summary

1. Water Supply	$ 2,293,647	$ 535,000	$ 357,208	$ 338,581	$ 695,789	$ 295,000	$ 570,000	$ 4,030,000	$ 1,130,000	$ 665,000	$ 2,075,000
2. Water Storage	$ 502,096	$ 514,800	$ 8,325	$ 484,000	$ 492,325	$ 620,000	$ 725,000	$ 175,000	$ 175,000	$ 700,000	$ 830,000
3. Water Distribution	$ 752,685	$ 326,700	$ 490,285	$ 207,131	$ 697,416	$ 1,430,000	$ 1,760,000	$ 1,690,000	$ 2,595,000	$ 2,345,000	$ 295,000
4. Water Treatment	$ -	$ 100,000	$ 189,048	$ 740,952	$ 930,000	$ -	$ -	$ -	$ 200,000	$ -	$ 500,000
5. Technology	$ 13,193	$ -	$ -	$ -	$ -	$ 835,000	$ 1,145,000	$ 380,000	$ 495,000	$ 485,000	$ -
6. Public Safety/Emergency Response	$ 12,689	$ -	$ 199	$ 4,801	$ 5,000	$ -	$ -	$ 105,000	$ 180,000	$ 125,000	$ -
7. Facilities & Planning	$ -	$ -	$ -	$ -	$ -	$ 120,000	$ 300,000	$ 275,000	$ 250,000	$ 300,000	$ 250,000
Capital Improvement Projects - Total	$ 3,574,310	$ 1,476,500	$ 1,045,065	$ 1,775,465	$ 2,820,530	$ 3,300,000	$ 4,500,000	$ 6,655,000	$ 5,025,000	$ 4,620,000	$ 3,950,000

CRESCENTA VALLEY WATER DISTRICT
STAFF REPORT

Information Item No. 5

To: Engineering Committee April 26, 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 delivery of equipment and materials including the precast concrete vault which will be delivered on May 3, 2019. CVWD's crews are working on installing the ammonia equipment at the Mills Plan and the Glenwood Plant, which should be completed by the end of May 2019.

   Staff and its consultants are also working with the Division of Drinking Water (DDW) to amend the District's permit to operate should be completed by the end of May 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. Staff has discussed their 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 July 2019.

   04/26/19 Project Update:
   - Equipment and materials ordered and delivered
   - Construction at Mills Plant & Glenwood Plant – May 2019
   - Water Main – Dead-End Flushing complete May 10, 2019
   - DDW approval – anticipated in May 2019
   - Installation of Chlorine Analyzers at 6 sites – April - May 2019
   - Tentative Date – Conversion to Chloramines – June or July 2019

2. **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 with 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.

   04/26/19 Project Update:
   - Oak Creek Reservoir #2 – Project Complete
     - Back in Service – 4/9/19
     - Final Retention

3. **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 returned with comments from DDW on 2/12/19. APTwater and staff have been working on responding to comments, which included providing an Operations & Maintenance Manual. Staff resubmitted to DDW on April 3, 2019, and it anticipates DDW will approve the system by the end of May 2019. In addition, APTwater has been training CVWD's water operations staff over the past few weeks to take over operations and maintenance.

4. **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 specifications were completed in early December 2019 and a contract was awarded to General Pump Company in January 2019 for $127,000.

   04/26/19 Project Update:

   - Construction – Well 1
     - Completed and back in service – April 15, 2019
     - Well production at 95 gpm, 12% increase
     - Static Well level rose by 17.75' after cleaning of casing
     - Pump Well level at 52' above the pump bowls after cleaning; 10' above the pump bowls before cleaning. Increased pump efficiency
   - Construction – Well 7 – To start by May 3, 2019 and completed by June 14, 2019

5. **Stormwater Capture Project, Project E-985** – John Robinson Consulting (JRC) has been assisting CVWD and their consultant, Wood Environmental with developing a conceptual plan to depict the planned facilities at CVC Park that will include:
   - Tier 1 - Infiltration galleries beneath the ball field area and parking areas, including piping from the Verdugo Wash
   - Tier 2 - Conversion of the southern end of Dunsmore Avenue to a "green street," including improved drainage, bioswales, and other improvements,
   - Tier 3 - Native plant demonstration garden in the southeast end of the park
   - Tier 4 - Park improvements to ball field, basketball court and picnic areas

   The next steps will be to complete the conceptual plan, prepare a preliminary construction cost estimate and economic analysis for review at the next Engineering Committee meeting.

   04/26/19 Project Update:

   - Preliminary Conceptual Plan – to be reviewed at 4/12/19 Engineering Committee meeting.
   - Meet with City of Los Angeles to discuss storm water rights within the Verdugo Basin.
   - Meet with Stakeholders (County of Los Angeles Department of Parks & Recreation and Department of Public Works, City of Glendale, and CV Town Council) for input and comments.
   - Develop a project schedule for design, review, approvals and construction.
   - Develop a list of potential project funding options.

Prepared & Submitted by:

David S. Gould, P.E.
District Engineer

Attachment:

1. FY 18/19 – Project Cost Summary