

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

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

To be held on

May 17, 2017 at 9:00 AM

Posted May 15, 2017 at 10:00 am

Call to Order

Adoption of Agenda

Information Items

1. Status of Groundwater Wells and Well Capacity
2. Update on Crescenta Valley County Park – Stormwater Project
3. Award of Contract - Water Distribution Leak Detection Survey
4. Design – New Emergency Electrical Generator at the La Granada Wastewater Lift Station, Project S-962
5. Discussion of FY 16/17 Capital Improvement Project Program

Public Comments

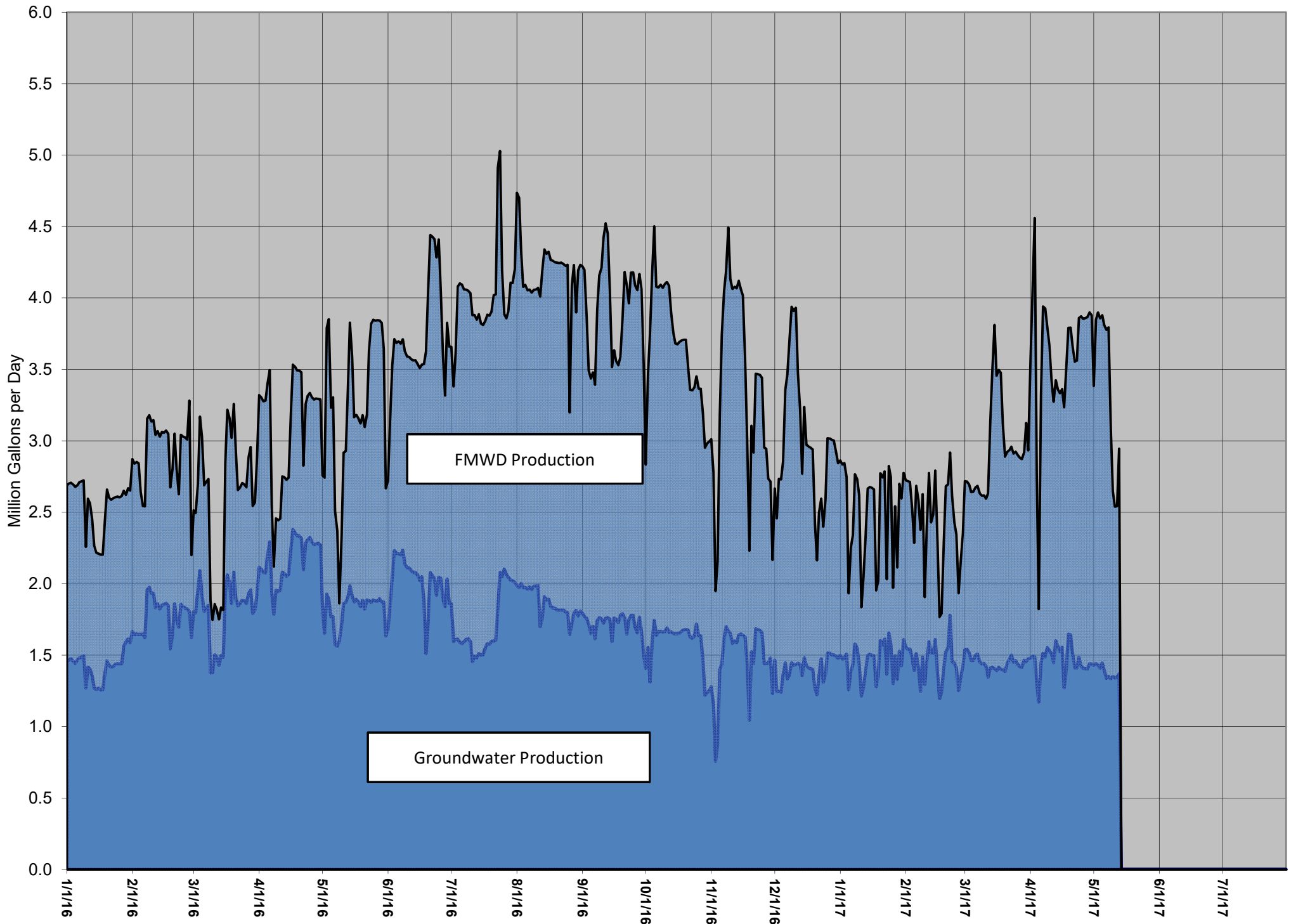
At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable and speakers are limited to three (3) minutes each.

Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – June 15, 2017

Adjournment

Water Production Chart



CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
May 17, 2017

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Project Update - Crescenta Valley County Park Storm Water Recharge Facility Study

INFORMATION ITEM:

Project Update - Crescenta Valley County Park Storm Water Recharge Facility Study

BACKGROUND:

The Crescenta Valley County Park (CVC Park) Stormwater Recharge Project Facility Study (Study) was conducted to provide important data and geologic information to determine if portions of Crescenta Valley County Park in the La Crescenta area of Los Angeles County can be utilized for storm water capture for groundwater recharge. The Study is a feasibility study which will be called Phase 1 of a two-phase project to create storm water capture for groundwater recharge to maintain water levels, so there is not a wide fluctuation in groundwater levels during dry and wet rainfall years.

The Study investigated CVWD's ability to construct facilities to divert stormwater flow and dry weather runoff to infiltration basins for groundwater recharge within the Verdugo Basin, and reduce surface water runoff from the existing parking areas. Recharge of stormwater runoff will help improve groundwater quality, increase water-supply reliability, and improve surface water quality in downstream receiving waters.

DISCUSSION:

The results of the Study showed it was possible to divert stormwater flow and dry weather runoff to infiltration basins for groundwater recharge within CVC Park. The next step will be to prepare a preliminary plan that can be used for further grant funding under Proposition 84. The next round of grant application is anticipated to be due in March 2018. Staff is starting preparation for the grant application that includes a preliminary plan, CEQA documentation and involvement from Los Angeles County Public Works and Park and Recreation and the City of Glendale.

Staff has put together a project schedule to meet the grant application date (see attached) which shows that planning for this project should start within the next month.

Staff is planning to present the project and the project schedule at the June 6, 2017 Board meeting. Also, AMEC and staff will be making a presentation on the findings from the recently complete Study.

The key element to proceeding with this project is the Board's approval of the next project which includes installation of infiltration galleries to capture the stormwater underneath CVC Park.

RECOMMENDATION:

It is staff's recommendation that the Engineering Committee provide comments on the project for staff to use during the upcoming presentation

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. CVC Park Project Schedule

Crescenta Valley Water District
CVC Park Stormwater Infiltration Project
Updated Project Schedule - 5/16/17

Task No.	Task Force Meeting	Responsible Party	Start Date	End Date	Days	Comments
	Conceptual Meeting #1	CVWD/JRC/AMEC	5/10/17	5/10/17	0	Layout Project & Tasks
	Request Letter to LADWP - Water Rights					
	Meeting with GWP		5/23/17	5/23/17	0	
	Preliminary Conceptual Design with Cost Estimate		5/10/17	6/9/17	30	Design & Cost for Stormwater Recharge Only
						Need to add in other multi-benefits
	Task Force Mtg #1 - LACPR,LACDPW,GWP		6/9/17	6/23/17	14	
	Task Force Mtg #2 - LACPR,LACDPW,GWP		7/23/17	7/30/17	7	
	Task Force Mtg #3 - LACPR,LACDPW,GWP		8/29/17	9/5/17	7	Finalize Preliminary Design to be used for CEQA
	CEQA Plus - RFP/Contract Award		9/5/17	9/12/17	7	
	CEQA - Complete		9/12/17	1/9/18	119	
	Board Meeting - Authorize CEQA		1/9/18	1/9/18	0	
	Start 30-day Comment Period - Send Out		1/10/18	2/16/18	37	
	CEQA Comments Back		2/16/18	2/16/18	0	
	Board Meeting- Public Hearing		2/20/18	2/20/18	0	Complete by Final Submittal to LACFCD
	Submittal to ULAR - Sub-Committee		12/30/17	1/29/18	30	Assume 1 month
	Submittal to LACFCD		1/29/18	2/28/18	30	Assume 1 month
	Submittal to IRWM by LACFCD - Early 2018		2/28/18	3/15/18	15	Assume Submittal Date to DWR - 3/15/18
	DWR Review		3/15/18	9/11/18	180	Assume 6 months
	Preliminary Award		9/11/18	9/16/18	5	
	Final Award		9/16/18	10/16/18	30	Assume 1 month
	Design		10/16/18	7/13/19	270	Assume 9 months including RFP & Design
	Bidding		7/13/19	9/11/19	60	Assume 2 months
	Construction		9/11/19	7/7/20	300	Assume 10 months
	Complete Project		7/7/20	8/6/20	30	Assume 1 month
	Total Project Time		5/10/17	8/6/20	3.24	Years

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 3
May 17, 2017

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Award of Contract for Water Leak Detection Survey for the District's Water Distribution.

INFORMATION ITEM:

Water Distribution Leak Detection Survey – Award of Contract to Utility Services Associates for Water Leak Detection Survey for the District's Water Distribution.

BACKGROUND:

Staff has been looking into ways of reducing the District's unaccounted-for-water or lost water, which is the difference between the amount of water produced (from groundwater and imported water) and the amount of water sold each year.

Unaccounted-for-water is a misleading term long used by the water industry. Unaccounted-for-water includes unmeasured water put to beneficial use as well as water losses from the system. Better terms distinguish between authorized unmetered uses and water losses. Authorized unmetered uses include firefighting, main flushing, process water for water treatment plants, landscaping of public areas, etc. Water losses include all water that is not identified as authorized metered water use or authorized unmetered use. Where water is lost from the distribution system, it does not produce revenue, and are unavailable for other beneficial uses. Examples of water losses are: illegal connections, accounting procedure errors, reservoir seepage and leakage, reservoir overflow, leaks, theft, evaporation, and malfunctioning distribution system controls.

From 2010 to 2013, the District saw an average of 11.8% per year of water lost through inaccurate meters and pipeline leaks. Starting in 2014 with the water meter replacement program, the District showed a reduction of water lost to 7.5%, and thereby increased CVWD's water use efficiency. Staff looked into other ways to reduce the amount of unaccounted-for-water and another method would be to perform a water leak detection survey on the existing pipelines and water service laterals to determine if there are undetected water leaks that go straight under the ground.

CVWD last performed this type of survey in 2008 and from staff's research there are a number of companies that perform leak detection services in Southern California. These companies use leak detection equipment that can range from the simple and inexpensive to the complex and include the following:

- Leak Noise Survey Tools
- Acoustic Leak Noise Detectors (ground microphones)
- Leak Noise Correlators
- Leak Noise Logging Systems
- Pipe and Cable Locators

DISCUSSION:

The FY 16/17 water expense budget included funding for a water leak detection survey on half of the water distribution system located above Foothill Blvd of \$25,000. The goal of the leak detection survey was to see if there was any unknown leaks and thereby reducing the amount of unaccounted for water loss to a level below 7% of the total system water production.

Staff requested quotes from four (4) firms that provide leak detection survey services for

approximately 48 miles of pipeline and water service laterals.

On March 14, 2017, following quotes for this project were received by the District:

	<u>Bidder</u>	<u>Total Bid Amount</u>
Low	Utility Services Associates	\$15,000
2	M.E. Simpson, Inc	\$17,900
3	Underground Service Company	\$29,750
4	Cable Pipe & Leak Detection	\$76,000

Utility Services Associates (Utility Services) provided the lowest quote of \$15,000 and the low bid was 40% lower than the engineer's estimate of \$25,000.

Staff has met with Utility Services and they can proceed with the work starting June 25, 2017 and should be completed by July 30, 2017. Utility Services will provide a detailed report showing location of possible water main leaks and the amount of water that is being lost through leaky pipelines.

RECOMMENDATION:

Staff recommends the Engineering Committee approve the quote from Utility Services Associates for \$15,000 and to direct staff to proceed with the project. The results of this leak detection survey, the unaccounted for water leakage found can be attributed to the detectable and repairable water leaks in the system.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. Bid Summary
2. Utility Services Associated Proposal dated 3/14/17

g:\engineering committee\2017 ec memo\05-17-17 ecm memo - leak detection survey.docx

CRESCENTA VALLEY WATER DISTRICT

Title: Leak Detection 2017

Water Loss Detection Survey

Job No: Water Loss Report

Engineer's Estimate: 48.09 miles of water main

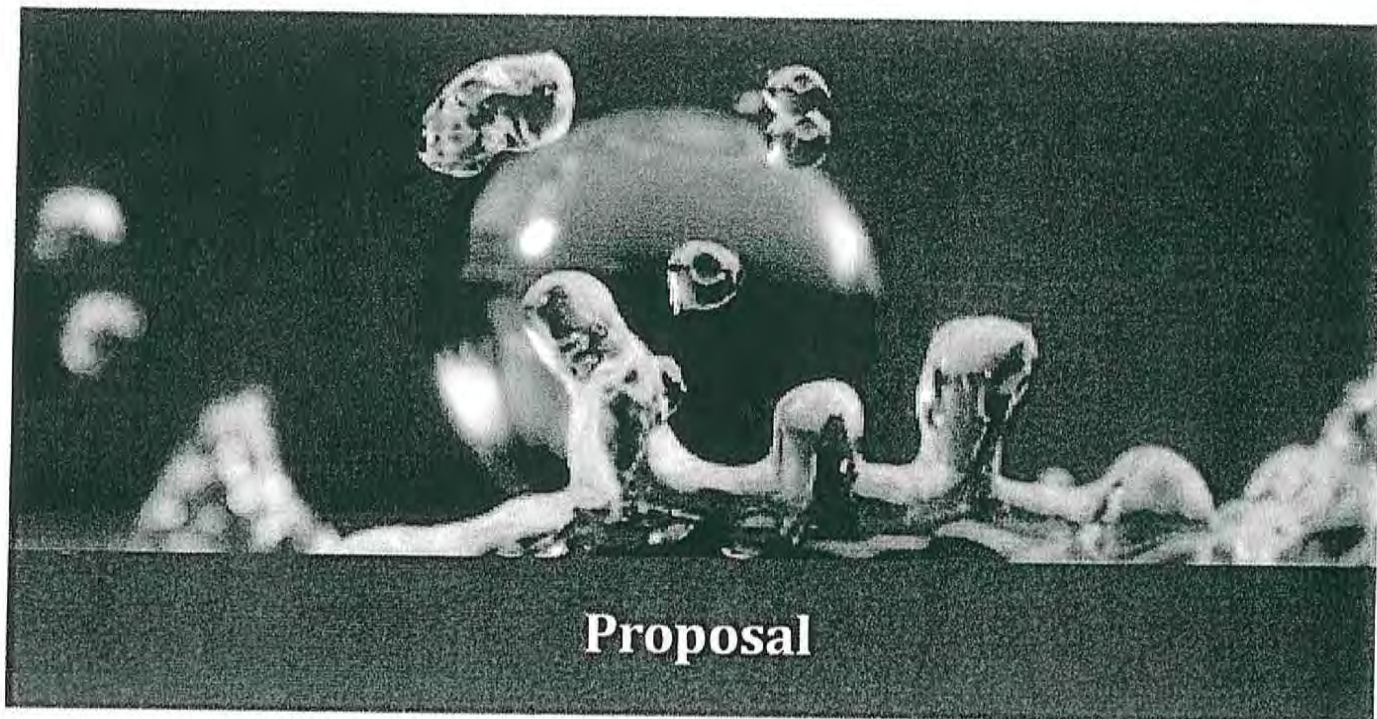
Project Manager: Christina Olmedo

TIME: 2:00 PM

DATE: 3/31/17

BY: CO CHECKED: DSG DATE: 4/6/17

		Utility Services Associates		ME Simpson Inc.		Underground Service Company		Cable Pipe & Leak Detection	
ITEM	DESCRIPTION	UNIT	AMOUNT	UNIT	AMOUNT	UNIT	AMOUNT	UNIT	AMOUNT
1	Leak Detection	\$311.91	\$14,999.75	\$372.22	\$17,900.00	\$618.63	\$29,750.00	\$1,580.37	\$76,000.00
		\$2,000.00		\$2,500.00		\$5,000.00		\$3,000.00	
		Low	\$14,999.75	2ND	\$17,900.00	3RD	\$29,750.00	4TH	\$76,000.00



Water Distribution Leak Detection Survey



Submitted to:

Crescenta Valley Water District
2700 Foothill Blvd.
La Crescenta, CA 91214

Submitted by:

Utility Services Associates
19655 1st Ave. South, Suite 101
Seattle, WA 98148

PROPOSAL

Contents

Cover Letter	Pg. 1
Company Qualifications	Pg. 2
Description of Services	Pg. 7
References	Pg. 15
Price, Schedule and Standard Terms	Pg. 16



**UTILITY SERVICES
ASSOCIATES**

Leak Detection & Solutions

March 9, 2017

Crescenta Valley Water District
Attn: Ms. Christina Olmedo
2700 Foothill Blvd.
La Crescenta, CA 91214

Ref. Water Distribution Leak Detection Survey

Dear Ms. Olmedo,

We would like to thank you for this opportunity to submit this proposal for your consideration of a Water Distribution Leak Detection Survey for the Crescenta Valley Water District (CVWD) as outlined in the above referenced Request for Quotation (RFQ).

Utility Services Associates (USA) fully understands the scope of project as set forth in the RFP and in most cases, exceeds those requirements as set forth in the RFQ. The work is to include a leak survey on approximately 48.09 miles of the water system.

USA has one of the nation's longest histories in leak detection and asset management programs with our roots dating back to the early 1980's. We believe that our unique qualifications and the services that we provide make us the best candidate for completing this work in the most efficient, effective and cost beneficial way possible.

We advocate furnishing a comprehensive, thorough and complete project through every facet. We constantly upgrade to the latest technology and methods to provide the most cost-effective service available.

Jeff Benjamin will be assigned as Project Manager for USA. Mr. Benjamin works out of our Seattle, WA office and he can be reached at 877-585-LEAK (5325) or via email at jbenjamin@leakdetectionservice.com.

We look forward to assisting the Crescenta Valley Water District with this important project. If you or your staff has any questions, please don't hesitate to contact us at the numbers above.

Sincerely,

Rob Meston
President



PROPOSAL

Company Qualifications

COMPANY PROFILE

USA is a group of professionals working with other professionals and manufacturers, creating new technology as well as developing new procedures and methods to better serve the water industry.

The professionals at USA have an understanding for the business few companies can match. As leaders in the industry, USA is at the heart of today's demand for cost-effective solutions for water line leak detection and meeting conservation mandates.

We have a reputation for using the latest water leak detection technologies including everything from correlator systems to thermal/multi-spectral imaging. We employ a highly trained staff with decades of individual experience and take pride in providing the highest level of service in the industry.

Our primary service is to provide Water System Leak Detection using state of the art digital correlation technology. We are equipped for worldwide mobilization. We provide our services to all types and sizes of water systems, on a preventative (pro-active) or emergency basis (earthquake recovery).

USA travels the globe to bring water loss control services and technology to clients interested in preserving one of our most precious resources. We work with clients in a variety of roles in water distribution and transmission. Our clients come from the following sectors:

Water System Management	Government Entities	Residential Commercial
Municipalities	Military Bases	Homeowners/HOA's
Engineering Firms	Bureau of Indian Affairs	Contractors
Public Utility Districts	Federal and State agencies	Builders

COMPANY MILESTONES

- FOUNDED - 1985
- SOLD TO WESTERN UTILITY SUPPLY - 1994
- SOLD TO HUGHES SUPPLY - 2000
- SOLD TO HOME DEPOT - 2005
- SPLIT OFF - 2009

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USA RECORD OF SUCCESSES

The following is a list of projects successfully completed between 2009 and 2015:

- 2010 - 308 leak detection projects
- 2011 - 277 leak detection projects
- 2012 - 312 leak detection projects
- 2013 - 288 leak detection projects
- 2014 - 294 leak detection projects
- 2015 - 264 leak detection projects
- 2016 - 314 leak detection projects

USA holds associate memberships and involvement in professional organizations and committees such as; American Water Works Association (AWWA), National Rural Water Association (NRWA). In addition, our involvement with the AWWA Water Accountability Committee helps us stay abreast of changing trends in the industry, allowing us to better meet the ever-changing needs and requirements of our clients.

INSURANCE COVERAGE

USA maintains the amounts of insurance coverage listed below. We will provide a certificate showing evidence of coverage as required in the RFQ upon notice of award:

Type	Company	Limitation
General Liability	American Casualty Co.	2,000,000
Automobile	Mutual of Enumclaw	1,000,000
Excess Liability	Continental Casualty Co.	1,000,000
Professional Liability	Landmark American Insurance	1,000,000
Worker's Compensation	Washington State Labor & Industries	No Limit
	Valley Forge Insurance Co.	1,000,000

COST CONTROL

Each project that we propose is carefully calculated and based on information provided by the client (i.e. number of miles, amount of loss, etc.). If, during the course of a project, the amount of line to be surveyed (which is the foundation on which all proposals are built) is determined to be significantly different than proposed, the field staff communicates this to the Project

PROPOSAL

Manager as soon as it becomes apparent. The Project Manager then works closely with the client to resolve the problem, therefore limiting any cost over-runs before they are realized. Any additional work that was not part of the original proposed schedule will be approved by the client in writing.

QUALITY ASSURANCE PROGRAM

USA has established a carefully planned and controlled Quality Assurance Program, which is broken down into three (3) main areas:

1. Client Contact

When the very first contact is made with the client, our Project Managers begin to work closely with the client representative to establish a project scope. This includes:

- Preparing a detailed Proposal
- Precision Scheduling
- Liaison between client and field personnel

2. Project Work

Once the project has started, our field staff meet with the client representative(s) and establish a routine schedule. Most projects are modeled after the following steps:

- Survey Phase - this is the cursory sounding "sweep" and is done at pre-established listening distances (refer to the Description of Services section of this proposal for more information).
- Pinpointing Phase - during this phase, leaks are pinpointed using various sophisticated equipment. Daily copies of leak reports are provided to the client so that repairs can be scheduled in a timely manner.

3. Project Follow-up

Project follow-up starts in the field with a debriefing meeting between our Water Loss Consultant and the client contact. A review of project specifics is provided at this time.

- Final Report preparation and submission

PROPOSAL

- Ensuring the client understands the data collected
- Continued post project client support

TEAM QUALIFICATIONS

The team at USA is fully qualified to perform all tasks outlined in the RFQ. Each member, including subcontractors, has specific skills, experience and training for meeting the needs of our clients. Combined, our team has over 125 years of experience in the water industry. The short biographical paragraphs below illustrate the wide range of expertise that each key member of our team brings to the project:

Rob Meston, President. Mr. Meston has over 26 years of experience in water conservation. He started as a Water Loss Consultant with USA in 1990. Rob is one of the most senior leak detection experts in the country. In 1994 the company was sold and under the new company Rob was promoted to Consultant/Technical Support where he was responsible for the day-to-day activities of the field crews. In 2009 Rob partnered with Bruce Rubin and Tom Ruppenthal to reform Utility Services Associates, LLC.

Jeff Benjamin, Project Manager. Mr. Benjamin attended Lewis Clark State College and completed his Degree in Business Technology at Moses Lake, Idaho. After serving in the Navy and then creating and operating several businesses over 25 years, Jeff joined Utility Services Associates in 2008. He works out of our Northwest Branch, where he leads the company's sales and marketing initiatives. Jeff's areas of expertise include Leak Detection, Water Audits, and Tank Inspection, as well as developing new procedures, methods, and products to keep USA on the cutting edge. Jeff also helps coordinate scheduling and is available in an advisory capacity.

Suzie Freeman, Office Manager. Ms. Freeman has over 6 years of experience, having joined USA in June of 2008. She coordinates and maintains all client files including pre-project correspondence and Final Report preparation and submission. She acts as liaison between senior management and field staff and provides office support for all aspects of the Leak Detection system.

Eric Kelsay, Senior Water Loss Consultant. Mr. Kelsay attended Olympic College in Bremerton, WA studying electronics, engineering and welding. In March 2005, Mr. Kelsay joined USA as a Field Leak Consultant. Mr. Kelsay is a highly trained, experienced Leak Consultant whose hard

PROPOSAL

work and dedication have earned him praise from many of the clients he has worked with. Mr. Kelsay works out of our Seattle, WA office and is available for travel anywhere. He recently completed a 71-mile project for the Pine Bluff Arsenal, AR.

Rick Cabral – Senior Water Loss Consultant. Mr. Cabral attended De Anza Jr. College in Cupertino, CA graduating with a degree in Industrial Arts. Rick has been with USA since 1998 and operates out of our Montana branch in Kalispell and is available for travel worldwide. Rick's attention to detail and extensive mechanical background allows him to solve even the most difficult problems. His in-depth knowledge of the instrumentation has made him a very accurate Water Loss Consultant. His most recent projects include a 6-month leak detection pinpointing and repair project in Saipan, MP.

Thomas Olson – Water Loss Consultant. Mr. Olson works out of our Seattle office as a Water Loss Consultant and is available to travel anywhere in the US. His most recent projects included 124-mile project in Cape Canaveral, FL.

Jerry Thomas – Water Loss Consultant. Mr. Thomas works out of our Seattle office as a Water Loss Consultant and is available to travel anywhere in the US. His most recent projects included 100-mile project in Williamsport, PA.

End of Section

PROPOSAL

Description of Services

PROJECT UNDERSTANDING

After reviewing information in the RFQ, we are certain we can identify areas of leakage in water distribution system, which when repaired, will reduce non-revenue loss.

BACKGROUND

CVWD desires to conduct a water system leak survey of its mains, service lines, hydrants, valves and laterals using the most sophisticated leak detection equipment, procedures and methods available.

PROJECT DETAILS

The water system consists of approximately **48.09** miles of water main lines. Water mains in the system consists of **STL (CL&W, CML&CMC, STD, OD) and AC (less than 900')** pipe material, varying in sizes from **4"** through **12"**. Contact points (valves, hydrants or services, etc.) are within **300 feet** in most cases. The pressure varies from **40 PSI** to **220 PSI**.

PROJECT TASKS

USA surveys for water leaks using the latest in leak detection technology available. We use a sonic leak detection sound amplification instrument in conjunction with a sensitive transducer to conduct system surveys. We use various sophisticated equipment from correlators to ground microphones to pinpoint system leakage. Trained, experienced professionals operate our equipment. Our Water Loss Consultants undergo an annual audiogram (hearing test). A detailed report of leak locations, estimated gallon per minute (GPM) loss, and area covered is supplied daily. A Final Report will be provided within ten (10) calendar days of the completion of the field work.

Task 1. Meetings

Overview: To ensure that the project is performed effectively we will meet on a regular basis with CVWD representatives. These meetings will include:

- A. **Kick-off Meeting** – USA field staff will meet with designated CVWD representatives to obtain and review system maps, outline project goals and determine project action plan.

PROPOSAL

- B. **Close-out Meeting** – USA field staff will meet with designated CVWD representatives to discuss the results of the project. Any maps provided to USA staff will be returned.

Task 2. Survey Phase

Overview: The Survey Phase will be accomplished using state of the art acoustic equipment, making direct contact with system appurtenances such as valves, services and fire hydrants. This will be done using the following steps:

- A. The first step in our survey is to review the distribution maps of the CVWD's system for familiarization of the pipe network and the appurtenances to be checked. This initial review is helpful in developing the most efficient survey possible.
- B. As the leak survey progresses, USA will sound appurtenances at varying distances depending on pipe type, size and pressure. Generally, access points will not exceed 250' where available. However, areas with limited access may require the distance to be exceeded.
- C. If noise is detected, we will record the noise for re-investigation during the Pinpointing Phase.
- D. The equipment utilized does not normally require appurtenances to be operated during surveying. However, on occasion, appurtenances may need to be operated to eliminate service draw noise or to change velocity noise. Operation of appurtenances will only be done by CVWD crews unless approved and directed otherwise. If we are directed to operate appurtenances, we will not be liable for any broken appurtenances or damage.

Task 3. Pinpointing Phase

Overview: All noises detected during the Survey Phase will be re-investigated during the Pinpointing Phase. The pinpointing of leaks will be accomplished using computer correlation equipment whenever/wherever possible as well as ground microphones and probes. This will be done using the following steps:

- A. Pinpointing leak locations through interpretation of sound intensity, either by ear, decibel metering or other like methods is not used when contact points are available for use with the correlator.

PROPOSAL

- B. As with the Survey Phase, the equipment utilized does not normally require valves to be operated during surveying and pinpointing. However, on occasion, services or valves may need to be operated to eliminate service draw noise or to change velocity noise. The CVWD representatives will operate appurtenances if required, unless we have prior approval to operate appurtenances. If so, USA will not be liable for any damage.
- C. The correlator equipment used will have the capability to prompt the operator to input the variables when different pipe sizes and/or pipe materials are encountered in the same span to be investigated. This is necessary to ensure accuracy of results based on the automatic computation of the correct leak sound velocity in leak pinpointing operations. Our correlator has the capability of correlating up to seven different pipe materials or diameters within the selected span. To insure effective performance in all field environments encountered in your distribution system (i.e. traffic noise, draw, pump operation, industrial noise, etc.) the correlator equipment provides 12 multi-range High and Low Pass filters. (FCS TriCorr). A correlator will be on site at all times during leak detection projects.
- D. Each leak will be classified according to size in gallons per minute (GPM) and hazard in order to aid in scheduling repairs. It should be noted that leak classification is not an exact science. In spite of the use of the most modern instrumentation, as well as complete training and experience by our Water Loss Consultant, it is impossible to determine the exact condition of underground piping without actually exposing the line. In view of this limitation, our classification (including estimated GPM loss) is intended as an aid in scheduling repairs based upon the information available, the Water Loss Consultant's judgment and site conditions at the time the leak report is being prepared. Variable factors beyond our control may alter this classification at any time. Once the leak is exposed for repair, CVWD may wish to revise the estimated GPM loss in order to establish a more accurate estimate of actual water loss for reporting purposes.

Leak Classifications are outlined in the Leak Classification and Estimation section of this proposal.

- E. Leak location may be marked in the field with environmentally friendly paint (depending on the surface/ground conditions and leak).

PROPOSAL

- F. Whenever CVWD repairs any leak detected by USA prior to completion of the field work, USA will re-survey that section of the system to be sure no extremely quiet leaks were missed due to an over-powering noisy leak sound or another variable.
- G. It is important to note that not all leaks create noise levels that can be detected using even the most sophisticated leak detection instrumentation. USA will perform all work at the highest level of professional workmanship in its industry; however, we cannot guarantee the detection of any leak.
- H. We will request that CVWD will provide a helper whenever possible and if one is not available, they will offer a point of contact for questions or assistance, particularly during the pinpointing phase.

Task 3. Reporting Phase

Overview: All data collected during the Surveying Phase and Pinpointing Phase will be compiled into reports for CVWD. An individual Leak Report will be submitted whenever leaks are pinpointed, in addition we will submit a Final Report and the end of the project.

- A. USA will provide a detailed Leak Report whenever leaks are pinpointed so that the CVWD may begin to prioritize for repairs. This detailed Leak Report will contain:
 - 1. Leak Number, type and classification for repair priority.
 - 2. Estimated Leak rate and correlation data (if applicable).
 - 3. Detailed Diagram showing leak location as well as a physical address.
 - 4. Approximate time spent pinpointing, cover type, if the leak was marked and notes regarding the nature of the leak and recommendations for repair.
- B. USA will furnish a Final Report within 10 calendar days from end of the project. You will be provided with one printed, bound copy and one pdf copy. The Final Report includes:
 - 1. Executive Summary showing individually recorded time for correlating, surveying and other time spent on the project. This summary also includes footage covered, approximated gallons per minute (GPD) loss, types of leaks found, quantity of leaks found and remarks recommending improvements that may be made to the distribution system and ways for approaching future leak detection projects.

PROPOSAL

2. Survey and Pinpointing Review explaining the procedures and methods used during this study.
3. Leak Reports each with a detailed drawing showing the leak location, the type of leak pinpointed, the leak classification, approximate time spent pinpointing, an estimate of the GPM lost, the cover type and whether the leak location was marked. In addition, whenever possible we will add the correlation justification and related correlation graphs if the leak was pinpointed using a correlator (the field drawing of the same Leak Report shall be supplied daily to CVWD whenever leaks are pinpointed).

C. If required, USA can modify or design any form to fit the CVWD requirements.

Note: A monthly progress report will be provided at the end of each calendar month if the project lasts longer than one month.

Leak Rate Estimation and Classification

In spite of the use of the most modern instrumentation, plus complete training and experience by our crews, it is impossible to determine the exact condition of underground piping without actually exposing the line. In view of this limitation, our estimates and classifications are intended as an aid in scheduling repairs based upon the information available, the Water Loss Consultants judgment and site conditions at the time the leak report is being prepared.

1. Leak Estimating

Certain equipment variables are also considered when estimating GPM (type of pipe, size of pipe, system pressure, history of leakage, etc.). Variable factors beyond our control may alter this estimate at any time. Once the leak is exposed for repair, the system maintenance crew may wish to revise the estimated GPM loss in order to establish a more accurate estimate of actual water loss for reporting purposes.

2. Leak Classification

Each leak will be classified according to size in gallons per minute (GPM) and hazard in order to aid CVWD in scheduling repairs. Leak Classifications are as follows:

PROPOSAL

Class I. Any leak which is hazardous in terms of potential undermining, possibly resulting in surface collapse, encroachment and/or damage to nearby utilities, commercial or private properties or leaks severe enough to warrant immediate repair.

Class II. All leaks that display water losses significant enough to be monitored on a regular repair schedule.

Class III. Relatively small leaks that should be repaired as workload permits.

Safety

USA is committed to the highest standards of ethical and safe work practices. We consider the safety of our employees and customers to be of primary importance. We have set forth specific safety policies and procedures which meet with state and federal regulations. Our field personnel have completed OSHA certified training programs. Copies of certificates will be provided upon request.

Our company health and safety program includes topics ranging from roles and responsibilities to critical work procedures. Job hazard analysis for each job USA performs has been documented. Our vehicles are equipped with caution lights and traffic cones. All federal, state and local traffic safety regulations shall be observed.

Equipment

USA utilizes state of the art leak detection equipment. A comprehensive leak survey requires the use of many different technologies. No two water systems are alike. The professional use of various technologies has made USA the leader in developing efficient procedures and methods designed to meet each utility's individual needs.

The current generation of leak detection equipment (newer than 2009) does not require annual calibration. Since this equipment is mostly sealed, regular calibration is only recommended by the manufacturer when repairs are required. Trained, experienced professionals operate our equipment. The list below will be used during Task 2 – Leak Detection Surveying and Task 3 – Leak Pinpointing.

A **leak noise surveyor** allows the operator to listen for leak noise by placing an acoustic sensor in contact with any access point (valve, hydrant, etc.) in the distribution system.

PROPOSAL

Sound from the pipeline is transmitted through aviator-quality headphones to allow the operator to determine if leak type noise is present. We use the follow models of leak noise surveyor:

- **FCS S-30 Leak Surveyor**
- **Subsurface LD-15**

A **leak noise correlator** is an electronic device used for Leak Detection to pinpoint leaks in pressurized water lines. Typically, correlation systems use acoustic sensors that placed in contact with the pipe, at two or more points, to detect the sound emitted by a leak. The sound data is processed through a mathematical algorithm which determines the difference in the time it takes noise to travel from each of the sensors. These are complex and sophisticated pieces of equipment that should be used only by experienced highly trained technicians. We use the follow models of correlation devices:

- **FCS TriCorr Touch Leak Locator**
- **SubSurface Leak Detection LC-2500**

A **ground microphone** is a device used for validating correlation results or for as a survey tool in areas where there are few or no access points. We use the follow models of ground microphones:

- **SubSurface LD-12**
- **Geophones**

A **line (metal) locator** is used when system maps are incomplete to assist the leak detection technician in following the path of a line for surveying as well as pinpointing. We use the follow models of line (metal) locators:

- **Goldak Model 5600 Line Locator**
- **Schonstedt model GA-52 Metal Locator**
- **Subsurface Instruments PL2000**

In addition, we use other pieces of equipment which are vital in providing our clients with a complete and successful survey of their system.

PROPOSAL

1) FCS Hydro-phone

This unit can be attached to a fire hydrant, service line or other contact point where the water can make direct contact with the transducer. We use this unit to pinpoint quieter leak noises or when sound will not travel acceptable distances for standard correlation procedures (such as with PVC lines).

2) Mark Helium Detector

This unit is used for pinpointing water leaks that do not create enough sound for acoustical type systems to be used.

3) Fisher XLG-80 Ultrasonic Leak Detection Unit

This unit is used when normal listening devices cannot pick up sound. This is accomplished by adding air to the water line. It is mainly used for leakage in walls, etc.

4) Sensor Mounting Kits

These kits are a series of detachable aluminum or steel probe rods used for contacting deep appurtenances or appurtenances full of dirt.

5) Mobile Leak Detection Vans

Our vans are fully equipped late model vehicles designed to carry safety equipment, working desk, file cabinets and storage for all the above mentioned equipment. These units carry fully equipped tool sets, hydrant wrenches, pry bars, etc. for all situations. Each van is equipped with backup survey tools as well as spare transducers and/or transducer cables in various lengths. This reduces or eliminates down time due to equipment failure. Our vehicles are also outfitted with OSHA approved safety gear.

We will select the appropriate equipment to provide the most comprehensive leak detection survey available.

End of Section

PROPOSAL

References

Citrus Heights Water Dist.

PO Box 286
Citrus Heights, CA 95611-0286
John Townsel
916-725-6873 ext. 122

Carmichael Water District

PO Box 929
Carmichael, CA 95609-0929
Scott Bair
916-483-2452

City of Eureka

531 K St.
Eureka, CA 95501
Frank Mathes
707-441-4253

LA County Dept. of Public Works

900 S. Fremont Ave.
Alhambra, CA 91803
Rea Joseph-Gonzales
626-300-3338

Paradise Irrigation District

PO Box 2409
Paradise, CA 95967
John Price
530-876-1910

Yucaipa Valley Water Dist.

12770 2nd St
Yucaipa, CA 92399
John Hull
909-797-5117

Lake County Special District

"A" Main St
Lakeport, CA 95453
Mark Dellinger
707-263-0119

City of Corona

730 Corporation Yard Way
Corona, CA 92880
Richard Betencourt
951-903-9072

End of Section

PROPOSAL

Price, Schedule & Terms

PRICING INFORMATION

Description	Rate
Leak Detection Survey (48.09 miles)	\$311.91 / mile
Mobilization Fee	\$000.00

Totals	\$14,999.75
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SCHEDULE INFORMATION

We will work closely with CVWD to ensure our work is completed before the end of the budget year.

Our crews will be scheduled for 8 hours per day, Monday through Friday.

STANDARD TERMS

In the event a project extension is desired while we are on this project the additional charge will be at the same ratio as the above schedule. This project may be extended only if our schedule permits and upon approval of the CVWD. In the event a reduction or extension of days or footage is desired, prior to our arrival please contact us for a review of the above pricing.

To expedite this project and to make sure you get the most effective water line survey for your investment, it will be necessary for you to supply a helper at all times who can assist our Water Loss Consultant with information

regarding the water system. A helper will also ensure that no areas are missed during the survey and all possible methods are utilized and to locate all lines accurately.

CONTRACT TIME - Proposal price shall be held for 90 days from proposal date.

Prices do not include any applicable taxes.

PAYMENT - USA standard terms are net 30. A service charge will be assessed on past due or delinquent accounts at the rate of 1¹/₂% per month.

End of Document

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 4
May 17, 2017

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Design Services for New Emergency Electrical Generator at the La Granada Wastewater Lift Station, Project S-962

INFORMATION ITEM:

New Emergency Electrical Generator at the La Granada Wastewater Lift Station, Project S-962 – Award of Contract for Engineering and Surveying Services

BACKGROUND:

CVWD has an existing wastewater lift station located at 1901 La Granada Way which provides sewer collection service for about 30 homes. The wastewater lift station has a capacity of 3,000 gallons and the pumps typically run about an hour a day to push wastewater into the collection system.

In case of an emergency, when electrical power is lost, the lift station can hold wastewater for about 2 – 5 hours, depending on the time of day or night, before the wet-well will overflow. To prevent a sewer overflow, alarms have been set to alert the wastewater supervisor via text and phone of the potential overflow. However, there could be a time lag between when personnel are first alerted of the power outage to the time the portable emergency electrical generator is brought to the site, which could result in a sewer overflow.



Staff has been planning to install a permanent emergency electrical generator at the lift station with an automatic transfer switch as part of CVWD's continuing effort for emergency planning and prevention of sewer overflows. This project was included in the FY 16/17 Wastewater Capital Improvement Project budget. The new system will be able to switch to emergency power automatically during a power outage so that the wastewater pumps will remain in service. The system will include alarms which will alert staff of the problem and when the emergency electrical generator goes into service.

The project will also include the installation of a concrete pad for the emergency electrical generator, fencing around the generator, and electrical work to connect the existing electrical panels. In addition, CVWD will purchase the 20kW emergency electrical generator at a cost of about \$20,000 which will be installed by the contractor.

The project is located within the Glenhaven Park owned by the City of La Canada Flintridge (LCF) and staff has been working with LCF on the project.



Crescenta Valley Water District

2700 Foothill Boulevard, La Crescenta, California 91214
Phone (818) 248-3925 Fax (818) 248-1659

Directors

Judy L. Tejeda
James D. Bodnar
Kerry D. Erickson
Kenneth R. Putnam
Michael L. Claessens

Officers

Thomas A. Love, P.E.
General Manager
Ron L. Mitchell
Secretary-Treasurer

March 31, 2017

Mr. Gary Roepke
Cannon Corporation
11900 Olympic Blvd, Suite 530
Los Angeles, CA 90064

Subject: Request for Proposal - Professional Engineering Services for Installation of New Emergency Electrical Generator at the LA Granada Wastewater Lift Station, Project S-962

Dear Mr. Roepke:

The District is requesting a "Not-to-Exceed" proposal from your firm to provide surveying and engineering services for the installation of a new emergency electrical generator at the LA Granada Wastewater Lift Station (Lift Station) located within the Glenhaven Park located within the City of La Canada Flintridge (LCF).

CVWD has an existing wastewater lift station, which provides sewer collection service for about 30 homes. The wastewater lift station has a capacity of 3,000 gallons and the pumps typically run about an hour a day to push wastewater into the collection system.

In case of an emergency, when electrical power is lost, the lift station can hold wastewater for about 2 – 5 hours, depending on the time of day or night, before the wet-well will overflow. To prevent a sewer overflow, alarms have been set to alert the superintendent via text, e-mail, and phone of the potential overflow. However, there could be a time lag between when personnel are first alerted of the power outage to the time the portable emergency electrical generator is brought to the site, which could result in a sewer overflow.



CVWD would like to install a permanent emergency electrical generator at the lift station with an automatic transfer switch as part of CVWD's continuing effort for emergency planning and prevention of sewer overflows. The new system will be able to switch to emergency power automatically during a power outage so that the wastewater pumps will remain in service. The system will include alarms which will alert staff of the problem and when the emergency electrical generator goes into service.

The project will also include the installation of a concrete pad for the emergency electrical generator, fencing around the generator, and electrical work to connect the existing electrical panels as shown on the attached plan. CVWD will purchase the 20kW emergency electrical generator at a cost of about \$20,000 which will be installed by a contractor.

The scope of work will include the following:

1. Provide a topographical survey of the project site including centerlines, right-of-way, property lines, building, inverts of sewer manholes, and other appurtenances to create a proper As-Built drawing of the Lift Station
2. Create a base map from the topographical survey and include all existing utilities
3. Provide a preliminary study to determine if a new gravity sewer line can be installed from the lift station to an existing sewer manhole on Waltonia Avenue utilizing information from the topographic survey
4. Provide construction plans (See attached preliminary design plans) for the installation of the new emergency electrical generator and a chain-link fence enclosure.
5. Provide an "As-built" drawing of the electrical system including from the existing SCE meter cabinet to the existing power panel (See attached preliminary ATS wiring diagram).
6. Provide an electrical design for the installation of an automatic transfer switch including wiring diagram , conduit sizes and grounding system
7. Provide recommendation for size of electrical generator for CVWD to purchase
8. Prepare technical specifications that will be included in CVWD's bid documents
9. Prepare an engineering cost estimate for the project

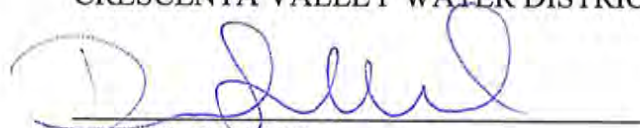
CVWD will provide as-built drawings and any reports for the consultants use. CVWD will obtain permits from LCF and AQMD (if necessary) for the new emergency electrical generator.

One (1) copy of the proposal should be submitted as a PDF file via e-mail no later than 12:00 pm on Wednesday, April 12, 2017. The original proposal should be mailed to my attention at: Crescenta Valley Water District, 2700 Foothill Boulevard, La Crescenta, CA 91214.

If you have any questions or comments, please contact me at (818) 236-4119 or e-mail me at dgould@cvwd.com.

Very truly yours,

CRESCENTA VALLEY WATER DISTRICT



David S. Gould P.E.

District Engineer

DSG:sdi

Enclosures:

cc:

Raymond Dodge – CVWD
Dennis Maxwell- CVWD

DISCUSSION:

This project was originally planned to be designed in-house by District staff and a majority of the design was completed. However, with staff's current workload; they need assistance from a consultant to complete the design since the project was a necessary upgrade to the lift station.

Staff sent a request for proposal to Cannon Corporation to provide engineering and surveying services to complete the design on March 31, 2017. Cannon provided a proposal for a cost of \$19,822 to complete the design and prepare contract documents.

RECOMMENDATION:

It is staff's recommendation to award the contract to Cannon to provide design and surveying services and to complete this necessary project. This will be included in the Wastewater Capital Project Budget for FY 17/18.

Prepared & Submitted by:

A handwritten signature in black ink, appearing to read 'David S. Gould', written over a horizontal line.

David S. Gould, P.E.
District Engineer

Attachments:

1. CVWD- RFP letter
2. Cannon Proposal dated 4/28/17

g:\engineering committee\2017 ec memo\05-17-17 ecm memo - lift station design.docx



April 27, 2017

Mr. David S. Gould, P.E.
District Engineer
Crescenta Valley Water District
2700 Foothill Boulevard,
La Crescenta, Ca 91214

**PROJECT: LA GRANADA LIFT STATION – EMERGENCY ELECTRICAL GENERATOR,
PROJECT S-962 REVISED**

Dear Mr. Gould:

This proposal is in response to Crescenta Valley Water District's (CVWD) request to provide surveying and engineering services for the installation of a new emergency electrical generator at the La Granada Wastewater Lift Station at Glenhaven Park in the City of La Canada Flintridge. It is our understanding that during an emergency when power is lost, the superintendent is alerted and a portable emergency generator is brought onsite to keep the lift station in operation. In the time that it takes to get the portable emergency generator onsite, the wet well at the lift station could reach capacity, causing the sewer to overflow.

The installation of the new permanent electrical generator at the lift station is part of CVWD's continued effort for emergency planning and potential sewer overflow prevention. This new system will be able to automatically switch to emergency power during a power outage so that the wastewater pumps remain in service.

For this project, Cannon has a team of survey and electrical experts to complete the scope of services outlined in the RFP, dated March 31, 2017.

We are excited to work with you on this project. I will call you next week to further discuss this proposal. The fees quoted in this proposal are valid for 60 days from this date and are based upon current California Prevailing Wages.

Sincerely,

A handwritten signature in black ink that reads "Gary D. Roepke". The signature is fluid and cursive, with the first name "Gary" being more prominent.

Gary D. Roepke, PE
Senior Principal Engineer, Public Infrastructure Division
C 48693



PROJECT UNDERSTANDING AND APPROACH

The La Granada Wastewater Lift Station serves 30 homes and has a capacity of 3,000 gallons. The lift station operates for approximately one hour per day to pump the wastewater into the collection system. In the event of an emergency when power is lost, an alert is sent to the superintendent indicating the potential overflow of the wet well. The wet well at the lift station is capable of holding two to five hours of wastewater before it overflows. A portable emergency generator is brought onsite to bring the lift station back in operation. In the time that it takes to get the portable emergency generator onsite, the wet well could reach capacity, causing the sewer to overflow.

This project involves a topographic survey of the project site, an as-built survey of the interior of the lift station, design of a new permanent emergency generator, an automatic transfer switch (ATS), concrete pad for the emergency electrical generator, a fence around the generator, and electrical work to connect the existing electrical panels to the new backup power system. During a power outage, the new system will be able to automatically switch to the emergency power so that the lift station remains operational, eliminating the potential for sewer overflow. The system will also include alarms that will alert staff of any problems and when the emergency electrical generator goes into service.

Our approach to the successful completion of this project consists of providing professional services in two progressive phases: Topographic Survey and As-Built Survey, and Design and Construction Documents. The phases have been carefully sequenced to provide an efficient schedule while still remaining realistic and achievable. Our schedule for this work is to complete it as soon as possible. We will keep CVWD informed of our progress. We estimate that we will have the design completed in 60 days, including CVWD reviews.

SCOPE OF WORK

This scope of work was developed based on the Request for Proposal dated March 31, 2017.

Phase 1. Topographic Survey and As-Built Survey

Task 1 – Project Kick-off

- Task 1.1 Kick-off Meeting

We will organize and attend a Project Kick-Off Meeting and site visit with CVWD staff. A site visit will be to gather pertinent data regarding the existing electrical system.

Deliverables: Kick Off Meeting Agenda and Minutes

- Task 1.2 Project Management and Meetings

The project will require project setup, scheduling, controlling, and correspondence with CVWD. Correspondence includes telephone conversations, emails, status reports, and project memorandums. Additionally, project management will include monthly meetings and detailed invoices.



Deliverables: Meeting Agenda and Minutes, Progress Reports, Miscellaneous Correspondence

Task 2 – Topographic Survey

- Task 2.1 Topographic Survey

We will provide a topographic survey for the site including centerlines, right-of-way, property lines, building, inverts of sewer manholes, and other appurtenances to create a proper as-built drawing of the lift station. The survey will be provided in AutoCAD format of 2011 or earlier.

Deliverables: AutoCAD Base Map

Phase 2. Design and Construction Documents

Task 1 – Prepare and Submit Construction Design Documents (90%)

Based on the findings and results of the previous tasks, we will prepare and submit design plan packages at the 90% approximate completion level for the emergency electrical generator, concrete pad, and chain-link fence/slump stone wall enclosure. The as-built drawing of the electrical system will include from the existing SCE meter cabinet to the existing power panel. The electrical design for the installation of the automatic transfer switch will include a single line diagram, electrical plans indicating conduit and wire sizes and a grounding system. In addition, a size of the electrical generator will be recommended for the CVWD to purchase. The technical specifications will be provided by Cannon to go along with CVWD's front end specifications.

The anticipated list of the drawings in the plan set includes the following:

- Title Sheet
- General Notes and Abbreviations
- Civil Plan
- Electrical Notes, Abbreviations and Legends
- Single Line Diagram
- Electrical Plans including Grounding
- SCADA Wiring Diagram for Generator and ATS I/O
- Electrical Details

Deliverables: 90% Plans (three hard copies and one PDF via email), Specifications (one copy in Word via email), and Opinion of Construction Cost (one copy in Excel via email)

Task 2 – 90 % Design Review Meeting

We will meet with CVWD staff to review the comments and revisions for the 50% plans.

Deliverables: Meeting Agenda and Minutes



Task 3 – Final Design

Based on the finalized project design issues resolved during the preceding tasks, we will prepare and submit a Final Construction Documents Bid package for the emergency electrical generator, concrete pad, and chain-link fence enclosure. This submittal package will contain complete construction plans, technical specifications, and an Opinion of Construction Cost. Final plans will incorporate comments from CVWD's review of the 100% design plan package. Bid documents will be prepared in CVWD's standard format. We will provide electronic copies and three hard copy sets of the complete bid package to CVWD..

Deliverables: Final plans (one signed bond and one PDF via email), Specifications (one copy in Word via email), and Opinion of Construction Cost (one copy in Excel via email)

DELIVERABLES

- 90% CD Package
- Final Construction Documents

ASSUMPTIONS

The following assumptions apply to this proposal:

- Cannon is not responsible and cannot be held accountable for the accuracy of as-builts or record drawings provided by Agencies or utility providers. Cannon has no means of determining whether subsurface features were constructed per the construction/improvement drawings and does not claim to do so. Potholing of utilities should be performed by others, if there are concerns or uncertainties regarding the subsurface utilities.
- All data prepared by others and provided to Cannon will be made available in a digital format, compatible with our systems. It is also understood that the information and technical data provided and prepared by others, on CVWD's behalf, may be used by Cannon in performing its services and is entitled to rely upon the accuracy and completeness thereof.
- A geotechnical report prepared by a licensed Geotechnical engineer will be provided to Cannon. Lateral design parameters and foundation recommendations will be necessary to complete our design. If no geotechnical report is provided, we will design the structures per the minimum design criteria listed in the applicable design code where acceptable by the building official.
- Mapping will be based on available local agency vertical datum and an assumed horizontal datum, unless specifically requested otherwise.
- Boundary corners for the site have been established and monumented by others. Cannon will use record data for establishing the project boundary.
- Cannon must be informed of any additional requirements to be placed on this survey prior to your authorization to commence work, as said requirements may affect the items above.
- If information depicted on the proposed survey should lead to further investigation by Cannon staff, additional fees may be incurred, and are not included within this scope of services. Cannon will handle requests of this nature under separate written authorization.
- We assume California Prevailing Wage Rates apply to this project.



- CVWD will provide as-built drawings of the SCADA panel. Cannon's responsibilities will only include I/O between the existing SCADA panel and the generator and automatic transfer switch.
- During the site visit to gather electrical data, panels may need to be opened. It is assumed CVWD staff will open these panels for Cannon employees to obtain the necessary information.

EXCLUSIONS

The following exclusions apply to this proposal:

- CVWD will obtain permits from the City of La Canada Flintridge and AQMD, if necessary, for the new emergency electrical generator.
- Soils Engineering
- SCE coordination. We assume that since the generator connection will be on the load side of the main disconnect, SCE will not need to be involved in this project.

FEES

Fees are based on the rates per the enclosed fee schedule and do not include Agency checking or recording fees, or title company fees. It is our understanding that this project does not qualify for California Prevailing Wages.

<i>Phase 1. Topographic Survey and As-Built Survey</i>	<i>\$ 6,340</i>
<i>Phase 2. Design and Construction Documents</i>	<i>\$13,482</i>
Total Time and Materials Not to Exceed:	\$19,822



2017 Fee Schedule

Bill Rate Ranges
Subject to change.

Accounting Specialist	\$ 45 - \$ 65
Administrative Assistant I - IV	\$ 50 - \$ 70
Assistant Resident Engineer	\$ 130 - \$ 143
Associate Construction Engineer	\$ 110 - \$ 120
Associate Engineer	\$ 140 - \$ 175
Associate Landscape Architect	\$ 135 - \$ 145
Associate Planner	\$ 140 - \$ 150
Automation Analyst	\$ 100 - \$ 110
Automation Design Engineer	\$ 110 - \$ 120
Automation Specialist	\$ 135 - \$ 145
Automation Technician	\$ 95 - \$ 105
Business Development Associate	\$ 120 - \$ 130
CADD Tech	\$ 85 - \$ 95
CADD Manager	\$ 100 - \$ 110
Chief Planner	\$ 155 - \$ 165
Chief Surveyor	\$ 175 - \$ 195
Clerical Assistant	\$ 50 - \$ 65
Construction Admin Assistant	\$ 85 - \$ 90
Construction Coordinator	\$ 90 - \$ 110
Construction Engineer	\$ 165 - \$ 175
Construction Inspector	\$ 90 - \$ 125
Construction Manager	\$ 135 - \$ 165
Controller	\$ 70 - \$ 110
Design Engineer	\$ 110 - \$ 125
Electrical Design Engineer	\$ 120 - \$ 130
Engineer Tech	\$ 90 - \$ 100
Engineering Assistant I - II	\$ 70 - \$ 90
Expert Testimony (Deposition/Trial)	\$ 250 - \$ 450
Forensics Engineer I - III	\$ 230 - \$ 280
Forensics Office Administrator	\$ 150 - \$ 175
Forensics Research & Investigation	\$ 300 - \$ 350
Forensics Survey Tech I - III	\$ 230 - \$ 280
Forensics 2-Man Survey Crew	\$ 350 - \$ 375
GIS Specialist	\$ 140 - \$ 150
GIS Tech	\$ 115 - \$ 125
Grant Funding Manager	\$ 125 - \$ 140
I&E Construction Coordinator I - II	\$ 90 - \$ 110
I&E Services Coordinator	\$ 80 - \$ 90
Information Systems Admin I - II	\$ 70 - \$ 100
Land Surveyor I - V	\$ 140 - \$ 180
Landscape Architect	\$ 105 - \$ 115
Landscape Architect CADD Tech I - II	\$ 55 - \$ 65
Landscape Designer I	\$ 70 - \$ 80
Lead Automation Analyst	\$ 116 - \$ 126
Lead Automation Specialist	\$ 147 - \$ 157
Lead Automation Technician	\$ 105 - \$ 115
Lead Designer	\$ 100 - \$ 118
Marketing Coordinator	\$ 60 - \$ 120
Marketing Director	\$ 140 - \$ 180
Office Engineer	\$ 120 - \$ 130
Planner I - IV	\$ 80 - \$ 115

Planning Assistant I - II	\$ 55 - \$ 70
Principal Construction Engineer	\$ 185 - \$ 195
Principal Designer	\$ 105 - \$ 129
Principal Engineer	\$ 160 - \$ 195
Programmer I - II	\$ 140 - \$ 165
Project Coordinator I - IV	\$ 85 - \$ 125
Project Designer I - IV	\$ 80 - \$ 120
Project Engineer	\$ 120 - \$ 145
Project Manager / Sr. Principal	\$ 210 - \$ 220
Receptionist	\$ 50 - \$ 65
Resident Engineer	\$ 155 - \$ 165
Sr. Associate Engineer	\$ 150 - \$ 175
Sr. Automation Analyst	\$ 126 - \$ 136
Sr. Automation Specialist	\$ 163 - \$ 170
Sr. Automation Technician	\$ 126 - \$ 136
Sr. CADD Tech	\$ 90 - \$ 110
Sr. Construction Engineer	\$ 175 - \$ 195
Sr. Construction Manager	\$ 175 - \$ 200
Sr. Consultant/Director	\$ 163 - \$ 250
Sr. Consultant, Public Admin/Finance	\$ 155 - \$ 165
Sr. Environmental Planner	\$ 153 - \$ 165
Sr. Land Surveyor	\$ 180 - \$ 190
Sr. Landscape Architect	\$ 153 - \$ 163
Sr. Planner	\$ 153 - \$ 163
Sr. Principal Designer	\$ 110 - \$ 139
Sr. Principal Engineer	\$ 175 - \$ 230
Sr. Project Designer	\$ 105 - \$ 130
Sr. Project Engineer	\$ 130 - \$ 150
Sr. Resident Engineer	\$ 165 - \$ 175
Structures Representative	\$ 145 - \$ 155
Survey Engineering Assistant I	\$ 85 - \$ 95
Survey Manager	\$ 180 - \$ 190
Survey Technician I - VI	\$ 90 - \$ 150
Technician	\$ 115 - \$ 125
Technical Writer	\$ 80 - \$ 120
3D HDS Data Modeling I - III	\$ 95 - \$ 125

Survey Crew Rates - Regular

One-Man Field	\$ 130 - \$ 205
Two-Man Field	\$ 185 - \$ 285
Three-Man Field	\$ 245 - \$ 360
One-Man UMO - HDS	\$ 155 - \$ 220
Two-Man UMO - HDS	\$ 238 - \$ 285
Three-Man UMO - HDS	\$ 350 - \$ 375

Survey Crew Rates - Prevailing Wage

One-Man Field	\$ 155 - \$ 220
Two-Man Field	\$ 238 - \$ 325
Three-Man Field	\$ 285 - \$ 425

Electrical - Prevailing Wage

Electrician	\$ 110 - \$ 165
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All of the above hourly rates include all direct labor costs and labor overhead, general and administrative expenses and profit.

If the client requests, or the client's schedule requires work to be done on an overtime basis, a multiplier of 1.5 will be applied to the above rates for weekdays and 2.0 for weekends and holidays.



2017 Fee Schedule

Bill Rate Ranges

Subject to change.

Other Direct Charges

In-House Reproduction

Printing/Copies 8 1/2 x 11	\$0.05 per page
Printing/Copies 11 x 17	\$1.00 per page

Black Line Plots	\$2.00 per page
Color Plots	\$5.00 per page

Outside Reproduction Cost + 15%

Travel and Related Subsistence	Cost + 15%
Truck or Field Vehicle	\$80.00 per day
Mileage Reimbursement	IRS Rate per mile

CAD and Simulation Software	\$15.00 per day
Automation & Electrical Materials	Cost + 25% (+tax)

Subconsultant Fees Cost + 10%

All direct expenses, such as special equipment, shipping costs, travel other than by automobile, parking expenses, and permit fees will be billed at the actual cost plus 15%.

If the client requests, or the client's schedule requires work to be done on an overtime basis, a multiplier of 1.5 will be applied to the stated rates for weekdays for daily hours in excess of 8 as well as weekends and a multiplier of 2.0 for daily hours in excess of 12 and holidays.

If the client requests field services to be provided outside of normal working hours (between 6:00 p.m. and 6:00 a.m.), a multiplier of 1.5 will be applied to the stated rates.

Survey Crews and Automation Field staff are billed portal to portal, and mileage charges are included in the hourly rate. A minimum charge of 4 hours will be charged for any Automation Field Service calls outside of normal working hours (between 6:00 p.m. and 6:00 a.m.).

The stated rates are subject to change, typically on an annual basis.

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 5
May 17, 2017

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: **Project Status - FY 16/17 - Capital Improvement Project Program**

FY 16/17 – CIP Project Schedule & Cost Estimate - The FY 16/17 Capital Improvement Project (CIP) program includes the following projects which are summarized below:

1. **Rehabilitation of Well 7** – Well 7 was planned to be rehabilitated in FY 14/15, yet, Well 7 maintained its well capacity during the year and taking Well 7 out of service would have meant the loss of water production during the rehabilitation period. Therefore, this project was deferred until FY 16/17.

The pump in Well 8 failed in February 2017 and this project replace the Well 7 project for FY 16/17.

Project Schedule: Well 8 to be completed by May 23, 2017

Cost Estimate: \$42,000

2. **Nitrate Removal Treatment Plant at Well 2** – CVWD received a grant under Proposition 84 2015 IRWM Implementation Grant with the Department of Water Resources (DWR) to install a new nitrate removal treatment plant and re-activation of Well 2. Staff has been working with SA Associates on the design of the project and APTwater on the design of the new nitrate removal treatment plant.

The re-activation of Well 2 and the new nitrate removal treatment facility will allow CVWD to utilize a local water resource, increase CVWD's ability to use its adjudicated rights within the Verdugo Basin, reduce CVWD's dependence on imported water from MWD, and reduce nitrates levels within the Verdugo Basin.

5/17/17 Project Update:

- 50% Technical Design Memorandum – complete
- SA Associates and APT Water working on 100% design submittal
- Plans has been submitted to City of Glendale for plan comments and approvals
- Permits should be completed by May 26, 2017
- Plans has been submitted to Water and Power regarding upgrading electrical connection; Cost estimate of \$31,342
- Request for Quotes (RFQ) for the purchase of the electrical motor control center (MCC); Award Contract at May 16, 2017 Board Meeting
- RFQ for Pre-fabricated buildings; staff is reviewing the design and will be discussed at the June 2017 Engineering Committee Meeting
- Final design and specifications should be completed by early June 2017, the project advertised for bids at the June 20, 2017 Board meeting, and the construction contract will be awarded at the August 2017 Board Meeting
- Construction should begin October 2017 and completed by the end of April 2018
- Well 2 should be in service by May 2018

Cost Estimate: - FY 16/17 - \$290,000 and remainder to be included in FY 17/18 CIP Budget

3. **Proposition 50 - Emergency Water Supply Interconnection Between LADWP, CVWD, and FMWD** - The new interconnection will allow CVWD to receive an emergency water supply from LADWP water and the water transferred to the FMWD's System via existing piping, reservoirs, and upgrades to existing FMWD interconnections.

The project will give CVWD and FMWD the capability to offset the impact of a shutdown of the Metropolitan Water District's (MWD) Weymouth Plant, located in La Verne, which is the only source of water to FMWD during a planned or unplanned emergency.

The overall project is near completion with the construction at Ordunio Reservoir completed and the Chloramination Station at Ocean View Reservoir nearly complete. The next step is testing of the interconnection system between the three agencies and obtaining final approval from the State Water Resources Control Board.

5/17/17 Project Update:

- Chloramination Building including electrical work and treatment equipment – complete
- Additional piping for FMWD connection should be completed by May 23, 2017
- Water transfer from FMWD to CVWD including “break point” chlorination operations have been successfully tested
- Quotes have been requested for SCADA upgrades from TESCO Controls for the Ocean View Reservoir including the additional information for the Chloramination Station
- Staff is finalizing Claim No. 3 for grant reimbursement from DDW and should be submitted by June 2017
- DDW has preliminary granted a time extension for project completion to August 2017

Cost Estimate: - Carry over from FY 15/16 - \$125,000

4. **Crescenta Valley County Park Storm Water Recharge Facility Study** - The Crescenta Valley County Park Stormwater Recharge Project Facility Study (Study) was conducted to provide important data and geologic information to determine if portions of Crescenta Valley County Park in the La Crescenta area of Los Angeles County can be utilized for storm water capture for groundwater recharge. The Study is a feasibility study which will be called Phase 1 of a two-phase project to create storm water capture for groundwater recharge to maintain water levels, so there is not a wide fluctuation in groundwater levels during dry and wet rainfall years. The Study will investigate CVWD's ability to construct facilities to divert stormwater flow and dry weather runoff to infiltration basins for groundwater recharge within the Verdugo Basin, and reduce surface water runoff from the existing parking areas. Recharge of stormwater runoff will help improve groundwater quality, increase water-supply reliability, and improve surface water quality in downstream receiving waters.

5/17/17 Project Update:

- DWR approved the Crescenta Valley County Park Stormwater Recharge Project Facility Study

Cost Estimate: - Carry over from FY 15/16 - \$28,270

5. **Crescenta Valley County Park Storm Water Recharge Facility Preliminary Design** – Staff will be utilizing the information from the Study to create preliminary design plans and cost estimate which will be used for submittal of a DWR – Proposition 1 Stormwater Recharge implementation Grant. Staff will be utilizing consultants to assist in preparing the preliminary design plans and the Grant Application.

5/17/17 Project Update:

- The latest communication from DWR was that the Proposition 1 Stormwater Recharge Implementation Grant Application would be due in early 2018

Cost Estimate: - \$60,000

6. **Steel Reservoir Rehabilitation at Oak Creek Reservoir #2** - The District has two (2) 1.6 MG steel tanks at its Oak Creek Reservoir site which were built in 1958 and 1961. The Oak Creek Reservoirs were re-coated and seismic structural upgrades in 2001. In 2005, the reservoirs were inspected and the report indicated random general corrosion on the roof and rafters. In 2011, the reservoirs were again inspected and the report stated that there was increased corrosion on the roof and rafters above the water line. The report recommended sand blasting, removing the coat, and re-coating the interior roof and shell. In addition, the report stated that structural members damaged by the corrosion should also be replaced.

5/17/17 Project Update:

- Project deferred to FY 17/18 and will include Oak Creek Reservoir #1

Cost Estimate: - \$900,000 – Deferred to FY 17/18 CIP

7. **Pipeline Replacement - Mills Plant Pumphouse Replacement** – The District’s goal is to replace a minimum of 2,000 liner feet of pipeline, 50 years or older, per year as shown in the FY 16/17 Budget. Staff’s original plan was to replace the water mains on the 2700, 3000, & 3100 Blocks of Brookhill Avenue. Staff recommended at the last Engineering Committee meeting to substitute the original project with replacement of the 8-inch transmission main on the east side of Pennsylvania Ave which delivers water from the Mills Plant to the Paschall Booster station, which has recently had three (3) major main breaks.

5/17/17 Project Update:

- Design and specification - complete
- Construction starting May 15, 2017 and completed by the beginning of July 2017

Cost Estimate: - \$600,000 Budget; Revised cost estimate - \$441,500

8. **Lower Pickens Canyon Pipeline and Slope Replacement Project** – In May 2015, the 8-inch Lower Pickens Canyon Pipeline located within the easterly slope of Pickens Canyon, near the 5800 Block of Ocean View had a water main break which caused damage to the existing slope. An interim slope repair project was completed in February 2016 to stabilize the exposed pipeline and the exposed slope.

5/17/17 Project Update:

- Design plans and specifications - complete
- Construction started March 28, 2017 and completed May 19, 2017

Cost Estimate: - \$500,000 Budget; Total Cost Estimate - \$625,000

9. **Annual Booster Pump Replacement** – Staff plans on replacing one or two booster pumps per year as part of the annual budget. For FY 16/17, Booster 12 at Markridge will be replaced. Booster 12 is a 600 gpm pump which was taken out of service in June due to a pump failure. Booster 12 was installed in 1998 and has had over 17,000 hours of use. Booster 12 and Booster 25 deliver water from Zone 5 at the Markridge Reservoir to Zone 8 and the Cresta Heights Reservoirs.

General Pump Company provided an inspection report stating that the pump assembly should be replaced and the motor should be refurbished. Staff has reviewed the recommendations and is proceeding with the pump replacement.

5/17/17 Project Update:

- General Pump Company completed the work in September 2016

Cost Estimate: - \$50,000 Budget; Final Cost - \$32,327

10. **Paschall Booster Station Piping Upgrades and New Motor Control Center** – The Paschall Booster Station located on Briggs Avenue was constructed in 1955 and is one of three CVWD connections to FMWD. The existing valves on the inlet side of the two booster pumps are broken in the open position and the main valve to the inlet to the booster pumps is in poor condition, which needs to be replaced. Also, the existing electrical motor control center (MCC) needs to be replaced as part of CVWD’s ongoing MCC replacement program.

Staff’s goal is to re-design the station to replace the valves and create easier access to the valves in the future, re-design the storm drain constructed over the valve area, take this opportunity to re-evaluate the layout of the Station for ease of use and future maintenance, and investigate possible hydraulic surges at the station.

The project will be a two-year project with the design being completed in FY 16/17 and construction in FY 17/18.

5/17/17 Project Update:

- Design of the Project deferred to FY 17/18
- Construction deferred to FY 18/19

Cost Estimate: - Deferred

11. **Rehabilitation Surge Tanks at Glenwood** - CVWD has an existing surge tank for three (3) booster pumps located at the Glenwood Plant. The purpose of the surge tank is to defuse a water surge wave during an outage event and protect the booster pumps. The surge tank was installed in 1955 and needs to be rehabilitated with an air-surge system. Staff has been working with GEI Consultants on the design of this project. The recommendations included resizing the piping and replacing the surge tank equipment. This project was deferred from FY 15/16 CIP to the FY 16/17.

5/17/17 Project Update:

- Project deferred to FY 17/18

Cost Estimate: - \$65,000 for construction.

12. **Seismic Sensors & Valve Actuators at Dunsmore and Pickens Reservoirs** – The District has been working on installing seismic sensors and valve actuators on the outlet valves for each reservoir to prevent water loss during an earthquake event. The seismic sensor detects ground movement and the valve actuators will automatically close the valve and thereby containing the water for public health. The District has ten (10) of these systems installed on the 17 tanks and the program is to install 2 seismic sensors each year for the next three years.

CVWD will order the equipment from AES, Inc, who will assist with the installation and staff will install the concrete pads and electrical conduits for the system.

5/17/17 Project Update:

- Dunsmore Reservoir - completed
- Pickens Reservoir – Field works are installing a new access vault for the inlet/outlet, installation should be completed by the end of June 2017
- SCADA/Telemetry controls provided by Tesco Controls should be completed by the end of March 2017

Cost Estimate: - \$75,000

The attached project schedule shows the schedule for FY 16/17 and the carry-over projects from FY 15/16 for discussion with the Engineering Committee.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. FY 16/17 CIP Cost and Project Schedule

Crescenta Valley Water District

Design and Construction Schedule for FY 16/17

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