

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

To be held on
March 3, 2022 at 3:00 PM

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

Posted March 2, 2022 at 3:00 PM

TELECONFERENCING NOTICE

Under AB 361 and District Resolution No. 772, the District will continue to hold Board and Committee meetings by teleconference, due to the continuing State of Emergency for COVID-19 and the ongoing imminent risks to the health or safety of the attendees from COVID-19.

[This meeting will be held by teleconference only.]

Any member of the public may participate using a touchtone phone. You may select any of the following phone numbers (there are more than one for increased reliability during this time of increased phone traffic)

(669) 900-6833

(346) 248-7799

(929) 205-6099

(253) 215-8782

(301) 715-8592

(312) 626-6799

Then, enter Access Code: 894 8571 9053

[Pursuant to the above Executive Order, the public may not attend the meeting in person]

Those members of the public who are able to and would like to additionally participate with a computer through videoconference may access the Zoom videoconferencing tool available at the following link –<https://us02web.zoom.us/j/89485719053>

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at customerservice@cvwd.com. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Call to Order

Adoption of Agenda

Public Comment:

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. Under the provisions of the Brown Act, the Board is prohibited from taking action on items not listed on the agenda, except under certain circumstances.

Action Items

The public shall have an opportunity to comment on any action item as each item is considered by the Committee. This opportunity is non-transferrable, and speakers are limited to one two-minute (2) comment each.

1. Discussion of the Replacement of the Supervisory Control and Data Acquisition of SCADA System, Project E-939
2. Discussion of Annual Well and Pump Maintenance Service Contract
3. Update of FY 21/22 CIP Budget and Schedule

Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – TBA

Adjournment

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 1

March 3, 2022

To: Engineering Committee

From: David S. Gould, P.E. – Director of Engineering & Operations

Subject: Replacement of Supervisory Control and Data Acquisition (SCADA) System, Project E-939

INFORMATION ITEM

Discussion of the Replacement of the Supervisory Control and Data Acquisition of SCADA System, Project E-939

BACKGROUND:

CVWD has an existing SCADA system with Programming Logic Controllers (PLCs) and Remote Terminal Units (RTUs) that are installed at each of the District's facilities. These components fulfill critical operational functions including (but not limited to):

- Transmitting data that provides real-time status on the water distribution system
- Allowing for remote control of the water system (e.g., booster pumps and wells)
- Detecting when operational thresholds or designated operational settings are met
- Notifying key operations staff through system alarms when water system parameters are exceeded or when a shutdown occurs due to a power failure

Staff had included this project as part of the FY 21/22 CIP program to upgrade the SCADA system with newer equipment and programming based on industry standards, which is "open source". Once the project is complete, future SCADA maintenance and upgrades can be repaired and/or replaced by a variety of consultants and contractors, as opposed to proprietary programming by a single consultant, which creates time and cost inefficiencies and encourages competitive pricing. The upgrade will also fully integrate system data into the existing monitoring screens located on the main computers at the Glenwood Plant.

Staff discussed this item in detail at the July 20, 2021, Engineering Committee (see attached staff report). It was recommended to move forward with a pilot program at Well 8 and Well 14. The pilot program was utilizing a collaborative workplan between Apex Manufacturing Services (APEX) on the design, and CVWD performing various parts of the installation.

DISCUSSION:

Staff initiated the pilot project in September 2021 and the workplan included the following:

- Building and installing new equipment
- Re-designing the SCADA open-source programming based on current and future operating conditions
- Documenting standard programming in an understandable and easy-to-use format
- Integrating the data into the existing SCADA system

The pilot conversion of SCADA upgrades was successfully completed in December 2021, which included on-site installation of the equipment and integration into the system.

The main goal of the pilot project at the two sites was to work through the details on all equipment, programming, and the integration into Wonderware (SCADA monitoring software); to gain a better understanding of the process with respect to time and costs. The budget estimate for the pilot project was \$35,000 and the final costs were recorded at \$38,500.

Next Steps:

The next step will be to take this information from the pilot program and provide an estimate of the costs and time frame to complete the remaining upgrades to the new system. Staff reviewed the remaining 25 sites with respect to new equipment needed, APEX programming, integration time, and CVWD staff time to complete the project which is shown below.

Task	No. of Sites	Avg. cost/site	Estimate of Cost	Comments
Equipment, Materials & Supplies	25	\$11,376	\$284,400	<u>Example:</u> Well Sites about \$7,000/ea. & Larger sites like Glenwood are about \$25,000/ea.
APEX - Programing & Integration	25	\$13,378	\$334,460	<u>Example:</u> Well Sites about 80 hours/ea.& Larger sites like Glenwood are about 160 hours/ea.
CVWD	25	\$1,846	\$46,140	<u>Example:</u> Well Sites about 40 hours/ea. & Larger sites like Glenwood are about 80 hours/ea.
Subtotal			\$665,000	
Contingency		10%	\$66,500	
Total			\$731,500	

Staff reviewed the overall project schedule to complete the upgrades relative to this year and next fiscal year CIP budgets. After discussion with the SCADA team, it was estimated that it will take about 14 to 16 months to complete the entire project. The project costs will fall within FY 21/22 & FY 22/23, and the final project close-out will be completed in FY 23/24.

The table below shows the breakdown of costs per fiscal year budget. Staff is planning to order most of the equipment for the sites before the end of FY 21/22 since the vendors for the equipment have indicated that there may be some savings with a large equipment order. Also, staff is aware of and will need to accommodate long lead times for the equipment, which have been estimated to be 10 to 12 weeks.

Task	% Complete	FY 21/22	% Complete	FY 22/23	% Complete	FY 23/24	Total
Equipment, Materials & Supplies	80%	\$227,520	20%	\$56,880	0%	\$-	\$284,400
APEX - Programing & Integration	25%	\$83,615	70%	\$234,122	5%	\$16,723	\$334,460
CVWD	25%	\$11,535	70%	\$32,298	5%	\$2,307	\$46,140
Subtotal		\$322,670		\$323,300		\$19,030	\$665,000
10% Contingency		\$32,267		\$32,330		\$1,903	\$66,500
Total		\$354,937		\$355,630		\$20,933	\$731,500

RECOMMENDATION:

It is staff's recommendation to the Engineering Committee for staff to proceed with finalizing the project costs for new equipment from Royal Industrial Solution. Once this cost is finalized, it is also staff's recommendation to bring this item to the next Board meeting for approval.

Prepared & Submitted by:



David S. Gould, P.E.

Director of Engineering & Operations

Attachment:

1. Engineering Committee Staff dated July 20, 2021
2. Apex Manufacturing Solutions Proposal dated February 25, 2022

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 1

July 20, 2021

To: Engineering Committee
From: David S. Gould, P.E. – Director of Engineering
Subject: **Replacement of Supervisory Control and Data Acquisition (SCADA) System, Project E-939**

BACKGROUND:

CVWD has an existing SCADA system with Programming Logic Controllers (PLCs) and Remote Terminal Units (RTUs) that were installed at each of the District's facilities that transmits information on the status of the water system, provides for the ability to remotely control the booster pump operation, and sends out system alarms to the System Operators when the water system parameters have been exceeded.

The existing RTU & PLC hardware, software, and programming were manufactured and installed by Tesco Controls Inc (Tesco) in 1996. As these devices were commissioned more than 25 years ago, they are nearing the end of their serviceable life and are increasingly hard to support as we move towards the future. Additionally, any modification to the programming of these devices or upgrades to the PLCs/RTUs can only be done by a representative from Tesco as the equipment and programming are proprietary to Tesco. This was very common during the development of SCADA equipment at that time. However, this process has become both time consuming and expensive for CVWD.

The existing Tesco SCADA system is outdated and needs to be modernized to meet today's goals. Staff has worked with Tesco to update programming over the years. However, the existing software platform, from 1996, has become obsolete and caused temporary outages, resulting in a significant increase in overtime labor hours needed to correct it and an appreciable loss in operational resiliency.

In 2018 CVWD initiated a system-wide SCADA review to identify a strategy for upgrading the current hardware and software to a modern version that applies best management principles and includes:

- Open architecture for programming and integration that a variety of consultants and vendors can more easily support.
- Utilization of an "off-the-shelf" industry-standard system for all components.
- Implementation of enhanced remote support capabilities.
- Provide support for basic remote site development.

As a result of the system-wide review, CVWD selected a new programmable automation controller, and supporting hardware, manufactured by Allen Bradley (A/B). A/B is the brand name for a line of factory automation equipment owned by Rockwell Automation, which has been part of the water/wastewater industry for decades. The hardware and programming logic for A/B equipment uses standard protocol that can be serviced by any certified technician or programmer.

Staff has also been working with Apex Manufacturing Services (APEX) for the past year on the installation of new A/B equipment that it used to collect limited data at specific sites, reset the radio communication controls, and for future control of the new sodium hypochlorite and liquid ammonia injection pumps required for chloramination. Currently, the existing Tesco SCADA system is working in parallel with the A/B equipment until the new A/B system is ready to fully implement.

It is Engineering and Operation's goal, as part of the FY 21/22 CIP program, to upgrade the SCADA system with newer equipment and programming based on industry standards, which can be repaired and/or replaced by a variety of consultants and contractors. This will also include integrating the data into the existing monitoring screens located on the main computers at the Glenwood Plant.

DISCUSSION:

As part of the planning process, staff reviewed several preliminary options and project schedules to accomplish the goal of upgrading CVWD's SCADA system by the end of 2022. Options included 1) working directly with APEX on the design, and CVWD's crews performing the work to install the system 2) using a consultant for the design and a contractor to install the system, 3) using a contractor to design/build the system, and 4) performing a pilot project at two (2) sites to work through the details on equipment, programming, and integrating into Wonderware (SCADA monitoring software) to gain a better understanding of the process with respect to time and costs. Attachment No. 1 shows a preliminary project schedule for each Option.

The preliminary schedules show that Options 1, 3 & 4 could be completed before the end of 2022 to meet our goal, and Option 2 would be completed towards the end of 2023. Staff proceeded to look further into Options 1, 3 & 4 as the next step. A concern that was brought up internally was that staff has not had any in-depth experience with replacing a SCADA system, and the additional time that may be needed for both CVWD crews, operations, and engineering for the design and installation.

After much consideration, staff determined that Option 4 (Pilot Program) would allow staff and APEX to work together on the programming and installation at a smaller scale and allow the team to get a better idea of the time and costs involved in the upgrade. The two (2) sites that we are looking at are Well 8 and Well 14 since these sites are close to the Glenwood Operations Facility and have a relatively small number of monitoring components such as flow, water level, pressure, and controls. Also, the programming and integration into the CVWD master computers could be used as a template for the other well sites.

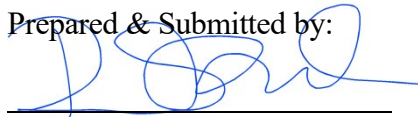
Project Budget:

Staff had budgeted \$610,000 for FY 20/21 and \$104,033 had been spent to date. For Budget FY 21/22, the Board approved a budgeted amount to \$374,000 as staff anticipated that a portion of the project will be completed in FY 20/21. The pilot program will allow staff to prepare a detailed budget for review at future Engineering Committee for any budget adjustments.

RECOMMENDATION:

Staff requested a quote from APEX for the programming, integration, and purchase of new equipment from Royal Industrial Solution, supplier of A/B equipment. The preliminary estimated cost for the pilot program will be \$35,000, and this project would be wrapped into the overall SCADA system project. It is Staff's recommendation to proceed with the pilot project and bring this item to the next Board meeting for approval.

Prepared & Submitted by:



David S. Gould, P.E.
Director of Engineering

Attachment:

1. Project Schedule Options



Apex Manufacturing Solutions

300 E. Mallard Drive
Suite #300
Boise, Idaho 83706
Phone: 208.344.5535

www.apexmfgsolutions.com

Date:	25 February 2022		
Customer:	Crescenta Valley Water District		
Customer Contact:	David Gould	Phone:	(818) 248-3925
Project:	CVWD0033 – Tesco RTU Replacement		
Apex Contact:	Donald Helvie	Phone:	(208) 344-5535 Ext. 212 (Office) (208) 921-4107 (Cell)

SERVICE SUMMARY

Thank you for the opportunity to submit this proposal to the Crescenta Valley Water District (CVWD). This proposal is a Time and Materials (T&M) estimate for Apex to coordinate the replacement of twenty-five (25) Tesco Remote Terminal Units (RTU). These RTUs will be replaced with units based upon Allen Bradley processors and will be integrated with the existing Aveva InTouch-based Supervisory Control And Data Acquisition (SCADA) system. This project will rely heavily upon techniques and standards developed during the pilot phase. This pilot project resulted in the elimination of Tesco RTU at Well 8 and Well 14.

Apex is pleased to offer our knowledge and expertise and we are dedicated to providing you with the resources, talent, and skill needed to ensure your success with this project. Upon your approval, we will engage with you and others on your team and work to ensure we meet your expectations. Thank you again for this opportunity and please do not hesitate to contact me if you have further questions or comments.

Regards,

Donald Helvie
Senior Systems Engineer
Mobile: (208) 921-4107
Office: (208) 344-5535 Ext 212
don.helvie@apexmfgsolutions.com





Tesco RTU Replacement

Apex Project Number CVWD0033
25 February 2022

Project Description

The Crescent Valley Water District (CVWD) employs several Tesco processor-based RTUs to collect field condition indications and control field devices critical to the operation of the water supply system. Some of these RTU's were commissioned as much as 25 years ago. The age of these devices combined with their proprietary nature makes support as well as development efforts both difficult and expensive.

In the latter part of 2021 Apex and CVWD completed a Tesco RTU replacement pilot project. The objective of this project was to replace the Tesco RTU's at Well 8 and Well 14 with Allen Bradley-based RTUs. These RTUs utilized the previously developed design and were integrated with the existing SCADA system requiring minimal modification. All functional aspects of these sites were retained including active device control, process monitoring, and condition historization.

As in the pilot project, Allen Bradley (AB) processors will be used as the core of the replacement system at each site. Techniques and standards developed during the pilot phase and earlier projects will be utilized to reduce required development and to maintain consistency. A phased approach will be utilized to allow the remainder of the system to continue to operate while each site is upgraded. This approach will be combined with careful planning and communication to reduce downtime and possible impact upon end customers.

Although the primary objectives of this project do not include upgrading or modifying the existing SCADA application, modifications will be made as required. These modifications will also conform to previously developed design standards.

AB processors were previously commissioned at several of these sites as a part of radio network stabilization efforts. Where possible, the function of these processors will be expanded rather than commissioning new processors resulting in significant hardware savings. Additional hardware savings will be realized by retrofitting existing control cabinets rather than replacing them.

Carefully developed documentation regarding each site will be provided. This documentation will include a clear description of normal site operation as well as a comprehensive list of field devices. Detailed electrical schematics will support both efficient troubleshooting as well as future expansion.

At the conclusion of this project, all control and monitoring functions will be migrated away from Tesco processors and to Allen Bradley processors. All replaced Tesco hardware will be removed.

This project will include both onsite and remote activities. This proposal includes having an Apex resource on site for up to fourteen (14) five-day work weeks. Due to previous investment in system components supporting remote access and the ready availability of local electrical support, much of the programming and integration work will be performed remotely.

Project Constraints & Assumptions

This proposal incorporates the following project constraints and/or assumptions. Additional constraints or assumptions may be included within Work Packages described in Appendix A.

- Work will be performed both onsite and remotely. Full remote access via TeamViewer is assumed to be available.
- Although downtime is expected to be brief, downtime will be required. This downtime will be carefully coordinated to minimize impact.
- All hardware will be acquired, installed, and commissioned by customer personnel
- All hardware to be decommissioned will be disconnected and removed by customer personnel
- RTU backplanes will be built according to the previously developed design by customer personnel.
- This project will utilize existing program constructs such as graphic interfaces, Rockwell UDTs and AOIs where possible. These objects may require enhancements that will result in the creation of newer versions.
- Proposal assumes the customer will be responsible for the following unless it is explicitly included as part of a work package:
 - Supply all required project hardware, tools and software licensing
 - Server and/or workstation configuration or maintenance (e.g. OS loading, network configuration, etc.)
 - Installation, mounting or wiring of equipment of hardware of any kind, including electrical, mechanical, chemical, network, etc.
- Customer shall ensure that qualified and appropriate staff are readily available to support Apex with all aspects of the project's design, development, testing and deployment
- Apex will provide branded development toolkits required for project execution that are not intended for delivery to customer as part of the project deliverables (e.g. Rockwell or Siemens development software, Wonderware development software, etc.) unless otherwise specified within the proposal.
- Prior to system start-up or commissioning, the client shall confirm that:
 - Client-owned equipment, hardware and software is properly installed, mounted, and wired according to the manufacturers' specifications and conforms to applicable trade and safety codes.
 - In the case of equipment and hardware, client shall ensure the appropriate technical support staff (electrical, mechanical, maintenance, etc.) are available to quickly resolve installation, mechanical, or electrical errors.
 - In the case of software, client shall ensure that appropriate information technology resource(s) are readily available to resolve any installation or infrastructure issues, and that all software applications are appropriately licensed.
- On-site time or return visits outside of those defined in this document due to lack of client system readiness, unavailability of support resources, etc. are subject to additional charges at our standard service and travel rates.

Project Risks

All projects include some element of risk, and most can either be mitigated or managed. Apex feels that the following risk factors are present in this project and believes it is important to bring these to the attention of the Crescenta Valley Water District. Where possible, Apex has included suggested means to mitigate these risks.

Identified risks for this project include:

- Although many control components will be upgraded during this project, some existing components will continue to be utilized. These components include sensors, drives, contactors, relays, and soft-start devices. Although every effort will be made to support these devices it is possible that some may not be compatible with the new architecture.
- This project will include system modifications at several levels including hardware, communication, control, and applications. During this process, equipment downtime will be required.
- The existing documentation (operational guidelines as well as electrical schematics) is outdated and in some cases non-existent.

Mitigation of these risks is best accomplished via the following practices:

- Frequent communication such as status review meetings and passdown documents
- The development and documentation of design and test plans
- A careful phased implementation plan including clearly identified fallback positions at each stage
- Clearly communicated schedule events for equipment downtime and production startup

Apex believes that these techniques will help to minimize detrimental impacts upon production activities and increase the overall success of the project.

Project Costing

Project costing is summarized in the following tables. Apex's standard terms & conditions are attached in Appendix "C" below.

Services						Cost
<i>RTU Replacement</i>						\$ 278,160.00
<i>- Quoted on a time & materials (T&M) basis</i>						
- Onsite Hours	696	Hrs. @	\$ 160.00	Hr. =	\$ 111,360.00	
- Offsite Hours	995	Hrs. @	\$ 160.00	Hr. =	\$ 159,200.00	
- PM Time	40	Hrs. @	\$ 190.00	Hr. =	\$ 7,600.00	
Subtotal Services Cost						\$ 278,160.00
Travel & Living Expenses (Estimated)						Cost
<i>RTU Replacement (14 Scheduled Trips)</i>						\$ 56,300.00
Subtotal Travel & Living Expenses						\$ 56,300.00
Total Project Cost						\$ 334,460.00

Project Payment Milestones:

- Client will be invoiced monthly for Services and Travel Expenses

Appendix A – Scope Of Work Details

RTU Upgrade Tasks (To be completed for each site)

- Activities to be completed prior to commissioning
 - Development of the following artifacts
 - Control Sequence Functional Description (CSFD)
 - HMI screen design
 - Electrical schematics for replaced components
 - Alarm listing
 - Test plan development
 - Field device monitoring
 - Field device control
 - Site-to-site communication
 - Site-to-central station communication
 - Alarm notification & callout
- RTU commissioning activities
 - Oversee RTU electrical / mechanical installation
 - PLC commissioning, programming, and testing
 - IO Checkout
 - HMI commissioning, programming, and testing
 - Site-to-site communication configuration and testing as required
 - Site-to-central station communication and testing
 - SCADA integration
 - InTouch application
 - Commission tags as required
 - Modify windows as required
 - Remove Tesco components
 - Remove obsolete tags
 - Alarm configuration
 - Aveva Historian
 - Commission tags as required
 - Remove obsolete tags
 - Alarm callout (TopView) integration & testing

Site and components to be upgraded

- **Mills Booster Pump Station**
 - Discharge Pump A (Non-reversing single speed)
 - Discharge Pump B (VFD)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Well 1
 - Well pump (Non-reversing single speed)
 - Well Level Transmitter
 - Discharge Pressure Transmitter
 - Discharge Flow Meter & Totalizer
 - Analyzers
 - pH (qty 2)
 - Residual Chlorine
 - Nitrate

- LAS Injection Skid
 - Tank Level Transmitter
 - Dosing Pumps (Qty 2)
- NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pumps (Qty 2)
- **Ordunio Booster Pump Station**
 - Discharge Pumps (qty 2 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Nitrate
 - Altitude valve position indication
 - Well 2
 - Well pump (Non-reversing single speed)
 - Well Level Transmitter
 - Discharge Pressure Transmitter
 - Discharge Flow Meter & Totalizer
 - LAS Injection Skid
 - Tank Level Transmitter
 - Dosing Pumps (Qty 2)
 - NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pumps (Qty 2)
 - APT nitrate plant is excluded from this project
- **Encinal Booster Pump Station**
 - Discharge Pumps (qty 4 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH (qty 2)
 - Residual Chlorine (qty 2)
 - Nitrate (qty 2)
- **Ramsdell Blending Station & Flow Control**
 - Pressure Meter
 - Flow Meter & Totalizer
 - Modulating Flow Valve
- **Well No. 5**
 - Well pump (Non-reversing single speed)
 - Well Level Transmitter
 - Discharge Pressure Transmitter

- Discharge Flow Meter & Totalizer
- Analyzers
 - pH
 - Residual Chlorine
 - Nitrate
- NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pumps (Qty 2)
- **Williams Booster Pump Station**
 - Discharge Pumps (qty 4 non-reversing single speed)
 - Discharge Flow Meter & Totalizer (Qty 2)
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine (qty 3)
 - Nitrate (qty 2)
 - Altitude Valve Position
 - Pressure Relief Valve Position (Qty 2)
 - NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
 - NH3 Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- **Well No. 7**
 - Well pump (Non-reversing single speed)
 - Well Level Transmitter
 - Discharge Pressure Transmitter
 - Discharge Flow Meter & Totalizer
- **Well No. 9**
 - Well pump (Non-reversing single speed)
 - Well Level Transmitter
 - Discharge Pressure Transmitter
 - Discharge Flow Meter & Totalizer
- **Paschall Booster Pump Station**
 - Discharge Pumps (qty 3 non-reversing single speed)
 - Discharge Flow Meter & Totalizer (Qty 4)
 - Discharge Pressure Transmitter
- **Well No. 11**
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter

- Analyzers
 - pH
 - Residual Chlorine
- NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- **Rosemont Booster Pump Station**
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Altitude Valve Position
 - Pressure Relief Valve Position (Qty 2)
- **Oak Creek Booster Pump Station**
 - Discharge Pumps (qty 4 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Nitrate
 - NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- **Eagle Canyon Booster Pump Station**
 - Discharge Pumps (qty 2 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Seismic Valve Position
- **Markridge Booster Pump Station**
 - Discharge Pumps (qty 5 non-reversing single speed)
 - Discharge Flow Meter & Totalizer (Qty 5)
 - Discharge Pressure Transmitter (Qty 3)
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine

- Seismic Valve Position (Qty 2)
- Pressure Relief Valve Position (Qty 2)
- **Goss Canyon Booster Pump Station**
 - Discharge Pumps (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Seismic Valve Position (Qty 4)
- **Cresta Heights Booster Pump Station**
 - Discharge Pumps (Qty 2 non-reversing single speed)
 - Discharge Flow Meter & Totalizer (Qty 2)
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Seismic Valve Position (Qty 2)
 - Pressure Relief Valve Position (Qty 2)
- **Edmund #1 Booster Pump Station**
 - Discharge Pumps (qty 2 non-reversing single speed)
 - Discharge Flow Meter & Totalizer (Qty 2)
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Seismic Valve Position
 - Altitude Valve Position
 - Pressure Relief Valve Position (Qty 2)
 - Analyzers
 - pH
 - Residual Chlorine
- **Edmund #2 Booster Pump Station**
 - Discharge Pumps (qty 2 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
- **Glenwood Booster Pump Station**
 - Discharge Pumps (qty 2 VFD, qty 1 non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Forebay Level Transmitter
 - Pressure Relief Valve Position
 - Air Compressor Run Status

- Analyzers
 - pH (qty 3)
 - Residual Chlorine (qty 2)
 - NO3
- Well 6
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Well Level
- Well 10
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Well Level
- Well 12
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Well Level
- Well 15
 - Discharge Pump (non-reversing single speed)
 - Discharge Flow Meter & Totalizer
 - Discharge Pressure Transmitter
 - Well Level
- Emergency Generator Transfer Switch Status
- NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- NH3 Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- **Pickens Canyon Tunnel & Reservoir**
 - Flow Meter & Totalizer
 - Reservoir Level Transmitter
 - Analyzers
 - pH (qty 3)
 - Residual Chlorine (qty 3)
 - NaOCl Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
 - NH3 Injection Skid
 - Tank Level Transmitter
 - Dosing Pump
- **Glendale/CVWD Interconnection**
 - Discharge Flow Meter & Totalizer (Qty 3)
 - Discharge Pressure Transmitter (Qty 2)
 - Modulating Valves (Qty 2)

- **Shields Reservoir**
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Seismic Valve Position
- **Dunsmore Reservoir**
 - Reservoir Level Transmitter
 - Analyzers
 - pH
 - Residual Chlorine
 - Seismic Valve Position

Nitrate Treatment Removal Plant

The nitrate treatment equipment located at the Glenwood facility may be upgraded as a part of this project. Although functional requirements are not completely clear 120 hours have been allocated to this upgrade.

Power Monitors

Power monitors exist at a few of the sites today and may be added at other sites as required. These devices are assumed to be Ethernet IP compatible devices requiring no field IO to support integration. These devices will be commissioned in locations already hosting Allen Bradley processors.

Seismic Valves

Several of the sites have previously commissioned seismic valves. These seismic valves provide position feedback and in some cases a test command. The locations of these devices will be identified during the design stage for each site to ensure that sufficient field IO is commissioned to support these devices.

Appendix B – Apex Manufacturing Solutions

We know that you have choices when it comes to systems integrators. Here are a few important facts that we think you should know about Apex.

Headquartered in Boise, Idaho, Apex is a privately owned, independent industrial automation and manufacturing services company. Since 2005, Apex has been dedicated to a few simple principles; provide an environment where it is fun to be part of the team, promote a culture of learning and opportunity, and do great work for our customers. Apex's core values are what enable our success and all Apexer's proudly believe the following:

- Integrity - We believe that integrity is anchored in honesty, trust and accountability.
- A Growth Mindset – We believe that continued success requires that we embrace change and growth, both personally and as a business.
- Expertise – We believe that customers deserve high quality, superior results that provide lasting value.
- Relationships – We believe that we must be clear about objectives; that all relationships must be mutually beneficial and are worthy of generous sharing without thought of return. That we will speak up if things are not going well and that we will fiercely support and protect these hard won connections with others.
- Sustainability – We recognize that success requires energy and enthusiasm; that we must be ready to collaborate and build on the momentum of success. That it's not about complying with what is minimally acceptable but about pushing for what is *totally awesome*.



As a third-party certified women owned business, Apex recognizes the commitment to supplier diversity that is embraced by corporations and government agencies today, and we can help add diversity to your supply chain.



Apex is a recognized Wonderware Endorsed System Integrator (ESI) Partner. The ESI Partner recognition is reserved for partners that Wonderware considers as "best-in-class". Of the thousands of integrators around the globe, less than 30 are recognized as "Endorsed". This means that Wonderware recognizes Apex's technical excellence and demonstrated ability to successfully deliver Wonderware-based solutions.



Apex is a Rockwell Recognized System Integrator. This factory recognition is reserved for partners that Rockwell considers as "best-in-class". This means that Rockwell recognizes Apex's proven technical excellence and demonstrated ability to successfully deliver automation and information solutions to manufacturing companies globally.



In 2018 Apex was recognized as one of the Best Places to Work in Idaho! Receiving an Honorable Mention Recognition, The Best Places to Work in Idaho winners, as chosen by their own employees, have demonstrated exceptional performance in the areas of Compensation and Benefits, Employee Growth and Development, Work-Life Balance, Workplace Environment and Company Management. Apex is proud to receive this public recognition of our commitment to our core values and to our employees!

Appendix C – Apex Standard Terms & Conditions

- 1. Agreement.** These Terms and Conditions, along with the attached proposal, constitute the entire integrated agreement between Apex Manufacturing Solutions (“Apex”) and Customer for the services, deliverables and project. These terms supersede all previous and contemporaneous agreements, proposals and representations, written or oral, concerning such matters. Any additional, conflicting or inconsistent Customer terms (whether set forth in a request for proposals, purchase order or acknowledgement or in any other document) are expressly rejected by Apex and are not a part of the agreement for the project.
- 2. Payment Terms.** Customer shall pay Apex within 15 days of the date of each invoice. If Customer fails to pay Apex by the required due date, unpaid invoiced amounts are subject to a late charge calculated at 1.5%, compounded monthly.
- 3. Travel and Living Expenses.** Travel and living expenses associated with the project shall be billed at actual cost, plus a 10% administrative fee.
- 4. Scope Changes.** During the course of the project, either Customer or Apex may request changes to the scope of the work. Such changes will be effective if the other party agrees to the change in writing or through its actions. If the agreed change results in greater or lesser cost, Apex’s compensation for the work will be adjusted accordingly.
- 5. Warranties.** For a period of one year, Apex warrants to Customer that all services will be performed in a workmanlike manner consistent with current and generally recognized standards in the industry. In no event will Apex be responsible for (a) any modifications to any services or deliverables made by anyone other than Apex; (b) damages caused by misuse, improper operation or improper or insufficient maintenance of any services or deliverables; (c) normal wear and tear; (d) any data loss or corruption or personal information data breach; or (e) any alleged defects in any services or deliverables that arise from Apex’s compliance with designs or other criteria or requirements provided by or through Customer. Deliverables not created by Apex are warranted only to the extent of the express written warranties of the manufacturer(s) of such items delivered to Customer by Apex as a part of the project. APEX MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ANY OTHER WARRANTIES (INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, TITLE/AGAINST INFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE) ARE EXPRESSLY DISCLAIMED TO THE FULLEST EXTENT PERMITTED BY LAW.
- 6. Remedies.** In the event Customer believes Apex owes a warranty obligation applicable to the services or deliverables, or has otherwise failed to comply with any other contract obligation, it must notify Apex in writing within 20 days of its discovery of such obligation and in no event later than 90 days after completion of the applicable services or deliverables. If Apex owes a warranty obligation, it will promptly commence to remedy and cure such default upon receipt of such notice from Customer at Apex’s own cost and expense or, at Apex’s option, will refund to Customer the portion of the compensation paid for any defective services or deliverables. Such performance by Apex is Customer’s sole and exclusive remedy in the event of a warranty obligation of Apex or any other failure of Apex to comply with its contract obligations.
- 7. Intellectual Property Rights.** Apex retains all rights, title and interest in its services and deliverables, including patents and copyrights; however, upon payment of the agreed compensation to Apex, Customer will be deemed to have been granted a non-exclusive, non-transferable, royalty-free, perpetual license to use the services and deliverables for the purposes contemplated in the proposal, except that third-party “shrink-wrapped” software or “off-the-shelf” hardware provided through Apex will be subject to Customer’s compliance, at its own costs, with all applicable manufacturer licensing requirements. Customer may not sell, sublicense, assign or transfer its license to the services and deliverables provided by Apex without the prior written consent of Apex, nor may Customer reverse engineer or make derivative works from the services or deliverables.

- 8. Force Majeure.** In the event that performance of the services and/or delivery to Customer of the deliverables is delayed by circumstances beyond the reasonable control of Apex (including without limitation changes to the scope of work, delays by Customer in providing information to Apex, fire, natural disasters, civil disturbances, acts of governmental authorities, labor disputes, unavailability of materials or shipping delays), Apex will promptly notify Customer of such circumstances in writing and Apex will be granted an equitable extension of the time to meet its obligations under the proposal.
- 9. Limitation of Liability.** In no event shall Apex be liable for any incidental, special, punitive or consequential damages of any kind, including without limitation loss of use, productivity, reputation, financing, business opportunities or profits. MOREOVER, TO THE FULLEST EXTENT PERMITTED BY LAW, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING WITHOUT LIMITATION BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE OR STRICT LIABILITY), IN NO EVENT WILL APEX'S TOTAL AGGREGATE LIABILITY RELATED TO THE SERVICES, DELIVERABLES OR PROPOSAL EXCEED THE AMOUNT OF COMPENSATION PAID BY CUSTOMER TO APEX FOR THE PROJECT.
- 10. Apex Status.** Apex is an independent contractor of Customer and will have sole charge over, and be solely responsible for, (a) the payment of its employees and subcontractors and (b) the means, methods, techniques and sequences used in the performance of the services and the creation of its deliverables. Both Apex and Customer assume that the industrial exemption applies to all services and the proposal, and Customer acknowledges that individuals not licensed as professional engineers may execute some or all of the services and create some or all of the deliverables.
- 11. Non-Solicitation.** To the fullest extent permitted by law, during the course of the Project and for one year thereafter, Customer agrees that it will not hire or retain, or offer to hire or retain, any of Apex's employees that have been involved in performing the scope of work, nor will Customer otherwise induce or seek to induce, directly or indirectly, any such Apex employees to leave Apex's employment.
- 12. Dispute Resolution.** In the event Apex and Customer cannot resolve any claim or dispute between them arising out of or related to the proposal or the scope of work through direct negotiations, such dispute shall be subject to arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. Such arbitration proceedings will be held in Boise, Idaho before a single arbitrator with experience in resolving disputes arising from information technology services. The prevailing party (as determined by the arbitrator) will be entitled to recover from the other party all costs incurred in resolving the dispute, including reasonable attorneys' and expert fees and the costs of arbitration. The arbitrator's award shall be final and may be entered as a judgment in any court with jurisdiction.
- 13. Suspension and Termination.** If Customer fails to comply with its obligations under the proposal or these Terms and Conditions (including without limitation the full and timely payment to Apex), Apex may, in addition to charging the late charge discussed in Section 2, provide written notice of such default to Customer and may thereafter suspend further performance until such default is cured by Customer. When such default is cured by Customer, the amount to be paid for the scope of work will be equitably increased to account for Apex's damages arising from such suspension (including without limitation demobilization and remobilization expenses and increased costs of performance), and the time for Apex to complete the scope of work will be equitably extended to account for such suspension. If Customer fails to cure such default within 30 days of its receipt of such notice from Apex, Apex may terminate its agreement with Customer by providing written notice to Customer, and in such an event, Customer will pay Apex for all portions of the scope of work performed (in whole or in part) through the date of such termination, Apex's demobilization expenses and other reasonable termination costs, the amount of expected overhead and profit Apex would have earned on the cancelled portions of the scope of work if not for Customer's default, and any collection costs incurred by Apex in obtaining payment for its services and deliverables from Customer.

14. Assignment. Neither Customer nor Apex may assign its respective rights and obligations under their agreement without the written consent of the other party. However, Apex may subcontract or delegate its work obligations to other persons or entities, but will nonetheless be responsible to Customer for the performance of the work as required by the proposal. Both Customer and Apex agree that there are no third-party beneficiaries to their agreement.

15. Choice of Law. The proposal and these Terms and Conditions will be governed by the laws of Idaho and of the United States of America (including the Federal Arbitration Act, 9 U.S.C. § 1, et seq. with respect to the parties' agreement to arbitrate any dispute arising out of or related to the proposal or the scope of work), without regard to rules governing choice or conflict of laws. Customer and Apex agree that the proposal is predominately for the performance of services, not for the sale of goods, and further agree that the United Nations Convention on Contracts for the International Sale of Goods will not apply to their agreement.

16. Savings Clause and Waiver. If any term of the proposal or these Terms and Conditions is found to be unenforceable, the remaining terms will remain in effect. The failure of either Apex or Customer to exercise any rights under their agreement will not be deemed a waiver of such right except as agreed in writing or as otherwise set forth in these Terms and Conditions.

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
March 3, 2022

To: Engineering Committee
From: Brook Yared, M.S., P.E. – Engineering Manager
Subject: Annual Contract for Booster Pump and Well Emergency and Maintenance Services

INFORMATION ITEM:

Annual Contract for Booster Pump and Well Emergency and Maintenance Services – Discussion regarding utilizing a pump contractor to provide annual pump and well rehabilitation services, as well as annual pump maintenance services and emergency pump services.

BACKGROUND:

CVWD has twelve (12) groundwater wells with pumps and 34 booster pumps to move the water from the lower pressure zones to the higher-pressure zones. As staff prepares the annual Capital Improvement Project (CIP) program, projects are included for the replacement and rehabilitation of at least one of CVWD's wells and at least one booster pump per year.

A goal of CVWD's strategic plan is for CVWD to become proactive on pump maintenance instead of being reactive when a pump or motor fails. To meet this goal, staff is looking into having a pump contractor, that has extensive field pump experience to provide semi-annual maintenance services including recommendation reports on all CVWD's pumps and motors.

Another goal of CVWD's strategic plan is to have contractors available to provide emergency services during a man-made or natural emergency event. A great concern of staff is that, if an emergency event happens, contractors (not under contract) may not be available, as they will be serving other agencies.

DISCUSSION:

Staff met with General Pump Company about an annual pump contract since they have similar contracts with the Cities of Arcadia, Pasadena, and Glendora. They provided a sample request for proposal (RFP) for us to review, and staff utilized this to put together a draft RFP (see attached) for annual pump services. The RFP is broken out into four (4) sections as listed below:

1. Annual Groundwater Well Rehabilitation:

Staff has developed a detailed standard approach to well rehabilitation that can be used by a pump contractor as part of an annual well rehabilitation program. Staff has been investigating ways to improve our daily efficiency as we focus on our ever-increasing volume of annual pipeline replacements.

Typically, as part of the planning for a well rehabilitation project, there is a design period, advertising for bid period, and award of contract period that could take up to two (2) months before actual work by a contractor can begin. Also, the well rehabilitation needs to be scheduled during the winter season, when there is low water demand. If we decided to go to a consulting engineering firm for assistance, this time frame could be increased by another 8 to 12 weeks.

To assist staff, we are recommending that we have an annual pump contract such that staff will work with a pump contractor on the design and construction for well rehabilitation. This will eliminate the time lag between the start of design and mobilization on-site. The proposed construction cost for well rehabilitation will be based on the agreed upon contractor's fee schedule and scope of work. The final contract amount will be reviewed by staff and brought to the Board of Directors for final approval.

2. Annual Booster Pump Rehabilitation

Staff has also developed a standard approach to booster pump replacement that could be used by a pump contractor as part of the annual booster pump rehabilitation, such that staff will be able to focus on the annual pipeline replacement program.

As discussed above, part of the planning for a booster pump project, there is a period that could take up to two to three months before actual work by a contractor can begin. Therefore, staff is also recommending that we include this task as part of the annual pump contract with staff and pump contractor work on the design and construction for a booster pump. This will eliminate the time lag between the start of design and mobilization on-site.

The proposed cost for booster pump rehabilitation will be based on the agreed upon contractor's fee schedule and scope of work. The final contract amount will be reviewed by staff and brought to the Board of Directors for final approval.

3. Annual Booster Pump Inspection and Maintenance Service

As stated above, staff's objective as part of CVWD's strategic plan is to become proactive on pump maintenance. To meet this objective, staff will need the assistance of a pump contractor, to provide semi-annual maintenance and inspection services such as motor maintenance, pump efficiency, and visual inspection of all CVWD's pumps and motors at least twice a year. The pump contractor will also be required to provide an inspection report with recommendation that can be used by staff for prioritization of pump and motor replacement or rehabilitation in the following years.

4. Emergency Pump & Motor Services

Another objective of CVWD's strategic plan is to have contractors available to provide emergency services during a man-made or natural emergency event. To meet this objective, staff has included in the RFP, for a contractor to provide emergency services and to be responsive to CVWD's request within 24-hours of the event. The contract will be based on the agreed upon contractor's fee schedule, response time and availability of materials and will eliminate the need to chase around for an available pump contractor during an event.

Pump Contractors:

CVWD has utilized several pump contractors over the years, and the main issues that we have seen is a pump contractor being over extended, not providing timely service, not having material on-site and breaking down of equipment. General Pump Company has provided the best service compared to other contractors and their last well rehabilitation they performed for CVWD was completed within 3 months as compared to 5 to 6 months with other contractors. In addition, General Pump has demonstrated a high level of expertise with respect to knowledge on pump design and well rehabilitation. Also, they have a large inventory of material and equipment is in good shape. Finally, they are among a small group of firms that has engineers and hydrogeologists on staff to assist with revising our standard well rehabilitation approach in the face of unique challenges.

Project Costs:

For FY 21/22, CVWD has an available budget \$158,000 for the rehabilitation of Well 9 and the replacement of Booster 26 at Cresta Heights. The budgeted amount will need to be increased to accommodate the time and effort of General Pump Company to manage this year's well and booster pump CIP.

Prior to moving forward with work for a particular project, staff will request a quote from General Pump Company detailing the requested services to be provided. Staff would then review the scope of work, and if it is within the amount budgeted for annual contract, staff will bring the project to the Board of Directors for final approval.

FY 21/22 - Contract Cost Estimate:

Staff reviewed General Pump's fee schedule and estimated the project costs for the rehabilitation of Well 9 and the replacement of Booster #26 at Cresta Heights as discussed below.

Well Rehabilitation:

Past well rehabilitation projects for the District have included contributions of staff's time, which is estimated at a cost between \$85,000-\$110,000. Based on estimates General Pump's fee schedule, staff estimates the cost of having General Pump manage the rehabilitation of Well 9 would be around \$144,500. The scope of work for the rehabilitation of Well 9 would include the following:

- Removal of the existing pump and motor assembly
- Wire brushing & removal of sediment by bailing
- Pre-rehabilitation CCTV inspection of well casing
- Review inspection data and make rehabilitation recommendations
- Procurement of a new pump and motor assembly
- Mechanical development of the well
- Chemical treatment of well casing using acids and dispersants
- Advanced treatment, options of the well casing (i.e., Sonar Jetting, Air Bursting)
- Post-rehabilitation CCTV of well casing
- New pump and motor assembly installation
- Discharge requirements per NPDES best management practices
- Pump startup and testing
- Return well to service: well disinfection and DDW approval
- As built and report submission

Booster Pump Rehabilitation

Booster Pump rehabilitation or replacement does not involve as much rehabilitation work. However, pumps are generally larger and more expensive based on the pump capacity. The average booster pump replacement cost ranges from \$22,000 to \$40,000, depending on the size of the pump. To replace Booster #26 at Cresta Heights, staff estimates the cost of having General Pump manage the project will be around \$49,400. The scope of work for Booster 26 at Cresta Heights includes the following:

- Assessment of pump failure at the site, if necessary (vibration analysis, power surge)
- Remove pump and motor assembly
- Perform inspection of existing pump and motor for reporting
- Review inspection data and make rehabilitation recommendations
- Assess line shaft and column pipe for refurbishment or replacement
- Procure the new pump & motor assembly plus all necessary column piping or appurtenances
- Install new pump and motor after staff review.
- Start up and testing
- As built and report submission

This bringing the total cost estimate for the planned booster pump and well maintenance in FY 21/22 to approximately \$193,600, which is \$35,600 above the budget of \$158,000 for this fiscal year.

Annual Booster Pump Inspection and Maintenance Service

Staff reviewed General Pump's rate schedule for providing semi-annual maintenance and inspection services for all CVWD's pumps and motors and provide an inspection report with recommendation. Staff has estimated the annual cost for pump maintenance and inspection services for FY 21/22 (one inspection) to be approximately \$65,000. and will be included in the Booster Pump Maintenance expense account.

Emergency Pump & Motor Services

Staff reviewed General Pump's rate schedule for providing emergency pump and motor services and estimated the annual cost to be around \$20,000 if we need service. This amount will be included in the Emergency Operations expense account.

SUMMARY:

Staff put together a preliminary cost estimate for an annual contract for booster pump and well emergency and maintenance services for the remainder of FY 21/22 at \$265,900 by General Pump (see table below). Staff compared this estimate of \$195,000 funding available in the FY 21/22 CIP & expense budget. However, not included in the FY 21/22 CIP & expense budget is labor hours, which is estimated to be about 360 man-hours, necessary by CVWD's Water Production and Engineering Departments to perform this work effort. In addition, these in-house man-hours could be dedicated to other tasks such as infrastructure & water treatment maintenance, training, and other duties.

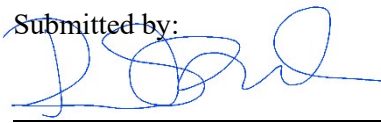
Id No.	FY 21/22 Booster Pump and Well Emergency and Maintenance Services	Estimated Annual Cost
1	Well Rehabilitation	\$144,500
2	Booster Pump Rehabilitation	\$49,400
3	Annual Booster Pump Inspection and Maintenance Service	\$52,000
4	Emergency Pump & Motor Services (contingency)	\$20,000
	Grant Total	\$265,900

It is staff's recommendation to formalize the RFP and send to General Pump Company for a quote. Once the costs are finalized, it is staff's recommendation to bring this item to a future Board meeting for approval.

Prepared by:


Brook Yared, M.S., P.E.
Engineering Manager

Submitted by:


David S. Gould, P.E.
Director of Engineering & Operations

Attachments:

1. CVWD's Request for Proposals
2. General Pump Company's Rate Sheet

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FY 21/22 ANNUAL WELL AND PUMP MAINTENANCE & EMERGENCY SERVICES

Request for Proposal

Proposal Delivery Due Date:

Wednesday, April 6, 2022

12:00 PM PST

Delivery Address:

Crescenta Valley Water District
Attn: David S. Gould, Director of Engineering & Operations
2700 Foothill Blvd
La Crescenta, CA 91214

1. Introduction

Crescenta Valley Water District (CVWD) is seeking professional services for Well and Pump Maintenance Services as outlined in this RFP.

Background: Crescenta Valley Water District (CVWD or the District) was formed as a "County" Water District in 1950 to provide water and wastewater services to the La Crescenta area (unincorporated Los Angeles County) and portions of Glendale and La Canada Flintridge. CVWD serves water to approximately 32,500 people and has about 8,000 service connections. CVWD receives imported water from Foothill Municipal Water District (FMWD) and groundwater from the Verdugo Basin. FMWD is a member agency of the Metropolitan Water District of Southern California (MWD). The CVWD service area covers approximately four (4) square miles in the foothills between Pasadena on the east and Glendale on the south and west. To the north are the San Gabriel Mountains.

CVWD's water distribution infrastructure includes 11 pressure zones, approximately 95 miles of pipeline, 13 booster stations with 34 booster pumps, 12 groundwater wells, and 17 storage reservoirs. As a major part in the ongoing effort to maintain a safe, secure, and reliable water supply system, CVWD performs routine maintenance at facilities located throughout its service area.

Contact Information:

Project Manager:

Mr. Brook Yared, Engineering Manager
2700 Foothill Blvd
La Crescenta, CA 91214
Email: byared@cvwd.com
Phone: Office (818) 236-4117; Cell (626) 590-1020

Operations:

Mr. Kellen Boyce, Production Manager
3730 Glenwood Ave
La Crescenta, CA 91214
Email: kboyce@cvwd.com
Phone: Office (818) 236-XXXX; Cell (818) 284-5817

Ms. Darlene Telles, Operations & Maintenance Manager
3730 Glenwood Ave
La Crescenta, CA 91214
Email: dtelles@cvwd.com
Phone: Office (818) 236-4132; Cell (626) 437-8662

Timeline

Request for Proposal Sent:	March 16, 2022
Question Submittal Deadline	March 23, 2022
Proposal Due	April 6, 2022
Award of Contract	April 8, 2022

2. SCOPE OF WORK

1) Overview Scope of Work

The work shall include:

- a) Baseline assessment
- b) Routine and emergency pump and motor removal, inspection, and installation
- c) Water well rehabilitations
- d) Well casing repairs and installations
- e) Advanced Well Rehabilitation recommendations (i.e., sonar jetting, air bursting)
- f) Dynamic and static well video inspections
- g) MCC Wiring adjustments
- h) VFD Maintenance
- i) Test/rental Pump assembly installation and removal
- j) Repair services on various types of pumps on an as-needed basis.

The work shall include routine and emergency pump pulling and installations, water well rehabilitations, well casing repairs and installations, well abandonments, well video inspections, and/or repair services on various types of pumps on an as-needed basis. The responsibilities of the Contractor under this RFP shall include but are not limited to the following requirements:

2) Technical Requirements:

A. Groundwater Wells:

a. Pump Pulling and Inspection:

- i. Contractor shall disconnect all electrical wiring and appurtenances necessary for the pulling of a deep well pump (maximum 500-feet). Contractor shall remove the motor, discharge head, oil tubing or submersible motor cable, shafting, column, bowl assembly, strainer, and airline.
- ii. All component parts shall be closely inspected for excessive wear, cracks, holes, corrosion, or any type of damage, which would necessitate any repairs or replacement parts
- iii. Contractor shall sound total well depth from surface and provide a depth to the bottom of the well along with detailed reports of the well inspection.

B. Groundwater Well Installation:

- a. After completion of any necessary well repairs or rehabilitation work, the Contractor shall reinstall the bowl assembly, column, shafting, oil tubing or submersible motor cable, airline, level transducer, discharge head, and motor, making all joints and connections in a workmanlike manner.
- b. Contractor shall furnish all incidental materials to bring the project to a satisfactory completion. Whenever possible, pumps shall be manufactured from
- c. CVWD will chlorinate the well in accordance with DDW regulations.
- d. The Contractor shall coordinate with CVWD to ensure that all discharges meet NPDES permit requirements and shall bear the cost for all discharges not in compliance with and/or exceeding the discharge limitations of the NPDES permit.

C. Booster Pumps:

a. Pump Pulling and Inspection

- i. Contractor shall disconnect all electrical wiring and appurtenances necessary for removal of the booster.

- ii. Remove the unit and inspect all component parts for excessive wear, cracks, corrosion, or any type of damage, which would necessitate any repairs, or replacement parts.
 - iii. Send a completed pump inspection report to CVWD including recommendations for repair.
- D. The Contractor shall load, transport and unload pumping unit and all the miscellaneous pulled equipment from jobsite to Contractor's yard and back again to the job site upon repair or arrival of the replacement.
- E. Booster Pump installation:
 - a. After completion of any necessary well repairs or rehabilitation work, the Contractor shall reinstall the bowl assembly, column, shafting, oil tubing or submersible motor cable, airline, level transducer, discharge head, and motor, making all joints and connections in a workmanlike manner.
 - b. Contractor shall furnish all incidental materials to bring the project to a satisfactory completion. Whenever possible, pumps shall be manufactured from
 - c. General: Prior to installation, Contractor shall adequately disinfect the pump assembly, discharge head and column pipe assembly.
 - d. General: Contractor shall test for rotation and operation of the completed installation to the satisfaction of CVWD.
 - e. Booster Pump: Contractor shall move back onto the booster station site and shall reinstall the pump and motor, electrical connections, making all joints and connections in a workmanlike manner. Contractor shall restart the motor to make sure it is operating properly.

3) Well Video Inspection

- A. Static Video Inspection:
 - a. After removal of the pump and upon CVWD's direction, Contractor shall perform well video inspection using color video equipment with side scan.
 - b. The Contractor shall furnish all labor, materials and equipment required to provide a color video survey of the well after preparation of the water to produce clear viewing conditions.
 - c. If necessary, the Contractor will introduce a polymer type flocculant into the well, followed by water. Contractor will allow water to flow into the well for a 24 to 48-hour time period in advance of the video survey to produce clear viewing conditions.
 - d. Should a clear video picture of the internal casing conditions not be achieved, additional clear water preparations shall be instituted, and additional video surveys conducted until a clear video picture record is obtained. This work shall be accomplished at the Contractor's expense.
 - e. As the camera probe surveys the full casing interval in the well, a digital depth record shall be recorded on the video survey log for reference. The video camera shall be capable of providing both vertical and horizontal (side) viewing of the entire casing as it descends into the well.
 - f. When a successful video survey log has been acquired, one copy in CD/DVD format shall be provided to CVWD. Contractor shall submit a written report to accompany the video survey log, documenting survey date, static water level, perforation depth intervals and conditions, and total well depth.
- B. Dynamic Video Inspection
 - a. Dynamic Video inspections are performed while the pump is still in operation.
 - b. The Contractor is responsible for any damage to the dynamic well CCTV equipment that may occur during inspection of an operating pump.

- c. As the camera probe surveys the full casing interval in the well, a digital depth record shall be recorded on the video survey log for reference. The video camera shall be capable of providing a vertical viewing of the entire casing as it descends into the well.
- d. An inspection report and video shall be supplied to the District prior to rehabilitation work beginning and the installation of the new pump assembly. Should the post rehabilitation video survey show an unsatisfactory level of workmanship, further rehabilitation efforts that may be necessary will be performed at the Contractor's expense.

C. Well Rehabilitation Proposal

- a. Contractor shall submit a written report to CVWD stating the total well depth, current water level, general condition of component parts, recommendations for repairs and/or replacements, and the advisability of well rehabilitation.
- b. This report shall contain an itemized labor and material cost estimate of any necessary repairs to, or replacement of, any of the component parts, and a proposed schedule for the completion of the work.

4) **Wire Brushing and Bailing**

- A. Wire brushing shall be carried out in such a manner as to clean the existing casing perforations and to remove scale and tubercles attached to the inside wall of the casing. The Contractor shall furnish the appropriate wire brush. If the screen is wire wrapped, then Contractor shall use an approved stiff nylon brush.
- B. The brush barrel shall be not less than 6 inches smaller in diameter than the well casing. The brushing elements inserted into the barrel shall consist of 7/8-inch diameter minimum stiff steel cable adequately spaced to clean the entire well. A minimum of 1500 pounds shall be required to drive the brush down the well.
- C. After sufficient wire brushing, the well will be allowed to sit for a 24-to-48-hour time period and debris in the water column will be allowed to settle to the bottom of the well during this period. Sediment fill shall be removed from the bottom of the well to the maximum extent possible using a bailer or scow or equivalent retrieval device.
- D. The total depth of the well shall be measured shortly following bailing. This operation will be performed only if the casing appears to be in relatively good condition. Should it appear that there is any damaged casing, or any sections of casing appear to be in a state of detachment from the well, the bailing should not be performed.
- E. If bailing is performed, then all bailed material (water and sediment) shall be placed in steel drums or appropriate containers. The sediment, after separation from the water, shall be placed in the containers, properly labeled, and eventually removed from the well site for disposal by the Contractor.
- F. The Contractor will be responsible for manifesting the bailed material for disposal at an appropriate and approved landfill. The City shall be onsite to collect a sample of the bailed material for possible laboratory analysis.

5) **Advanced Well Rehabilitation**

At times, wells require additional work to restore the screen efficiency or repair extensive damage to the casing. All advanced treatment procedures must be submitted to the District in advance for approval. Advanced treatment is any well treatment that falls outside of the standard rehabilitation practices described here.

6) Temporary Test Pump Mobilization/Demobilization

- A. If requested, the Contractor shall furnish, install, and remove a deep-well turbine pump, prime mover, column assembly, and all appurtenances necessary for developing and/or test pumping the well.
- B. The pump and prime mover shall have a capacity to pump 3,000 gallons per minute from a 400-foot pump setting.
- C. The prime mover shall be a variable speed type.
- D. Contractor shall furnish all fuel or power required to operate the pumping unit.
- E. A temporary 2 to 3-inch I.D. access tube shall be installed during pump installation and will provide access for water level sounders into the well casing during pumping, to measure water levels.
- F. The prime mover shall be a variable-speed type with a gear ratio of 1 to 2, in order to overdrive the pump to attain the desired pump rate. The prime mover shall meet all noise regulation requirements during development and subsequent testing operations.
- G. Discharge piping shall be provided for the pumping unit and be of sufficient size and length to conduct water according to the Special Provisions in these Specifications.
- H. The Contractor shall provide orifices, meters, or other approved devices that will accurately measure the flow rates, in total amount of water pumped (in gallons) and the instantaneous discharge (in gpm).
- I. The discharge line shall be provided with suitable equipment for sand testing, such as the Rossum Centrifugal Sand Sampler.

7) Booster Pump Repair/Rehabilitation Proposal

- A. Contractor shall submit a written proposal to CVWD stating the general condition of component parts, recommendations for repairs and for replacements, and the advisability of pump rehabilitation.
- B. This proposal shall contain an itemized labor and material cost estimate of any necessary repairs to, or replacement of, any of the component parts, and a proposed schedule for the completion of the work.

8) Booster Pump Repairs

- A. The Contractor shall accomplish any repairs or replacements authorized by CVWD in accordance with one of the following:
 - a. Utilization of Contractor's own labor and equipment in accordance with Bidder's Proposal.
 - b. The securing of materials and/or outside services. Materials and outside services shall be paid for at actual invoice plus percentage mark-up in Bidder's Proposal.
 - c. Any suitable combination of the above.
- B. CVWD reserves the right to have any necessary repairs and/or replacement parts furnished by others. At the discretion of the PWP, the Contractor's crew may be required to leave the job site until the necessary repairs are accomplished and/or replacement parts are procured.

3. On Call Emergency Services

1) Firm commitment of availability of service

Once a proposal is accepted, a PROPOSER is expected to maintain an availability of service as set forth in its proposal for at least four months after date of being awarded this annual contract. Under emergency

circumstances, the District may request emergency services. In the event of such request, the contractor shall mobilize within 24 hours or less to perform the required task.

In the event of any emergency constituting an immediate hazard to health, safety, property, or licensees, when caused by Work of the Contractor not in accordance with the Contract requirements, the City may undertake at Contractor's expense, and without prior notice, all Work necessary to correct such condition. All work performed responding to an emergency will be paid on a time and material basis at the rates established in the Rate Sheet provided by the Contractor as part of their proposal.

2) Non-Collusion Affidavits

In accordance with the provisions of Section 7106 of the Public Contract Code, each bidder shall execute and submit with their bid a Non-Collusion Affidavit in the form attached to the Proposal. Additionally, the principal contractor shall secure from each proposed subcontractor a Non-Collusion Affidavit in the form attached to the Proposal.

4. NPDES Discharge Requirements

It is the selected company's responsibility to comply with local NPDES requirements and attain any necessary permits for discharges related to Wells being removed from or returned to service. All of the well wastewater generated as part of this annual contract shall be disposed of by the Contractor in compliance with all applicable State and Federal laws. The Contractor shall request approval by the Director of Engineering and Operations as to the location and estimated volume of the disposal prior to the discharge. The Contractor shall be responsible for monitoring, treating, testing, and disposing of the wastewater.

The Contractor shall be responsible for implementing a storm water pollution plan and to utilize best management practices (BMP) when de-watering the pipeline, flushing the pipeline, de-watering the trench and any other operation that discharges water to the storm drain. The best management practices required to be used by the Contractor shall be as follows:

- A. Contractor shall not be allowed to wash down A.C. saw cuttings into the storm drain. Contractor shall vacuum and dispose of A.C. saw cuttings to an approved location.
- B. Contractor shall install and maintain sandbag de-silting basins around each catch basin in the construction area. Contractor shall be required to remove trapped sediment to an approved location a minimum of once a week or sooner if flow is impeded.
- C. Contractor shall de-chlorinate with sodium thiosulfate any chlorinated water that is discharged from the pipelines during the entire construction period.
- D. Contractor shall regularly sweep the construction area to prevent dirt and rocks from entering the storm drain system.

5. General Contract Requirements

1) Hours of Labor

Contractor shall forfeit as a penalty to Owner the maximum amount provided by statute for each worker employed in the execution of the contract by the Contractor or any of their subcontractors for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code and, in particular, Section 1810 to Section 1815 thereof, inclusive, except that work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay as provided in Section 1815.

2) Approval of Scope of Work

The Contractor shall submit a scope of work, including a cost estimate for performance, to the District, in writing. District staff will review the scope of work and respond, in writing, in regard to any changes in scope. The Contractor shall do and perform such work and furnish such materials and equipment. Such labor, materials, and/or equipment shall be ordered in writing before such work is started. No work shall be paid for unless ordered in writing.

The District's Representative may order minor changes in the Work not involving an increase or decrease in the contract amount, not involving a change in the time for completion, and not inconsistent with the purposes for which the Work is being constructed. If the Contractor believes that any order for minor changes in the Work involves changes in the contract amount or time for completion, they shall not proceed with the minor changes so ordered and shall within seven (7) days of the receipt of such order notify the Owner's Representative in writing of their estimate of the changes in the contract amount and time for completion they believe to be appropriate.

3) Prevailing Wage

The Contractor shall comply with Labor Code Section 1775. In accordance with said Section 1775, the Contractor shall forfeit as a penalty to the Owner, a penalty of up to \$200 per day per worker, in such amount as the Labor Commissioner shall determine for each calendar day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed for any work done under the contract by them or by any subcontractor under them in violation of the provisions of the Labor Code and, in particular, Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor. Moreover, failure to pay the prevailing wage may subject the Contractor to debarment, as provided in Labor Code Section 1777.1.

Failure to pay workers at the appropriate overtime rate for work of more than 8 hours per day or 40 hours per week, shall incur a penalty pursuant to Labor Code Section 1813 of \$25 per day per worker.

4) Contractor's Responsibility for the Work

Until the acceptance of the Work, the Contractor shall have the responsible charge and care of the Work and of the materials to be used therein (including materials for which partial payment has been made or materials which have been furnished by the Owner) and shall bear the risk of injury, loss, or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the Work.

The Contractor shall rebuild, repair, restore, and make good all damage to any portion of the Work or the materials occasioned by any cause before its completion and acceptance and shall bear the expense thereof. Where necessary to protect the Work or materials from damage, the Contractor shall, at their expense, provide suitable drainage and erect such temporary structures as are necessary to protect the Work or materials from damage. The suspension of the Work or the granting of an extension of time from any cause whatever shall not relieve the Contractor of the responsibility for the Work and materials as herein specified.

In an emergency affecting the safety of life or property, including adjoining property, the Contractor, without special instructions or authorizations, is authorized to act at their discretion to prevent such threatened loss or injury.

5) Taxes

The Contractor shall pay all sales, consumer, use, and other taxes.

6) Claims

As provided in Public Contract Code Sections 20104, et seq., claims by the Contractor shall be in writing and include the documents necessary to substantiate the claim. Prior to submitting a claim under this Section 3-9, the Contractor shall comply with all applicable notification requirements under the Contract Documents. All claims must be filed with the Owner on or before the date of final payment.

For claims of less than fifty thousand dollars (\$50,000.00), the Owner shall respond in writing to any written claim within forty-five (45) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim any additional documentation supporting the claim or relating to defenses to the claims the Owner may have against the Contractor. The Owner's written response to the claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

For Claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the Owner shall respond in writing to all written claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor. The Owner's written response to the claim shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or request documentation, whichever is greater.

If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may so notify the Owner, in writing, either within fifteen (15) days of receipt of the Owner's response or within fifteen (15) days of the Owner's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Owner shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute. Submittal

7) Protests

If the Contractor considers any work required by the Owner to be outside the requirements of the Contract Documents, or if the Contractor considers any record or ruling of the Owner, the Owner's Representative or any governmental inspector to be unfair, the Contractor shall immediately upon such work being demanded or such record or ruling being made, ask for written instructions or decision, and within ten (10) days after receipt thereof file a written protest with the Owner, setting forth each objection and the reasons therefor. The Contractor shall, whether or not a written protest will be filed, immediately upon receipt of written instructions or decision proceed without delay to perform the work or conform to the record or ruling. The Contractor hereby agrees that, unless a specific objection or protest has been made as provided herein, the Contractor waives all grounds for protests or objections to the records, rulings, instructions, or decisions of the Owner or the Owner's Representative, and further agrees that as to all matters not included in such objections or protests the records, instructions and decisions of the Owner or Owner's Representative shall be final and conclusive. Such protests shall proceed in accordance with the procedures set forth in Section 3-9 entitled CLAIMS.

8) Quality and Safety of Materials and Equipment

All equipment, materials, and supplies to be incorporated in the Work shall be new, unless otherwise specified. All equipment, materials, and supplies shall be produced in a good and workmanlike manner. When the quality of a material, process, or article is not specifically set forth in the plans and specifications, the best available quality of the material, process, or article shall be provided.

Whenever any material, process, or article is indicated or specified by grade, patent or proprietary name, or by name of manufacturer, such specification is for the purpose of facilitating description of the materials, process, or articles desired and the Contractor may offer any material, process, or article which shall be substantially equal or better in every respect to that indicated or specified; provided, however, that if the material, process, or article offered by the Contractor is not, in the sole discretion of the Owner, equal or better in every respect to that specified, then the Contractor must furnish the material, process, or article specified or one that in the sole discretion of the Owner is the substantial equal or better in every respect. If the Contractor-furnished material, process, or article is more expensive than that specified, or involves additional labor or other cost, then such difference in cost shall be borne by the Contractor.

In accord with Section 3400 of the Public Contract Code, the Contractor shall submit data substantiating requests for substitution of "equal" items within thirty (30) days after award of the contract. This 30-day period is included in number of days allowed for completion of Work.

9) Safety and Public Convenience

The Contractor shall conduct their operations to avoid injury or damage to any person or property, and to minimize any obstruction and inconvenience to the public. The Contractor shall comply with the requirements of the Contract Documents relating to safety measures applicable in particular operations or kinds of work. The Contractor shall have under construction no greater amount of Work than can be prosecuted properly with due regard to the rights and safety of the public and the workers.

In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work, and the Contractor shall fully comply with all state, federal and other laws, rules, regulations, and orders relating to safety of the public and workers, including State of California, Division of Industrial Safety (Cal/OSHA) regulations. Safety precautions as applicable shall include, but not be limited to, adequate life protection and lifesaving equipment; adequate illumination for underground and night operations; instructions in accident prevention for all employees such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accident or injuries; and adequate facilities for the proper inspection and maintenance of all safety measures.

The names and telephone numbers of at least two medical doctors practicing in the vicinity and the telephone number of the local ambulance service shall be prominently displayed adjacent to telephones.

The right of the Engineer or the Owner's Representative to conduct construction review or observation of the Contractor's performance will not include review or observation of the adequacy of the Contractor's safety measures in, on, or near the site of the Work. However, in the event that the Owner determines that the Contractor has failed to ensure the safety of the public and the workers or has failed to take reasonable steps to protect the workers and the public, the Owner may give the Contractor 72-hours written notice to take appropriate action to ensure their safety. In the event the Contractor fails to comply, and the Owner takes such steps as are reasonably necessary to ensure the safety and protection of the public and the workers, the Contractor shall pay the cost and expenses incurred in taking such action.

6. Scope of Non-Emergency Services, FY 21/22

Under this current contract CVWD plans to rehabilitate one of its production wells, well 9, and intends to perform the planned replacement of Booster 26 at Cresta Heights Reservoir. A well log and as built have been included. Please submit a scope of work and cost estimate as part of the response to this request for proposal.



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1 Operator & 40-Ton Crane	\$399.00 per Hour
1-Man Crew, Service Support Rig for the 40-Ton Crane	\$189.00 per Hour
2-Man Crew & Combination Rig	\$449.00 per Hour
2-Man Crew & Standard Pump Pulling Rig	\$425.00 per Hour
Wire Brush or Swab Rental (Nylon Brush NOT included)	\$950.00 Each
Flatbed Truck & Driver	\$185.00 per Hour
Rotary Crane (up to 17-ton) & 1-Man Crew	\$285.00 per Hour
Rotary Crane & 2-Man Crew	\$399.00 per Hour
Service Truck & 1 Pump Mechanic, Electrician or General Services	\$185.00 per Hour
Service Truck & 1 Pump Mechanic & Helper	\$319.00 per Hour
Pipeline Fabricator	\$189.00 per Hour
Shop Labor – Pump Mechanic	\$114.00 per Hour
Shop Labor – Machinist or Welder	\$114.00 per Hour
Overtime & Saturdays	Add \$60.00 per Man Hour
Sundays & Holidays	Add \$120.00 per Man Hour
Control & Instrument Specialist	\$192.00 per Hour
Additional Helper	\$120.00 per Hour
Video Log – Color with Downhole and Side-Scan	\$1,290.00 per DVD
Re-Video Log – Color with Downhole and Side-Scan	\$1,190.00 per DVD
Dynamic Video with Mini Camera	\$1,950.00 per DVD
Test Pump – Above 300-Hp Drive/ Generator	\$340.00 per Hour
Test Pump – Below 300-Hp Drive/ Generator	\$295.00 per Hour
1-Man Crew & Chemical Distribution Trailer, with Safety Equipment	\$299.00 per Hour
Engineering and Hydrogeology Support	Per Job Basis

**PREVALING WAGE RATE JOBS ADD 20% TO EACH COST
EXCLUDING SHOP LABOR**

RATES DO NOT INCLUDE SECURITY OR PORTA POTTIES

FIELD RATES ARE PORTAL TO PORTAL

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Or to speak with one of our qualified Engineers,
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CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 3

March 3, 2022

To: Engineering Committee
From: David S. Gould, P.E. – Director of Engineering & Operations
Subject: Status Update - FY 21/22 Capital Improvement Project Budget

DISCUSSION:

The following is an update of the FY 21/22 Capital Improvement Project status and budget update.

1. 2800 to 3100 Blocks of Los Olivos (E-1033)

- a. Award to Brkich Construction
- b. Start Construction – 3/7/22
- c. End Construction – July 2022
- d. Budget

Account Description	Amount
FY 21/22 Water Distribution Pipeline Replacement for E-1033	\$1,500,000
E-1033 - 2800-3100 Los Olivos Ln., - Contract Bid	(\$945,600)
E-1033 - 10% Contingency for cost of unforeseen or additional work	(\$94,560)
E-1033 - Tetra Tech - Engineering Design Services	(\$56,200)
E-1033 - Dudek - Construction Management & Inspection Services	(\$142,230)
E-1033 - Additional costs such as material purchased by CVWD, soils engineer, and CVWD labor costs	(\$265,086)
Total Cost Estimate	(\$1,503,676)
Amount Remaining	(\$3,676)

2. 3200 Block of Alabama 4700 & 4800 Blocks of Cheryl & 3300 Block of Thelma St (E-1034)

- a. Advertising for Bids – 1/31/22
- b. Bid Opening – 3/1/22
- c. Award of Contract – 3/8/22
- d. Start Construction – 4/4/22
- e. End Construction – July 2022
- f. Budget

Account Description	Amount
FY 21/22 Water CIP– Water Distribution Pipeline Replacement	\$1,100,000
E-1034 Engineer's Cost Estimate for Contractor	(\$447,750)
E-1034 - 10% Contingency for cost of unforeseen or additional work	(\$44,775)
E-1034 - Tetra Tech - Engineering Design Services	(\$56,200)
E-1034 - Estimate for Construction Management & Inspection Services	(\$124,900)
Additional costs such as material purchase by CVWD, soils engineer & inspection labor costs	(\$176,375)
Total Cost Estimate for Project E-1034	(\$850,000)
Amount Remaining in Water CIP – Distribution System	\$250,000

3. FY 20/21 – Pipeline Replacement Projects – Carryover to FY 21/22

- a. E-1022 – Project completed in October 2021, finalizing change orders and project close out.

FY 20/21 Pipeline Replacement Program Cost Update: 03/03/2022	E-Job	Recorded FY 20/21	Budget FY 21/22	FY 21/22 Cost to date from 7/1/21 to 1/31/21	FY 21/22 Cost Committed from 2/1/22 to 6/30/22	Projected FY 21/22
2400 & 2500 Blocks of Janet Lee	E-1008	\$ 861,188		\$ 59,703		
4300 Block of Rosemont	E-1019	\$ 39,407		\$ 1,272		
3400 & 3500 Block of Encinal	E-1021	\$ 760,569		\$ 29,759		
4800 block of Dyer, 2800 block of El Caminito, 4800 block of Glenwood, 2800 block of Stevens & 2700 block of Paraiso Way	E-1022	\$ 175,758		\$ 638,477		
FY 20/21 Pipeline Replacement		\$1,836,922	\$400,000	\$ 729,212	\$ -	\$729,212

4. New Pressure Reducing Station & Rehabilitation of the Ramsdell Mixing Station (E-977)

- a. 90% design under review by staff
b. Preliminary Construction Cost Estimate – \$1.2M
c. Staff working with Cannon on budget and construction schedule

5. Steel Reservoir Rehabilitation at Edmund #2 (E-1036)

- a. Contract awarded to J. Colon Coatings Inc.
b. Structural work completed
c. Coating Work – Started Feb 2022
d. Project anticipated to be completed – April 2022

Account Description	Amount
FY 21/22 Water CIP– Water Storage	\$590,000
E-1036 - J. Colon - Contract amount	(\$623,100)
E-1036 - Harper & Associates - Engineering Design Services	(\$14,000)
E-1036 - Harper & Associates - Quality Control Inspection Services	(\$36,020)
Additional Costs such as CVWD labor costs	(\$22,880)
Total Cost Estimate for Project E-1036	(\$696,000)
Amount Remaining in Water CIP – Water Storage	(\$106,000)

6. Well 9 Rehabilitation

- a. In Design
b. Working with General Pump Company on Annual Well & Pump Rehabilitation Contract

7. Booster 26 at Cresta Heights Replacement

- a. In Design
b. Working with General Pump Company on Annual Well & Pump Rehabilitation Contract

8. Replacement of SCADA communication radio network (E-1025)

- a. Behind Schedule
b. Developing Scope of Work

9. Replacement of SCADA Equipment, Programing & Integration (E-939)

- a. Pilot Project for Wells 8 & 14 – Complete
b. See Staff Report

10. Conversion of Disinfection System to Chloramines (E-995)

- a. Behind Schedule
b. Working on Scope of Work

11. AMI – Customer Engagement Platform (E-1035)

- a. Working with WaterSmart on transferring data
- b. Reviewing “Welcome Letter” to customers
- c. Weekly meetings

12. AMI – Installation of ¾” & 1” meters (E-1035)

- a. Completing installation of ¾” & 1” meters within Zone 1
- b. Held planning meeting for installation of about 1,000 SmartPoints in Zone 1

13. AMI – Installation of 3” & 4” meters (E-1031)

- a. Waiting on USBR to finalizing Agreement
- b. Meeting in February 2022 to start survey of 3” & 4” meters

14. FEMA Local Hazard Mitigation Plan (M-1004)

- a. Applied for Notice of Intent (NOI) with FEMA for two (2) projects
- b. Project 1 – New emergency electrical generators at 5 sites application due 4/8/22
- c. Project 2 – Seismic Evaluation of CVWD’s facilities application due 4/8/22

FY 2021/21 CIP Budget

See attached for updated CIP Budget

RECOMMENDATION:

Staff’s recommendation is to continue to provide updated information to the Engineering Committee as the FY 21/22 CIP program progress over the next 3-months.

Prepared & submitted by:



David S. Gould, P.E.
Director of Engineering & Operations

FY 21/ 22 Capital Improvement Project Program Cost Update: 03/03/2022	E-Job	Recorded FY 20/21		Budget FY 21/22	<i>FY 21/22 Cost to date from 7/1/21 to 1/31/21</i>	<i>FY 21/22 Cost Committed from 2/1/22 to 6/30/22</i>	Projected FY 21/22
1. Water Supply		\$ 153,866		\$ 135,000	\$ 4,640	\$ 134,908	\$ 139,548
2. Water Storage		\$ 663,213		\$ 616,900	\$ 56,610	\$ 667,907	\$ 724,516
3A. Water Distribution - Pipeline - Pyramid - 20 yrs		\$ 1,838,368		\$ 3,000,000	\$ 1,043,714	\$ 2,039,173	\$ 3,082,888
3B. Water Distribution - Other		\$ 139,017		\$ 781,000	\$ 48,198	\$ 732,802	\$ 781,000
4. Water Treatment		\$ 54,073		\$ 75,000	\$ -	\$ 75,000	\$ 75,000
5. Technology		\$ 466,671		\$ 1,019,000	\$ 150,586	\$ 871,414	\$ 1,022,000
6. Public Safety/Emergency Response		\$ 134,549		\$ 30,450	\$ 27,548	\$ 2,902	\$ 30,450
7. Facilities & Planning		\$ 3,956		\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total		\$ 3,453,712		\$ 5,657,350	\$ 1,331,295	\$ 4,524,106	\$ 5,855,402
Bond Financing - CIP		\$ 2,695,174		\$ 2,304,826			\$ 2,304,826
Water Distribution - Pipeline Total				\$ 3,000,000			\$ 3,082,888
Remaining CIP				\$ 2,657,350			\$ 2,772,514
Water Fund Financing - CIP		\$ 758,538		\$ 3,352,524			\$ 3,550,576
Total Financing - CIP		\$ 3,453,712		\$ 5,657,350			\$ 5,855,402

FY 21/ 22 Capital Improvement Project Program Cost Update: 03/03/2022	E-Job	Recorded FY 20/21	Budget FY 21/22	<u>FY 21/22</u> Cost to date from 7/1/21 to 1/31/21	<u>FY 21/22</u> Cost Committed from 2/1/22 to 6/30/22	Projected FY 21/22
1. Water Supply						
A. Groundwater Water Supply						
i. Well Rehabilitation						
Well 11 Rehabilitation		\$	56,106			
Well 12 Rehabilitation	E-1028	\$	94,042			
Well 9 Rehabilitation						
iii. Groundwater Basin Recharge						
Stormwater Recharge Project at CVC Park - Planning	E-985	\$	3,718			
WS Total		\$	153,866			
2. Water Storage						
A. Reservoir Rehabilitation						
i. Steel Reservoir Rehabilitation						
Markridge		\$	367			
Rosemont	E-1018	\$	607,665			
Oak Creek - 16" Manifold Repair	E-1026	\$	55,181			
Edmund #2	E-1036					
WS Total		\$	663,213			
3. Water Distribution						
A. Pipeline Replacement						
2400 & 2500 Blocks of Janet Lee	E-1008	\$	861,188			
4300 Block of Rosemont	E-1019	\$	39,407			
3400 & 3500 Block of Encinal	E-1021	\$	760,569			
2800 Block of El Caminito, 4800 Block of Glenwood	E-1022	\$	175,758			
FY 20/21 Pipeline Replacement		\$	1,836,922			
2800 - 3100 Blocks of Los Olivos	E-1033	\$	774			
4700 Block of Cheryl	E-1034	\$	671			
FY 21/22 Pipeline Replacement		\$	1,445			
i. Annual Pump /Motor Replacement						
Boosters - Glenwood 32 & 33		\$	85,951			
Booster - Paschall Booster B	E-1029	\$	20,385			
Booster - Booster 26 at Cresta Heights						
D. Pressure Reducing Stations						
PRS - Zone 2 to Zone 1	E-977	\$	32,680			
PRS - Upgrade Zone 4 to Zone 3						
E. Miscellaneous Projects						
iii. Misc.						
Upgrade - Ramsdell Mixing Station	E-977	\$	-			
WD Total		\$	1,977,384			

FY 21/ 22 Capital Improvement Project Program Cost Update: 03/03/2022			E-Job	Recorded FY 20/21	Budget FY 21/22	FY 21/22 Cost to date from 7/1/21 to 1/31/21	FY 21/22 Cost Committed from 2/1/22 to 6/30/22	Projected FY 21/22
4. Water Treatment								
C. Disinfection - Convert to Chloramines								
	Conversion to Chloramination	E-995	\$	54,073	\$ 75,000	\$ -	\$ 75,000	\$ 75,000
WT Total			\$	54,073	\$ 75,000	\$ -	\$ 75,000	\$ 75,000
5. Technology								
A. Automated Meter Information (AMI) System								
	AMI - Communication	E-1020	\$	215,080				
	3" & 4" Smart Meters	E-1031	\$	1,004	\$ 200,000	\$ 834	\$ 199,166	\$ 200,000
	AMI - 3/4" to 1" - Smart Meters	E-1035	\$	71,693	\$ 233,000	\$ 8,751	\$ 224,249	\$ 233,000
	AMI - Customer Service Interface	E-1035			\$ 87,000	\$ 45,860	\$ 41,140	\$ 87,000
	AMI - USBR Grant	E-1041			\$ -	\$ 1,572	\$ 1,428	\$ 3,000
B. Supervisory Control and Data Acquisition (SCADA) System								
	Communication Radio Network	E-1025	\$	72,917	\$ 125,000	\$ 17,610	\$ 107,390	\$ 125,000
	SCADA Replacement - Installation	E-939	\$	105,977	\$ 374,000	\$ 75,959	\$ 298,041	\$ 374,000
TECH Total			\$	466,671	\$ 1,019,000	\$ 150,586	\$ 871,414	\$ 1,022,000
6. Public Safety/Emergency Response								
D. Miscellaneous								
	FEMA Local Hazard Mitigation Plan	M-1004	\$	134,549	\$ 30,450	\$ 27,548	\$ 2,902	\$ 30,450
SF/ER Total			\$	134,549	\$ 30,450	\$ 27,548	\$ 2,902	\$ 30,450
7. Facilities & Planning								
D. Reservoir Site Improvements								
	Roof for Old Encinal - Storage Bldg	E-1027	\$	3,956				
F & P Total			\$	3,956	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total			\$	3,453,712	\$ 5,657,350	\$ 1,331,295	\$ 4,524,106	\$ 5,855,402