

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

To be held on
May 3, 2023 at 3:00 PM

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

Posted May 2, 2023 at 3:00 PM

TELECONFERENCING NOTICE

This meeting will be conducted in person at the address listed above. Members of the public may also participate virtually by 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: 870 1578 2381

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/87015782381>

If there is a disruption of service, this meeting will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required.

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 Item(s)

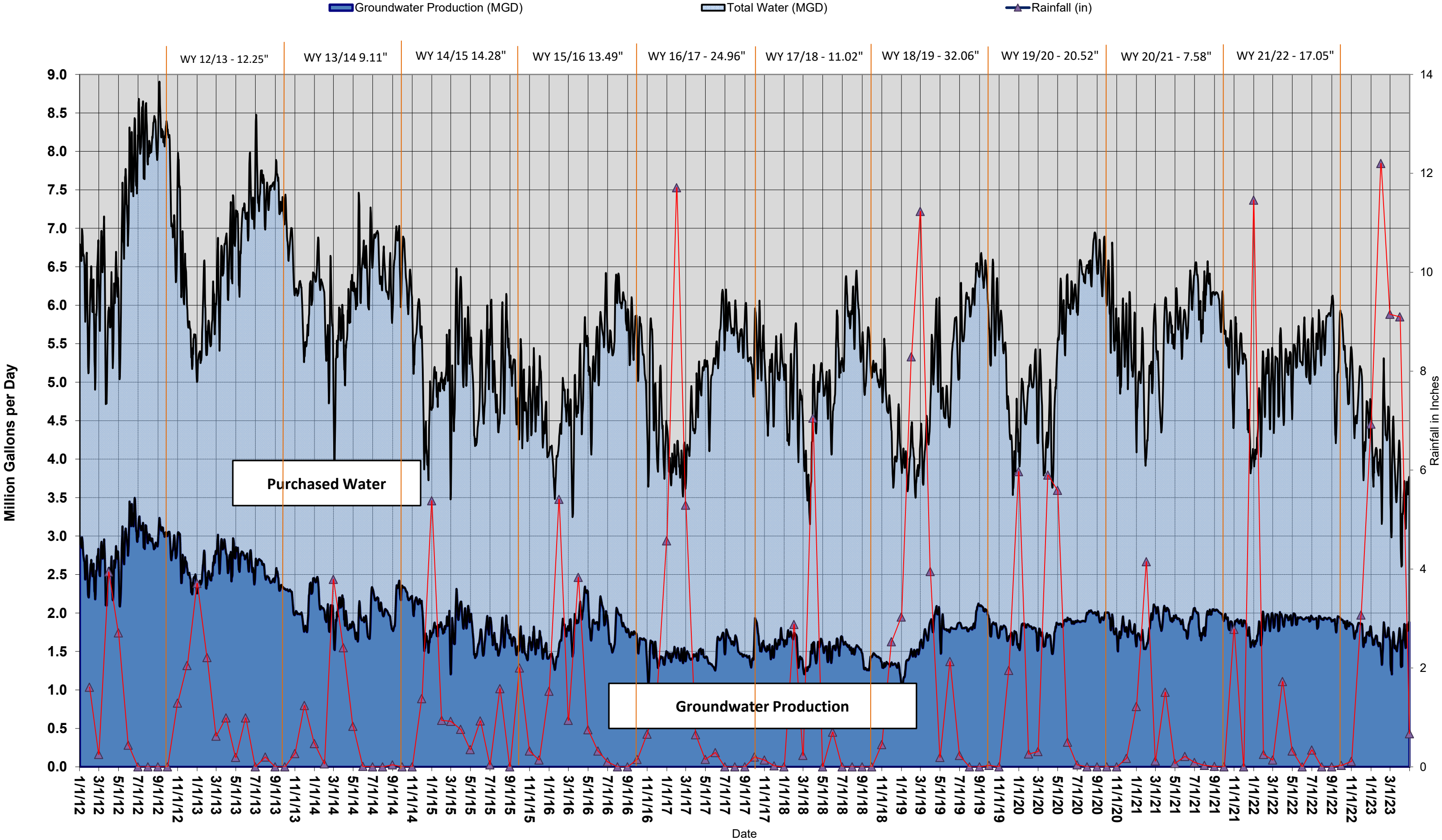
The public shall have an opportunity to comment on any action item as each item is considered by the Committee. This opportunity is non-transferrable, and speakers are limited to one two-minute (2) comment each.

1. Status of Local & Imported Water Supply
2. GIS Update and Demonstration
3. FY 23/24 CIP Budget Review
4. Status Update - FY 22/23 Capital Improvement Project Budget Update

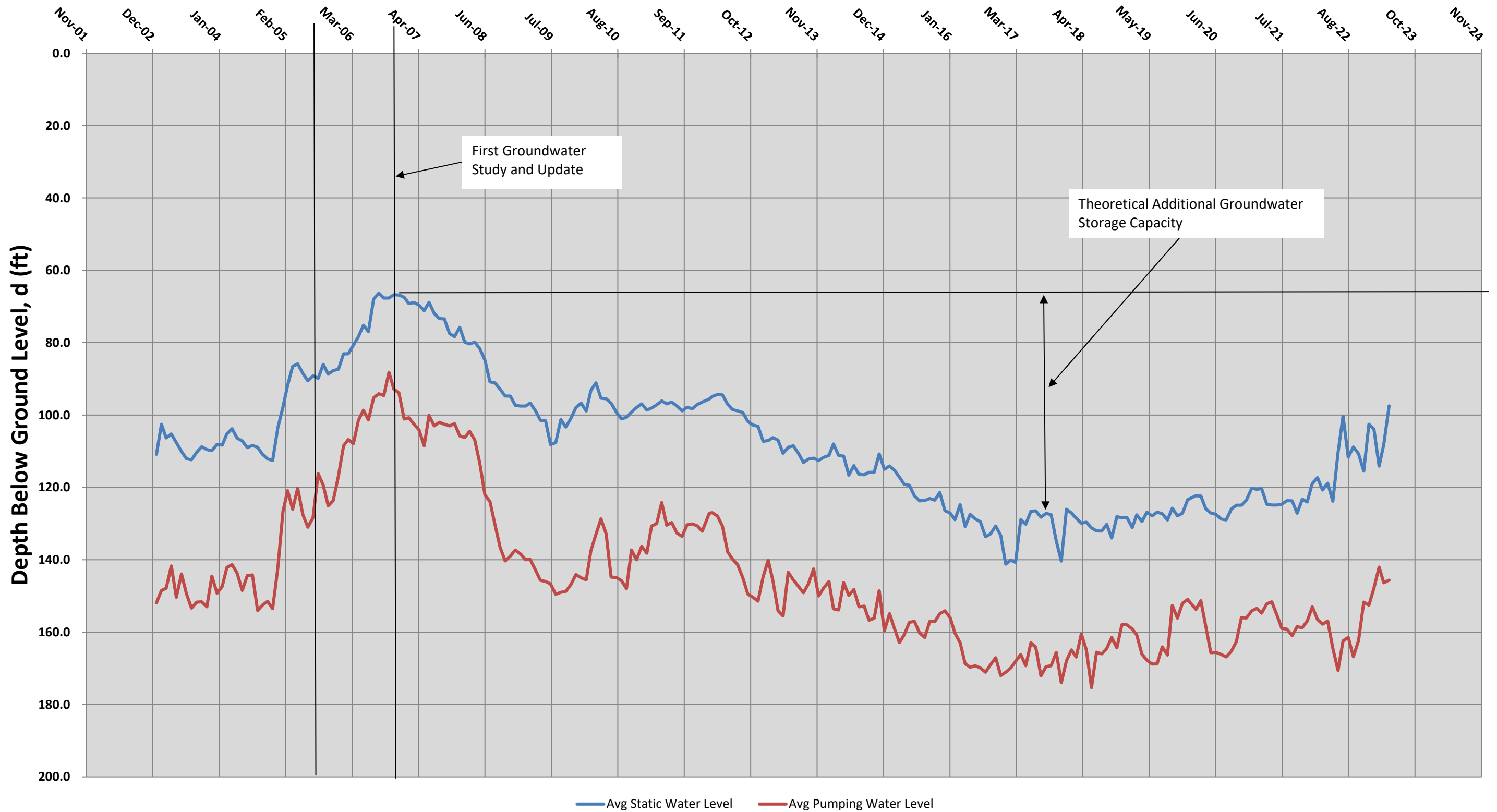
Committee Members' Request for Future Agenda Items

Adjournment

Water Production Chart w/ Rainfall 2012-2023



Average Well Elevation Levels 2003-Present



CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
May 3, 2023

To: Engineering Committee
From: Brook Yared – Interim Director of Engineering and Operations
Subject: Graphical Information System (GIS) Services, Project M-1061

INFORMATION ITEM:

Graphical Information System (GIS) Services, Project M-1061 – Discussion regarding authorizing the General Manager to enter an agreement with Akel Engineering Group, Inc. to provide GIS support services to upgrade CVWD's GIS System at a cost of \$65,909 and establish a contingency amount of \$6,591 (10% of contract) to cover the cost of additional work.

BACKGROUND:

As part of 2022 update of CVWD's Strategic Plan update, GIS and asset management were initiatives that were selected to enhance Strategic Plan Goal 3: Efficiency Through Technology.

CVWD had contracted with IDModeling (IDM) to establish our hydraulic model while doing the last water master plan in 2007. CVWD initially began incorporating GIS as an asset management tool in 2004 as part of CVWD's first attempt at putting together a hydraulic model. There was a system update in 2008 that incorporated CVWD's sewer system. Since then, CVWD has installed approximately several miles of new water main, replaced various valves and added additional water services for developer projects. The new pipes, valves, meters, and appurtenances associated with these capital improvements have not been included in the current GIS database.

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

The last major GIS update was in 2020 but the water network is incomplete and does not incorporate changes to the system associated with Capital Improvement Projects. Additionally, there are known inaccuracies in the GIS related to how the data was developed over the last 19 years. Staff has worked to compile these inaccuracies to make those corrections.

DISCUSSION:

It was the Department's original intent to update the GIS system with current staff as time allowed. However, the number of new developer projects and O&M projects has remained consistently high, which has not allowed current staff to fully concentrate on the detailed work necessary to update the GIS system. Meanwhile, the District has a more immediate need for a fully updated GIS database to complement other Strategic Plan goals, primarily proactive asset management such as hydrant and valve replacement, meter maintenance, and shutdown scenario development, just to name a few.

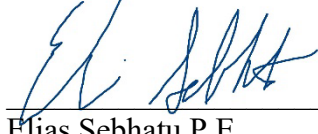
Staff has worked with Akel Engineering on the 2018 GIS update and Hydraulic Model development and requested a proposal to update CVWD's GIS system. Akel provided a proposal with scope of work that includes reviewing and updating CVWD's existing GIS system and expanding parcel data along CVWD existing sewer service area.

Account Description	Amount
Admin Consulting - GIS/Hydraulic Model Update	\$70,000
M-1061 - GIS Support Services	(\$65,909)
M-1061 – 10% Contingency for cost of unforeseen or additional work	(\$6,591)
Total Cost Estimate	(\$72,500)
Amount Remaining in Admin Consulting – GIS/Hydraulic Model Update	<u>(\$2,500)</u>

RECOMMENDATION

Staff is seeking the Engineering Committee's recommendation to bring this project to the Board of Directors at the next public meeting to award the contract to Akel Engineering Group based on the attached proposal.

Prepared by:



Elias Sebhatu P.E.
Project Engineer

Submitted by:



Brook Yared, M.S., P.E.
Director of Engineering and Operations

Attachment(s):

1. Akel Engineering Inc. Proposal



Geographic Information Systems (GIS) Support Services

PROJECT M-1061

Proposal
April 2023

AKEL
ENGINEERING GROUP, INC.

COVER LETTER

April 18, 2023

Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, CA 91214

Attn: Mr. Brook Yared, MS, PE, Senior Engineer

Subject: **Proposal for Geographical Information Systems (GIS) Support Services (Project M-1061)**

Dear Brook,

We understand that Crescenta Valley Water District is seeking proposals from qualified consultants providing GIS services skilled in utilizing ESRI ArcGIS software for the purposes of editing and formatting ArcGIS geodatabases. Akel Engineering Group, Inc. (Akel) has the experience and qualifications to meet and exceed the expectations expressed in your Request for Proposals. Our team offers the following benefits:

- **Effective and Reliable Project Manager:** Our proposed project manager, Tony Akel, offers the value of a seasoned effective and reliable project manager in the development of digital twins using the latest ESRI software for development of the water infrastructure GIS. hydraulic and water quality modeling, supply and drought planning, and infrastructure master planning. Tony has a proven record of accomplishments in establishing effective working relationships with client staff and successfully producing concise and quality products.
- **Specialty Firm and Expert Team:** Our team has a long history of developing Water Infrastructure GIS using ArcGIS Pro and its QA/QC tools. We usually transition the GIS Water Infrastructure into digital twins that mimic the operation of the existing system, and using software like Autodesk InfoWater Pro.
- **Quick Response and Quality Deliverables:** Our extensive professional experience, and our approach to project management and attention to details, allow us to **work efficiently, respond quickly, and communicate effectively with quality deliverables.**

Our team is committed and eager to working with you and your staff on this opportunity. We thank you for your consideration and look forward to hearing from you during the selection phase.

Respectfully Submitted,
AKEL ENGINEERING GROUP, INC.



Tony Akel, P.E. D.WRE
President

Contact: Tony Akel
7433 North First Street, Suite 103
Fresno, CA 93720
Office: (559) 436-0600, ext. 12
Fax: (559) 436-0622
Mobile: (559) 593-5937
takel@akeleng.com

SCOPE OF WORK

Our understanding of the scope of work tasks is based on the Scope of work section in the Request for Proposals (RFP).

RFP Task 1

Update existing GIS water infrastructure layers using current atlas maps and as-built plans from projects spanning the last 5 years. Over the last 5 years there has been approximately 18,355 lineal feet of new pipeline installed as part of CVWDs ongoing capital improvement program that need to be integrated into the District's GIS database, which is the equivalent of 3.48 miles of pipeline. Known inconsistencies within existing GIS that require updates include missing appurtenances at multiple dead ends (cul-de-sacs) and valve locations inconsistent with the atlas maps along western border of the water service area.

RFP Task 1

Update existing GIS water infrastructure layers using current atlas maps and as-built plans from projects spanning the last 5 years. Over the last 5 years there has been approximately 18,355 lineal feet of new pipeline installed as part of CVWDs ongoing capital improvement program that need to be integrated into the District's GIS database, which is the equivalent of 3.48 miles of pipeline. Known inconsistencies within existing GIS that require updates include missing appurtenances at multiple dead ends (cul-de-sacs) and valve locations inconsistent with the atlas maps along western border of the water service area.

Task 1. Update Existing GIS Water Infrastructure Layers

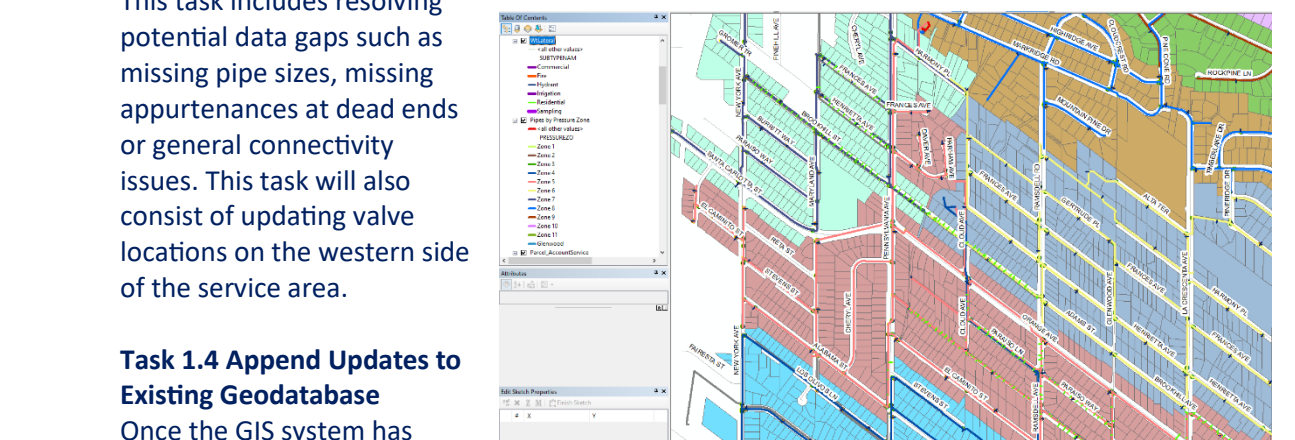
Task 1.1 Digitize 3.5 miles of pipelines from Atlas Maps and As-Build Plans

Task 1.1 Digitize 3.5 miles of pipelines from Atlas Maps and As-Build Plans
We will review CVWD’s existing water distribution system geodatabase and append recently constructed projects, which include approximately 18,355 lineal feet (3.5 miles) of pipelines. Available atlas maps, as-built plans and CAD data will be leveraged to digitize assets.

Task 1.2 Resolve Data Gaps and Inconsistencies (Western Side of Service Area)

Task 1.2 Resolve Data Gaps and Inconsistencies (Western Side of Service Area)

This task includes resolving potential data gaps such as missing pipe sizes, missing appurtenances at dead ends or general connectivity issues. This task will also consist of updating valve locations on the western side of the service area.



Task 1.4 Append Updates to Existing Geodatabase

Existing Geodatabase

Once the GIS system has been verified by CVWD staff, our team will append updates to the existing geodatabase with appropriate attributes.

A screenshot of a GIS application. On the left, there is a data table with columns labeled 'ID', 'X', 'Y', and 'V'. The table contains several rows of data. On the right, a map displays a street grid with various colored overlays, including blue, red, and green, representing different data layers or attributes. The map also shows street names and a scale bar.

Task 1.3 Produce Verification Maps for CVWD Verification

This task consists of developing atlas maps for verification purposes. These maps will be circulated to CVWD staff for review. Potential mark-ups and corrections will be incorporated in the latest GIS database.

Task 1.5 Perform Final Updates and Submit Water Geodatabase

This task includes incorporating CVWD review comments from the Verification Maps, and preparing and submitting the updated geodatabase to CVWD staff. The final submittal will include water system infrastructure, as well as the parcel shapefile.

RFP Task 2

Expand parcel layer to include parcel data along CVWD's sewer service area along Broadview Dr, Ocean Ave, Sunview Dr and the Sewer Interceptor Line which travels from the La Crescenta area, through the City of Glendale to the Los Angeles Glendale Water Reclamation Plant (LAGWRP).

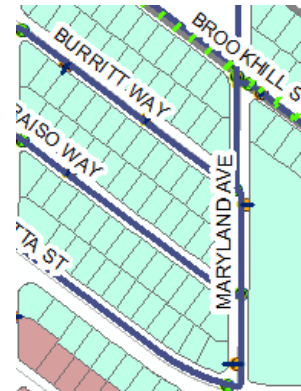
Task 2. Expand Parcel Layer

Task 2.1 Collect and Obtain Parcel Datasets

We will collect and obtain relevant parcel datasets from neighboring agencies. This task will include accessing Open GIS Data Portals to download and clip parcel shapefiles.

Task 2.2 Expand Existing Parcel Layer

This task will include pre-processing the new parcels obtained from the County. These processes include projecting and clipping data to CVWD's coordinate system and service area, respectively. The new parcels will then be appended to the existing parcel shapefile.



Task 2.3 Perform Final Update and Submit Parcel Map Layer. We will submit an updated parcel map for CVWD review. Once approved by CVWD staff, the updated shapefile will be added to CVWD's existing geodatabase and included in the final submittal.

RFP Task 3

Implement industry best practices and standards using tools and methodologies recommended by ESRI to review newly updated water system for completeness and quality assurance. Provide any recommendations on existing water attributes tables based on best water distribution data management practices.

Task 3. Implement Industry Best Practices and Standards

Task 3.1 Quality Assurance using GIS Data Reviewer Extension

We will conduct a thorough review of the existing assets using the GIS Data Reviewer extension. We will summarize attributes for each asset and document discrepancies such as potential duplicates, erroneous fields, or connectivity issues.

Task 3.2 Recommend Best Data Management Practices

This task includes recommending best data management practices and standards to maintain and update CVWD's water system geodatabase. These recommendations will be submitted in a brief letter with exhibits.

RFP Task 4

Integrate ArcGIS Workflow Manager, in conjunction with CVWD's IT staff, to support CVWD in efforts to streamline workflows. Work with the District to recommend and implement various workflow strategies and templates with the goal of creating automated processes for CVWD's asset management. (NOT INCLUDED)

Task 4. Integrate ArcGIS Workflow Manager –

Our firm is not submitting on this task, and thus considered outside the scope of work for this project.

RFP Task 4

Coordinate and schedule monthly progress meetings for the purpose of documenting key decisions and milestones throughout the project.

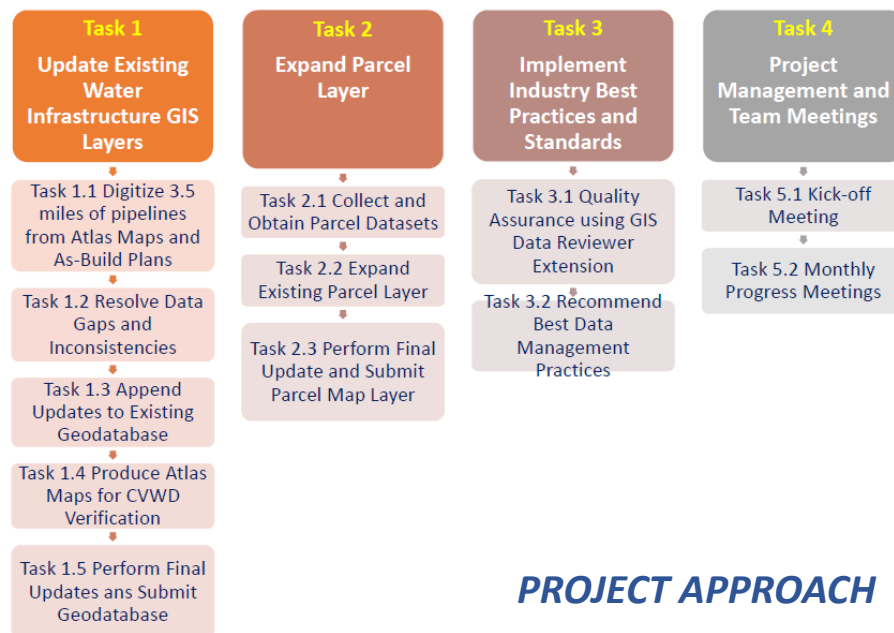
Task 4. Project Management and Team Meetings

Task 4.1 Kick-off Meeting

This task includes organizing the project Kick-off meeting to discuss key objectives, schedule and data needs.

Task 4.2 Monthly Progress Meetings

This task includes organizing monthly meetings to discuss progress and outstanding concerns. This task also includes documenting key decisions throughout the project.



PROJECT APPROACH

PROJECT SCHEDULE

This section contains our team's proposed schedule for this project.

Task No.	Task Description	2023									
		May					June				
		1-May	8-May	15-May	22-May	29-May	5-Jun	12-Jun	19-Jun	26-Jun	
Task 1	Update Existing GIS Water Infrastructure Layers										
1.1	Digitize 3.5 Miles of Pipelines from Atlas Maps and As-Build Plans				Digitize Pipelines						
1.2	Resolve Data Gaps and Inconsistencies (Western Side of Service Area)				Resolve Data Gaps						
1.3	Append Updates to Existing Geodatabase				Append Updates						
1.4	Produce Verification Maps for CVWD Verification					Produce Verification Maps					
1.5	Perform Final Updates and Submit Water Geodatabase							Submit Water GDB			
Task 2	Expand Parcel Layer										
2.1	Collect and Obtain Parcel Datasets			Review and Collect Parcel Data							
2.2	Expand Existing Parcel Layer			Expand Existing Parcels							
2.3	Perform Final Update and Submit Parcel Map Layer			Submit Updated Parcel Layer							
Task 3	Implement Industry Best Practices and Standards										
3.1	Quality Assurance using GIS Data Reviewer Extension					Quality Assurance					
3.2	Recommend Best Data Management Practices						Submit Recommendations				
Task 4	Integrate ArcGIS Workflow Manager - Out of Scope										
Task 4	Project Management and Team Meetings										
4.1	Kick-off Meeting	Kick-off Meeting									
4.2	Monthly Progress Meetings				CVWD Review	CVWD Review					



PROPOSAL FEE SCHEDULE

This section includes our proposed fee schedule outlining all applicable hourly rates and costs for services.

Task No.	
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A K E L
ENGINEERING GROUP, INC.

PROJECT EXPERIENCE

AKEL ENGINEERING GROUP, INC.	Domestic Water Systems Hydraulic Modeling and Master Planning Recent Experience within the past 6 years	GIS Updates	Project Elements												
	Software		Land Use Characteristics/Inventory	Demand Coefficient Analysis/Projections	Hydraulic Model Development/Calibration	Hydraulic Modeling & Analysis	Storage Analysis	Fire Flow Analysis	Water Supply Capacity	Surge Analysis	Water Quality Analysis	Recommended Infrastructure Improvements & Planning	Capital Improvement Program with AB 1000	Hydraulic Model Training	Risk & Condition Assessment
	Hydraulic Modeling: InfoWater Pro & AquaTwin Water Risk & Condition Assessment: InfoAsset Planner & AquaTwin Asset														
Client	Project														
City of Pleasanton, CA	2023 Water System Master Plan	●	●	●	●	●	●	●	●			●	●		
City of Santa Ana, CA	2021-2023 Water Hydraulic Model Evaluation Study	●		●	●	●	●	●				●			
East Orange County Water District, CA	2022 Fire Flow Analysis and Proposed Improvements	●				●		●				●			
Coachella Valley Water District, CA	2021 Hydraulic Model Re-Calibration and Ongoing Technical Support 2016 Chromium 6 Well Treatment Analysis 2015 GIS-Based Hydraulic Model Development and Evaluations	●	●	●	●	●	●	●	●	●	●	●	●	●	●
City of Fresno, CA	2016-2021 Ongoing Technical Support 2017 Renewal and Replacement Plan Development 2016 GIS-Based Hydraulic Model Development and Evaluations	●	●	●	●	●	●	●	●	●	●	●	●		●
San Lorenzo Valley Water District, CA	2021 Water System Master Plan	●	●	●	●	●	●	●	●			●	●		●
City of Morgan Hill, CA	2017-2021 On-Call Support 2017 Water System Master Plan	●	●									●	●		●
Santa Clarita Valley Water Agency, CA	2016-2021 Water System Master Plan Updates and Ongoing Technical Support 2016 Newhall Water System Master Plan Update	●	●									●	●		
City of Gilroy, CA	2021 Water System Master Plan	●	●									●	●		
Marina Coast Water District, CA	2021 On-Call Support 2019 Master Plans and Capacity Fees for Sewer, Water and Recycled Water	●	●									●	●		
City of Pittsburg, CA	2021 Water System Master Plan, and Capacity Fees Update. 2015 Water System Master Plan	●	●									●	●		
City of Whittier, CA	2017-2021 Water Master Plan Peer Review and On-Call Hydraulic Modeling Services	●										●			
Town of Hillsborough, CA	2015-2021 Hydraulic Analysis in Support of Project Improvements	●	●									●		●	
California Water Service Company, CA	2021 Bakersfield Hydraulic Model Development and Calibration 2020 Travis Air Force Base Hydraulic Model	●	●	●	●	●									
City of Woodlake, CA	2021 Hydraulic Model Development and Calibration	●	●	●	●										
Camrosa Water District, CA	2021 Pressure Zone 4C Tank and Pump Station Analysis	●				●	●					●			
Crescenta Valley Water District, CA	2020-2021 On-Call Fire Flow Analysis 2019 Water System GIS and Hydraulic Model Update	●	●	●	●			●						●	
City of Hanford, CA	2020 Water System Master Plan	●	●	●	●	●	●	●				●	●		
City of San Juan Bautista, CA	2020 Water and Wastewater Master Plans	●	●	●	●	●			●			●	●		
West Valley Water District, CA	2019 Water System Master Plan and On-Call Services	●	●	●	●	●	●	●	●			●	●		
City of Madera, CA	2017-2018 Condition Assessment and Asset Management Plan 2014-2016 Water System Master Plan and related studies	●	●	●	●	●	●	●	●			●	●		●
City of Clovis, CA	2017 Water System Master Plan	●			●	●	●	●	●			●	●		
City of Arcadia, CA	2015-2020 On-Call Hydraulic Model Technical Support and Training	●				●					●			●	

Every Digital Twin Water Infrastructure Project includes GIS updates, thorough connectivity verifications, and QA/QC.

2019-2023 Water System GIS and Hydraulic Model Update and Support

Project Description:

In 2019, CVWD embarked on a modernization project, to include GIS and the water hydraulic model. Akel Engineering Group was retained to complete a thorough review and update of the water system GIS geometry, and subsequent update of the hydraulic model to a new platform.

Successful Outcomes:

- GIS Geometry Review and Update
- GIS Attribute Review and Update
- Hydraulic Model Update
- 2019 and 2022 Water Demand Allocations, based on billing records.
- Hydraulic Analysis for Zone 2 and Zone 1 temporary supply.
- Miscellaneous Fire Flow Analysis

CRESCENTA VALLEY WATER DISTRICT

CONTRACT COST: \$79,500

PROJECT DURATION: 2019 – 2023

AKEL TEAM ON THE PROJECT:

Tony Akel (PE), Brad Kooiman (PE), Steven Hash (GIS)

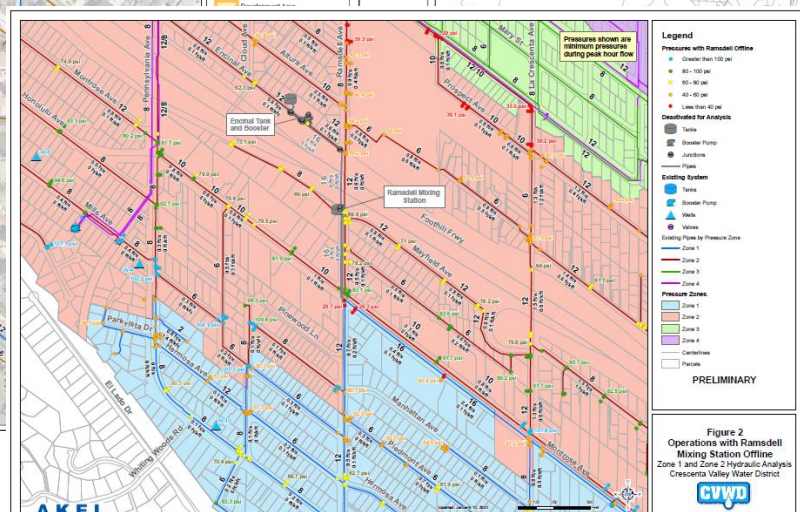
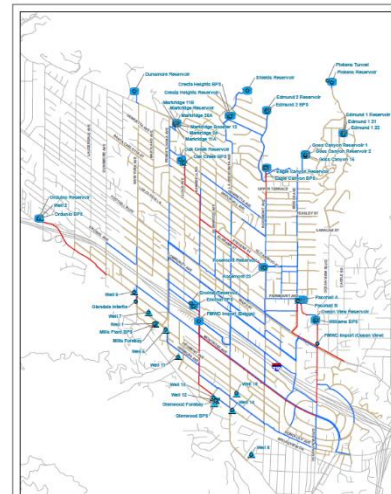
CLIENT REFERENCE:

Brook Yared, MS, PE,
Engineering Manager

Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, CA 91214

(818) 236-4117

byared@cvwd.com



2009 – 2022 Domestic Water System Hydraulic Model Updates, Calibration, and System Evaluation and Ongoing Technical Support

Project Description:

The objective of this project was to update and evaluate Coachella Valley Water District's domestic water distribution system, identify and recommend improvements necessary to mitigate existing deficiencies, plan for future water demands, and provide hydraulic analysis support to identify the impacts of future supply alternatives.

Successful Outcomes:

- Update water the hydraulic model using the District's AutoCAD plat sheets, record drawings, GIS, and field test data.
- Calibration of the hydraulic model containing over 1,900 miles of pipe and 100 wells to an extended period simulation using Innovyze's [Infowater Pro](#).
- Evaluate the capacity of the water facilities to service existing users.
- Perform storage, pump station, supply, and fire flow analyses for each pressure zone.
- Recommend improvements necessary to mitigate existing deficiencies and to service future growth.
- Develop a conceptual water system plan for the lower Coachella Valley area.
- Prepared a risk assessment and prioritization for Asbestos Concrete Pipelines.

COACHELLA VALLEY WATER DISTRICT

CONTRACT COST: \$450,000

PROJECT DURATION: 2009 – 2022

AKEL TEAM ON THE PROJECT:

Tony Akel (PE), Brad Kooiman (PE), Steven Hash (GIS), Gerardo Morales (GIS)

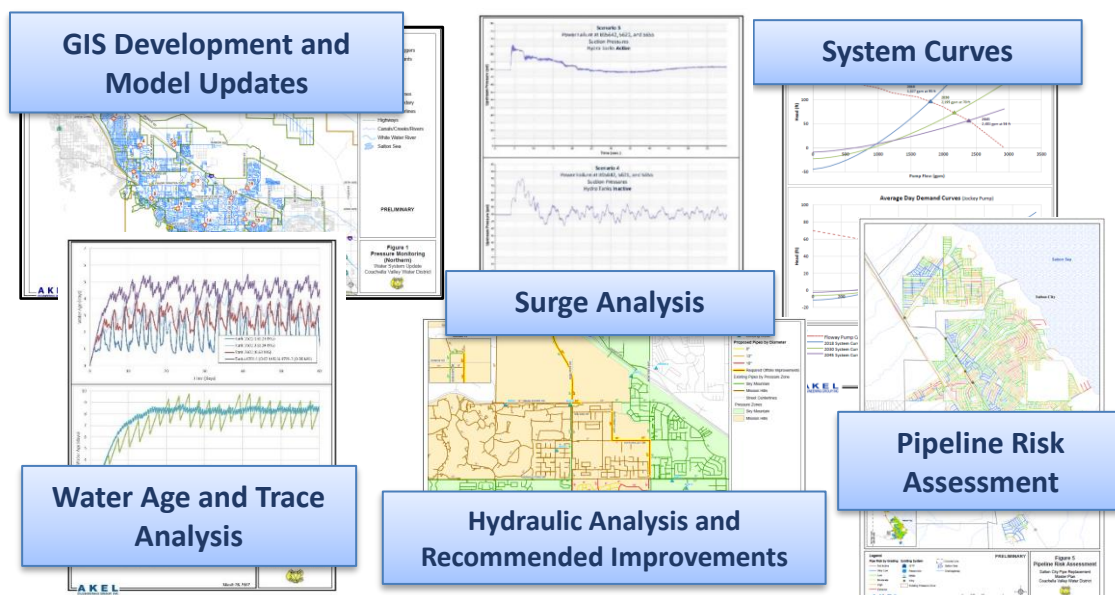
CLIENT REFERENCE:

Hector Rodriguez, PE, Domestic Water Engineer

Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

(760) 391-9637

hrodriguez@cvwd.org



2019 – 2022 Water System Master Plan

WEST VALLEY WATER DISTRICT

Project Description:

The objective of this master plan update was to evaluate West Valley Water District's water distribution system, identify and recommend improvements necessary to service current and future water demands, and develop a prioritized capital improvement program (CIP).

Successful Outcomes:

- Update water system planning and design criteria.
- Update the hydraulic model using the latest available GIS database.
- Evaluate the existing and proposed land use over 6 differing jurisdictions.
- Develop and calibrate a hydraulic model to EPS using Innovyze's **Inflowater Pro**.
- Evaluate the capacity of the water facilities to service existing users.
- Perform a detailed storage analysis and water supply analysis for each pressure zone.
- Document a mass balance to provide District staff a means to understanding how water is conveyed throughout the system.
- Recommend improvements necessary to mitigate existing deficiencies and to service future growth.
- Develop a Capital Improvement Program with a short-term, intermediate-term and long-term phasing.
- Perform cost sharing analysis for each recommended project between existing users and future developments.
- Prepare a comprehensive water master plan report.

CONTRACT COST: \$200,000

PROJECT DURATION: 2019 - Present

AKEL TEAM ON THE PROJECT:

Tony Akel (PE), Brad Kooiman (PE), Steven Hash (GIS), Gerardo Morales

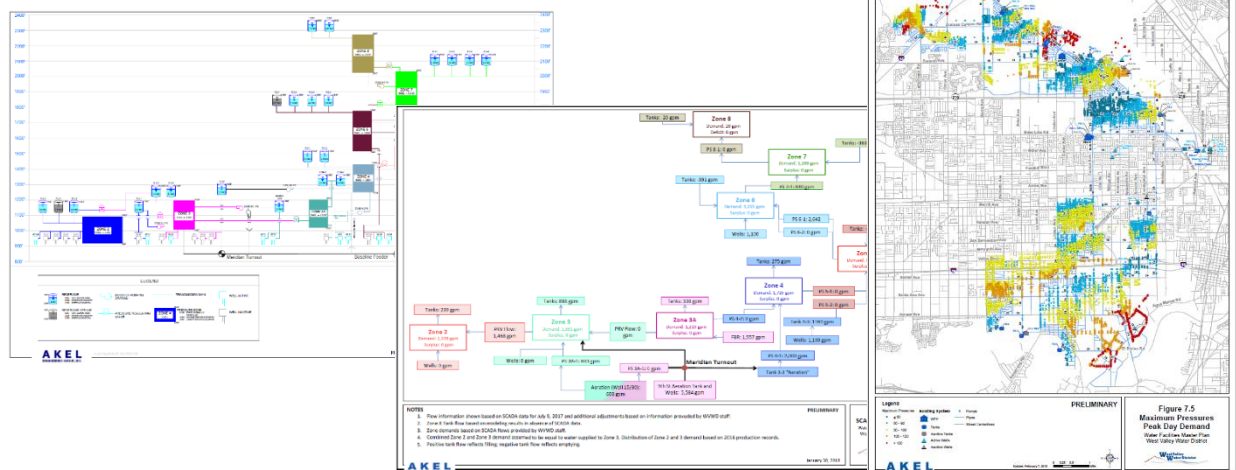
CLIENT REFERENCE:

Linda Jadeski, Engineering Services Manager

855 West Base Line Road
Rialto, CA 92377

(909) 875-1322

ljadeski@wwwd.org



2016/2023 Hydraulic Modeling Analysis for Water Quality

Project Description:

The objective of this project was to use the Soquel Creek Water District hydraulic model to complete hydraulic analysis to enhance operations, and to assess the system performance during water quality analysis and identify areas of concern.

The modeling assumptions for each scenario were documented, and analysis results were developed on exhibits for the following:

- Scenario 1 – Water Age – No Interties Active
- Scenario 1 – Tank Water Age – No Interties Active
- Scenario 2 – Water Age – O'Neill Intertie Active, Aptos PS Inactive
- Scenario 2 – Tank Water Age – O'Neill Intertie Active, Aptos PS Inactive
- Scenario 2A – Supply Trace – O'Neill Intertie Active, Aptos PS Inactive
- Scenario 3 – Water Age – O'Neill Intertie Active, Aptos PS Active
- Scenario 3 – Tank Water Age – O'Neill Intertie Active, Aptos PS Active
- Scenario 3A – Supply Trace – O'Neill Intertie Active, Aptos PS Active
- Tank Operations – Scenario 1
- Well, Intertie, Pump Station Flows – Scenario 1
- Tank Operations – Scenario 2
- Well, Intertie, Pump Station Flows – Scenario 2
- Tank Operations – Scenario 3
- Well, Intertie, Pump Station Flows – Scenario 3

SOQUEL CREEK WATER DISTRICT

CONTRACT COST: \$274000

PROJECT DURATION: 2016– 2023

AKEL TEAM ON THE PROJECT:

Tony Akel (PE), Brad Kooiman (PE), Steven Hash (GIS), Gerardo Morales (GIS)

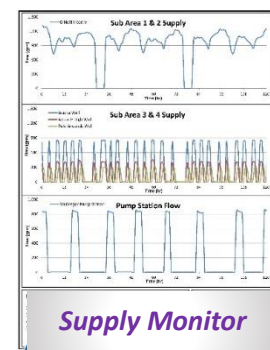
CLIENT REFERENCE:

Taj A. Dufour, P.E., Engineering Manager

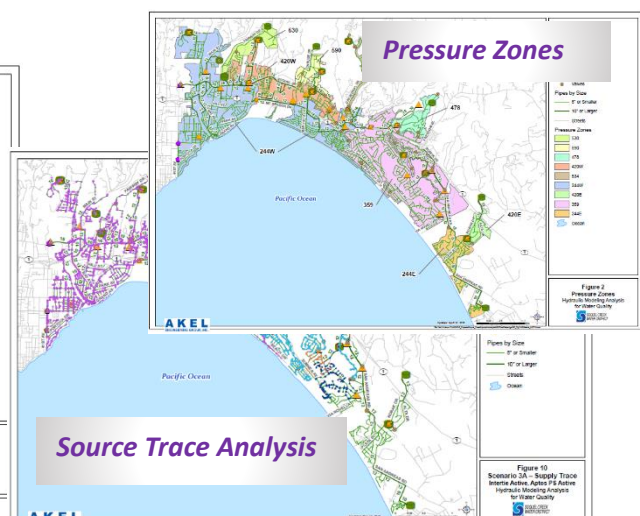
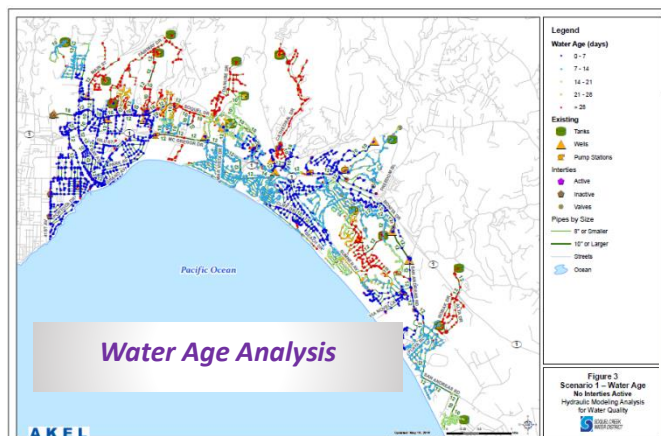
5180 Soquel Drive
Soquel, CA 95073

(831) 475-8500

tajd@soquelcreekwater.org



Supply Monitor



2015 - 2022 GIS-Based Hydraulic Model Development with AMI Integration and Analysis and Ongoing Technical Support

Project Description:

The objective of this analysis was to update and evaluate the City of Fresno's water distribution system, identify and recommend improvements necessary to convey water from a new 80 mgd surface water treatment plant to the core of the City, and convert the existing steady-state model to an extended period simulation (EPS) model. An EPS model calibration was also performed as part of this project.

Project Highlights

- Update the hydraulic model using the latest available GIS database.
- Update the existing steady state hydraulic model facilities which included 269 wells.
- Develop and calibrate a hydraulic model to EPS using Innovyze's **Infowater Pro**.
- Analyze the existing and projected water demands based on recent water use trends.
- Evaluate and recommend the sizing, alignment, and interconnections of the proposed regional transmission mains with the existing system to convey water from the new 80 mgd SWTP.
- Prepare the hydraulic model for use in a genetic algorithm optimization analysis.
- Develop approximately 150 demand patterns based on water conservation and geographical water use trends from smart meter data.
- Perform water age analysis to identify water quality improvements.

CITY OF FRESNO

CONTRACT COST: \$900,000

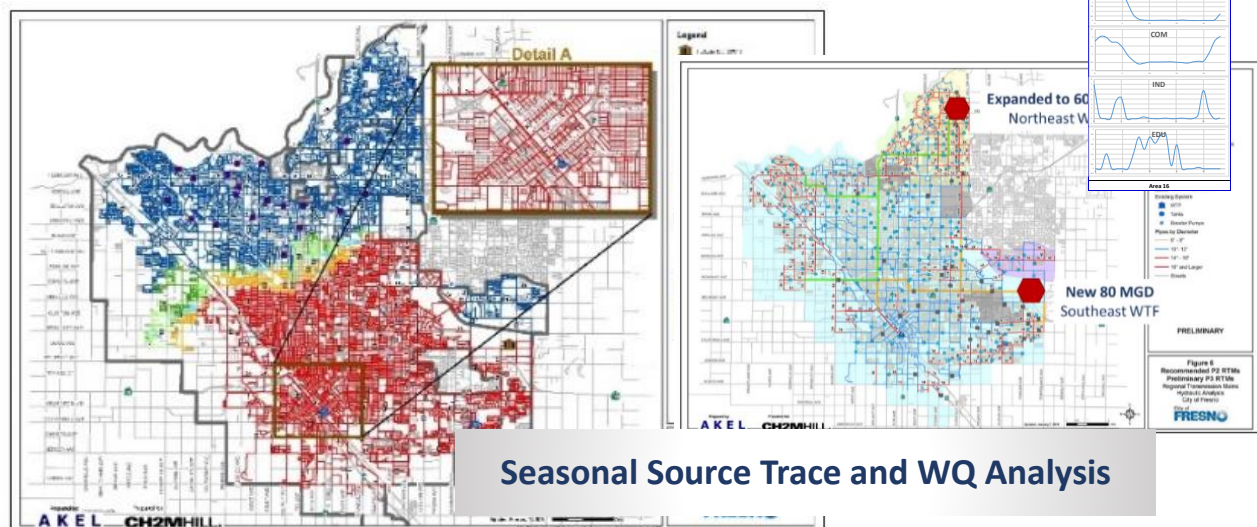
PROJECT DURATION: 2015 - Ongoing

AKEL TEAM ON THE PROJECT:

Tony Akel (PE), Brad Kooiman (PE), Steven Hash (GIS), Gerardo Morales (GIS)

CLIENT REFERENCE:

Brock Buche, PE, PLS
Director of Public Utilities
 2101 G Street, Building A
 Fresno, CA 93706
(559) 621-1610
Brock.Buche@fresno.gov



CONSULTANT'S REPRESENTATIVE

Akel Engineering Group

Akel Engineering Group, Inc. (Akel) is a digital water engineering firm with over [55 years of combined staff experience](#) providing consulting services in water resources infrastructure modeling and master planning. Akel has developed a proven efficiency gained through many years of successful project management and implementation, and is recognized in the industry for our [commitment to provide clients with high quality accurate products](#). We proudly serve clients throughout the state of California, and we continually strive to bring industry leading products and expertise to each of our projects.



Tony Akel, P.E., PACP, D.WRE, Principal-in-Charge and Project Manager

Our commitment to personnel continuity is designating Tony Akel as the project manager. Tony Akel has over 36 years of professional experience in providing planning and design services related to the water supply and distribution, sewer collection, stormwater collection, recycled water distribution, and irrigation water delivery infrastructure.

Tony is especially effective in developing and maintaining clear project communications that provide quick response to challenges as they surface and result in successful project completions. Tony has been working on utility planning master plans and other studies with the City of Madera for over 20 years. He has intimate knowledge of the system.



Brad Kooiman, P.E., PACP, Principal

Brad Kooiman has over 15 years of specialized experience, as a hydraulic modeling task manager on a variety of water system evaluations and master plans, including the Newhall Water System Master Plan for Santa Clarita Valley Water Agency, ongoing planning studies for Coachella Valley Water District, and performing hydraulic and water quality analysis for integrating a new 80 mgd water treatment facility for the City of Fresno. He is trained and experienced in using a number of modeling software, including Innovyze's InfoWater, InfoSewer, and InfoAsset Planner. He is experienced in hydraulic model calibration, resolving GIS data discrepancies, analyzing water system hydraulic performance, developing hydraulic improvements and corresponding capital cost estimates.



Steven Hash, GIS Analyst

Steven Hash has over 7 years of specialized GIS experience in performing analysis tasks for a variety of hydraulic model development projects. Experience includes digitizing water and sewer systems using exported CAD data and As-Built files for use in updating the GIS and hydraulic models. He has digitized planning areas for use in updating the demands or loads in hydraulic models. Mr. Hash has developed GIS Plat Sheets for water, sewer, storm drainage, and irrigation systems, is skilled in generating miscellaneous master planning exhibits, and has extensive knowledge in creating multi-figure packets using data driven pages.

Gerardo Morales, GIS Analyst

Gerardo Morales has contributed to various hydraulic modeling projects. His experience includes detailed maps for water demands and water infrastructure requirements, modeling analysis figures for existing and recommended sewer systems, and experience in digitizing proposed water and sewer systems. Mr. Morales is currently seeking two GIS specializations certifications through UC Davis and the University of Toronto extensions offered by Coursera.

PROFESSIONAL SERVICES AGREEMENT

If selected, Akel Engineering Group, Inc. understands that we are responsible for completing the specified services in accordance with the District's standard "Professional Services Agreement," which will be provided by the District.

INSURANCE REQUIREMENTS

Akel Engineering Group, Inc. has the ability to meet the District's insurance coverage requirements.

DISTRICT REIMBURSEMENTS

Akel Engineering Group, Inc. has reviewed and understands the District's Reimbursement policies.

Crescenta Valley Water District

FY 23/24 Capital Improvement Project Priority List

Capital Improvement Project Program	Budget FY 23/24	Category	Priority	Cumulative Estimated Costs	Project Description
Annual Pipeline Replacement - FY 22/23 Pipeline Carryover Costs	\$ 1,023,084	Water Distribution	1	\$ 1,023,084	Pipeline Replacement - 2600 & 2700 Block of Orange & 5000 Block of El Adobe, project delayed from FY 22/23
Steel Reservoir Rehabilitation - Goss Canyon #2	\$ 863,500	Water Storage	1	\$ 1,886,584	Reservoir Rehabilitation - Structural repairs and re-coating at Goss Canyon #2 Reservoir during low demand (Winter) season
Well 11 Rehabilitation	\$ 110,000	Water Supply	1	\$ 1,996,584	Well Rehabilitation - Remove & Inspect Well Pump & Casing, Chemical Treatment Well Casing, Pump Test, New Pump & Motor
Conversion to Chloramines	\$ 80,000	Water Treatment	1	\$ 2,076,584	Water Treatment: Disinfection - Conversion of Disinfection Method from Free Chlorine to Chloramines
PFA's Regulatory Compliance Measures	\$ 60,000	Water Treatment	1	\$ 2,136,584	Water Treatment: Pending Federal and State Regulations - Pending Regulatory compliance measures for the remediation of PFA's
AMI - Replace 1.5" Smart Meters with SmartPoints (Grant)	\$ 335,000	Technology	1	\$ 2,471,584	Advanced Metering Infrastructure (AMI) - <u>Continuation from FY 22/23</u> Install 2" water meters with SmartPoints
Mills Booster B Pump Replacement	\$ 35,000	Water Distribution	2	\$ 2,506,584	Booster Pump Replacement - Replace 15-yr and older booster pump with new pump assembly and high efficiency motor
AMI - Zones 6,7, & 8 - Year 1	\$ 110,000	Technology	2	\$ 2,616,584	Advanced Metering Infrastructure (AMI) - <u>Continuation from FY 22/23</u> Install 2" water meters with SmartPoints
SCADA Replacement - E-939	\$ 100,000	Technology	1	\$ 2,716,584	Technology - Transition from Tesco control system to non-proprietary Allen-Bradley based control system.
PRS - Zone 2 to Zone 1 at Mayfield & Ramsdell	\$ 60,000	Water Distribution	2	\$ 2,776,584	New Pressure Reducing Station at Mayfield & Ramsdell - <u>Continuation from FY 22/23</u> - Construction of PRS from Zone 2 to zone 1
AMI - Replace 2" Smart Meters with SmartPoints	\$ 100,000	Technology	2	\$ 2,876,584	Advanced Metering Infrastructure (AMI) - <u>Continuation from FY 22/23</u> Install 2" water meters with SmartPoints
Dunsmore Tunnel Reinstatement Feasibility Study	\$ 25,000	Water Supply	2	\$ 2,901,584	Water Supply - Investigating the Supply Options as part of the development of the Integrated Resource Management Plan
Annual Pipeline Replacement - 2400 - 2500 Blocks of Montrose	\$ 1,337,500	Water Distribution	3	\$ 4,239,084	Pipeline Replacement - 2400 - 2500 Blocks of Montrose
Annual Pipeline Replacement - 2600 - 2700 Blocks of Montrose	\$ 1,224,400	Water Distribution	3	\$ 5,463,484	Pipeline Replacement - 2600 - 2700 Blocks of Montrose
Mills Booster A - VFD and Motor Replacement	\$ 60,000	Water Distribution	3	\$ 5,523,484	Water Distribution - Installation of a new motor and VFD to provide for redundancy for Mills Booster B.
Replace/Refurbish Mills Aeration Tower	\$ 150,000	Water Treatment	3	\$ 5,673,484	Water Treatment: pH Control - Rehabilitation or replacement of the existing aeration tower at the Mills Operations Facility.
AMI - Zone 6, 7, & 8 - Install Meter Lids & SmartPoints	\$ 475,200	Technology	3	\$ 6,148,684	Advanced Metering Infrastructure (AMI) - Install SmartPoints & Meter Lids in Zones 9, 10 & 11

SCADA Radio Communcations Network	\$ 50,000	Technology	3	\$ 6,198,684	Technology: Telemetry - Radio and Atenna Equipment Replacement
Annual Pipeline Replacement - 2200 Honolulu - South Alley	\$ 572,823	Water Distribution	3	\$ 6,771,507	Pipeline Replacement - 2400 - 2200 Honolulu - South Alley
Annual Pipeline Replacement - 2200 Block of Montrose Ln	\$ 484,553	Water Distribution	3	\$ 7,256,060	Pipeline Replacement - 2200 Block of Montrose Ln
Annual Pipeline Replacement - 2300 Block of Jayma Lane	\$ 852,145	Water Distribution	4	\$ 8,108,205	Pipeline Replacement - 2300 Block of Jayma Lane
Notes:					
Priority Level 1: Projects <u>MUST</u> be constructed during FY 23/24					
Priority Level 2: Projects <u>SHOULD</u> be constructed during FY 23/24					
Priority Level 3: Projects <u>Could Be Postponed</u> to FY 24/25					
Priority Level 4: Projects <u>Postponed</u> to FY 24/25					

FY 2023/24 CIP Budget No Additional Funding Draft - 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31	Forecast FY 31/32	Forecast FY 32/33
10-Year Capital Improvement Project Summary															
1. Water Supply		\$ 171,000	\$ 28,703	\$ 83,366	\$ 112,069	\$ 135,000	\$ 190,000	\$ 240,000	\$ 260,000	\$ 134,000	\$ 138,000	\$ 142,000	\$ 146,000	\$ 150,000	\$ 155,000
2. Water Storage		\$ 853,772	\$ 256,487	\$ 475,505	\$ 731,992	\$ 863,500	\$ 886,200	\$ -	\$ 1,089,000	\$ 1,756,800	\$ 851,657	\$ 810,000	\$ 2,200,000	\$ 1,100,000	\$ 3,250,000
3A. Water Distribution - Pipeline -10-Yr Ramp up		\$ 2,408,137	\$ 1,191,377	\$ 95,000	\$ 1,286,377	\$ 1,023,084	\$ 1,106,100	\$ 1,000,000	\$ 3,692,591	\$ 3,675,600	\$ 3,877,758	\$ 4,091,035	\$ 4,316,042	\$ 4,553,424	\$ 4,803,862
3B. Water Distribution - Other		\$ 149,310	\$ 40,976	\$ 97,793	\$ 136,769	\$ 95,000	\$ 290,000	\$ 650,000	\$ 160,000	\$ -	\$ 40,000	\$ 100,000	\$ -	\$ -	\$ -
4. Water Treatment		\$ 100,000	\$ -	\$ -	\$ -	\$ 140,000	\$ -	\$ -	\$ 380,000	\$ 180,000	\$ -	\$ -	\$ -	\$ -	\$ -
5. Technology		\$ 1,170,000	\$ 179,604	\$ 792,866	\$ 651,469	\$ 645,000	\$ 267,500	\$ 375,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response		\$ 170,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 245,000	\$ 210,000	\$ 170,000	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 155,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total		\$ 5,022,219	\$ 1,702,509	\$ 1,544,530	\$ 2,918,676	\$ 2,901,584	\$ 2,739,800	\$ 2,265,000	\$ 5,981,591	\$ 6,206,400	\$ 5,077,415	\$ 5,143,035	\$ 6,662,042	\$ 5,803,424	\$ 8,208,862
1. Water Supply															
A. Groundwater Water Supply															
i. Well Rehabilitation															
	Well 7 Rehabilitation	E-999													
	Well 16 Rehabilitation	E-1006													
	Well 11 Rehabilitation	E-1015													
	Well 12 Rehabilitation	E-1028													
	Well 9 Rehabilitation	E-1056	\$ 96,000	\$ 21,559	\$ 62,216	\$ 83,775									
	Well 14 Rehabilitation					\$ 110,000									
	Well 10 Rehabilitation						\$ 95,000								
	Well 16 Rehabilitation							\$ 120,000							
	Well 5 Rehabilitation								\$ 130,000						
	Well Rehabilitation (2 wells per year)					\$ 110,000	\$ 95,000	\$ 120,000	\$ 130,000	\$ 134,000	\$ 138,000	\$ 142,000	\$ 146,000	\$ 150,000	\$ 155,000
ii. New Wells															
	Re-Activate Well 2 - Design	E-956													
	Re-Activate Well 2 - Construction	E-956													
	Well 18 (Sycamore House) - Design														
	Well 18 (Sycamore House) - Construction														
	Well 19 - Design														
	Well 19 - Construction														
	Well 20 - Design														
	Well 20 - Construction														
	Well 21- Design														
	Well 21 - Construction														
iii. Groundwater Basin Recharge															
	Stormwater Recharge Project at CVC Park - Planning	E-985	\$ 75,000	\$ 7,144	\$ 21,150	\$ 28,294	\$ -								
	Storm water Recharge Project at CVC Park - Design														
	Storm water Recharge Project at CVC Park - Construction														
	Reservoir LID Storm Drain Capture														
iv. Tunnel Rehabilitation															
	Dunsmore Tunnel Feasability Study/Rehabilitation					\$ 25,000									
	Rehabilitaiton of Pickens Tunnel														
	Goss Canyone Tunnel														
B. Imported Water Supply															
	Ocean View - Final	E-733CS-S													
	Future Project														
C. Recycled Water System															
i. Recycled Water															
	Recycled Water Infrastructure Feasibility Study														
	Recycled Water System with GWP - Future														
ii. Membrane Bioreactor Technology (MBR)															
	MBR Plant - Harmony/Two-Strike Park- Planning														
	MBR Plant - Harmony/Two-Strike Park- Design														
	MBR Plant - Harmony/Two-Strike Park- Construction														
D. Water Supply Studies															
	Water Resources Study														
	GWP Water Supply Feasibility Study														
	Verdugo Basin Groundwater Model														
	Groundwater Well Replacement Study														
	Groundwater Pilot Hole Study														
WS Total			\$ 171,000	\$ 28,703	\$ 83,366	\$ 112,069	\$ 135,000	\$ 190,000	\$ 240,000	\$ 260,000	\$ 134,000	\$ 138,000	\$ 142,000	\$ 146,000	\$ 155,000
2. Water Storage															
A. Reservoir Rehabilitation															
i. Steel Reservoir Rehabilitation															
	Edmund #1 - Roof	E-936													
	Oak Creek #1 & #2	E-970													
	Markridge														
	Rosemont														
	Oak Creek - 16" Manifold Repair														
	Edmund #2		\$ 53,772	\$ 31,992	\$ -	\$ 31,992									
	Goss Canyon #1		\$ 800,000	\$ 224,495	\$ 475,505	\$ 700,000									
	Goss Canyon #2						\$ 863,500								
	Shields							\$ 886,200							
	Dunsmore								\$ 1,014,000						
	Eagle Canyon								\$ 1,756,800	\$ 851,657		\$ 810,000	\$ 1,000,000		
	Cresta Hts #1 & 2													\$ 1,100,000	
	Pickens Canyon														\$ 1,850,000
	Ordunio														
ii. Concrete Reservoir Rehabilitation															
	Encinal														
	Williams (Ocean View)												\$ 1,200,000		
	Edmund #1														\$ 1,400,000
iii. Steel Reservoir Corrosion Protection System															
	Cathodic Protection Inspection & Replacement								\$ 75,000						

FY 2023/24 CIP Budget No Additional Funding Draft - 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31	Forecast FY 31/32	Forecast FY 32/33
iv. Overflow & Drain System Upgrade															
Upgrade Overflow/Drain System at Ocean View															
Ocean View Reservoir - AC Pavement															
Upgrade Overflow/Drain System - Future															
B. Reservoir Water Quality															
i. Water Quality Mixing System															
Reservoir Mixing System - 2 Reservoirs															
Reservoir Mixing System - 2 Reservoirs															
Reservoir Mixing System - 3 Reservoirs															
Reservoir Mixing System - 4 Reservoirs															
ii. Replacement of Common Inlet/Outlet Piping															
Common Inlet/Outlet Piping Replacement															
C. Water Storage Studies															
Reservoir Inlet/Outlet & Overflow Piping Study															
Conditional Assessment of Reservoirs Study															
Ocean View #2 Reservoir Feasibility Study															
WS Total		\$ 853,772	\$ 256,487	\$ 475,505	\$ 731,992	\$ 863,500	\$ 886,200	\$ -	\$ 1,089,000	\$ 1,756,800	\$ 851,657	\$ 810,000	\$ 2,200,000	\$ 1,100,000	\$ 3,250,000
3. Water Distribution															
A. Pipeline Replacement															
Lower Pickens Canyon Crossing & Slope	E-957														
2700 Block - Brookhill - 800 LF	E-982														
5100 Block of La Crescenta - 400 LF	E-982														
3000 Block of Brookhill - 800 LF	E-982														
3100 Block of Brookhill - 800 LF	E-982														
FY 19/20 - Pipeline Replacement															
3200 & 3300 Blocks of Brookhill	E-1002														
4700 & 4800 Block of Pennsylvania	E-1009														
FY 20/21 Pipeline Replacement															
2800 to 3100 blocks of Los Olivos Lane - 3,400 LF		\$ 442,000	\$ 495,993	\$ -	\$ 495,993										
4700 Block of Cheryl & 3200 Block of Alabama - 1,750 LF		\$ 615,637	\$ 427,969	\$ 35,000	\$ 462,969										
FY 21/22 Pipeline Replacement															
2600 & 2700 Block of Orange & El Adobe (2700 LF)		\$ 1,350,500	\$ 267,416	\$ 60,000	\$ 327,416										
FY 22/23 Pipeline Replacement						\$ 1,023,084									
3000 - 3100 Blocks of Stevens (1695 LF)							\$ 1,106,100								
FY 23/24 - Pipeline Replacement															
2400 - 2500 Blocks of Montrose (1830 LF)							\$ 1,000,000								
FY 24/25 - Pipeline Replacement									\$ 500,000						
2600 - 2700 Blocks of Montrose (1930 LF)									\$ 1,377,300						
2800 - 2900 Blocks of Mary (1805 LF)									\$ 1,233,700						
2200 Block of Montrose Ln (735 LF)									\$ 581,591						
FY 24/25 - Pipeline Replacement															
2200 Honolulu - South Alley (780 LF)										\$ 646,800					
2300 - 2400 Blocks of Teasley (1600 LF)										\$ 1,153,800					
FY 25/26 - Pipeline Replacement (2600 LF Proposed)										\$ 1,875,000					
Subtotal		\$ 2,408,137	\$ 1,191,377	\$ 95,000	\$ 1,286,377	\$ 1,023,084	\$ 1,106,100	\$ 1,000,000	\$ 3,692,591	\$ 3,675,600	\$ 3,877,758	\$ 4,091,035	\$ 4,316,042	\$ 4,553,424	\$ 4,803,862
B. New Pipelines															
C. Booster Pump System															
i. Annual Pump /Motor Replacement															
Booster 12 at Markridge	E-971														
Boosters - Encinal B & C	E-992														
Boosters - Glenwood 32 & 33															
Boosters - Glenwood 32 & 33															
Cresta Booster #26		\$ 50,000	\$ 18,207	\$ 29,793	\$ 48,000										
Mills Booster B (Pump Only)						\$ 35,000									
Encinal Booster B									\$ 50,000						
Annual Booster Replace - 1 Booster		\$ 50,000	\$ -	\$ 50,000	\$ 48,000	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ii. Pump Station Upgrade															
Paschall Booster Station - Technical Memorandum Study															
Paschall Booster Station - Booster Station															
Edmund #2 - Booster Station															
Cresta Heights Booster Station															
Ocean View Booster Station															
Goss Canyon Booster Station															
Rosemont - Booster Station															
Mills Booster Station															
Encinal Booster Station															
Edmund #1 Booster Station															
iii. VFD Pump Upgrade															
Paschall															
Oak Creek															
iv. MCC Replacement															
Paschall															
Edmund #2															
Cresta Heights															
Ocean View															
Goss Canyon															
Rosemont															
Mills Plant															
Encinal															
Edmund #1															
D. Pressure Reducing Stations															
PRS - Zone 2 to Zone 1	E-977														
PRS - Upgrade Zone 4 to Zone 3		\$ -	\$ 14,844	\$ -	\$ 14,844										
New PRS - Zone 7 to Zone 5															
E. Miscellaneous Projects															
i. Water Surge Control															
Rehabilitation Surge Tank at Glenwood															
Install Surge Tank at Mills Plant											\$ 40,000	\$ 100,000			
Rehabilitation Surge Tank at Paschall Booster Station															
Install Surge Tank at Williams															
Install Surge Tank at Oak Creek															
ii. Street/Utility/ Meter Adjustment & Upgrade															
iii. Misc.															
Upgrade - Ramsdell Mixing Station	E-977	\$ 49,310	\$ 7,925	\$ 18,000	\$ 25,925	\$ 60,000	\$ 290,000	\$ 650,000							
Mills Plant - Aeration Tower									\$ 110,000						

FY 2023/24 CIP Budget No Additional Funding Draft - 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	Forecast FY 28/29	Forecast FY 29/30	Forecast FY 30/31	Forecast FY 31/32	Forecast FY 32/33
F. Water Distribution Studies															
Integrated Resource Control Plan															
Surge Control Analysis Study															
Pressure Reducing Station Analysis Study															
Power/Electrical Study															
Water Distribution Hydraulic Study															
WD Total		\$ 2,557,447	\$ 1,232,353	\$ 192,793	\$ 1,423,146	\$ 1,118,084	\$ 1,396,100	\$ 1,650,000	\$ 3,852,591	\$ 3,675,600	\$ 3,917,758	\$ 4,191,035	\$ 4,316,042	\$ 4,553,424	\$ 4,803,862
4. Water Treatment															
A. Nitrate Removal															
i. Glenwood															
Replace Ion Exchange Resin at Glenwood									\$ 200,000						
ii. Mills															
A. pH Control															
Mills Aeration Tower									\$ 180,000						
Glenwood Aeration Tower									\$ 180,000						
B. Disinfection - Convert to Chloramines															
Conversion to Chloramination	E-1052	\$ 100,000	\$ 12,754	\$ 17,246	\$ 30,000	\$ 80,000									
C. Federal and State Regulations															
PFAs Regulatory Compliance Measures						\$ 60,000									
WT Total		\$ 100,000	\$ -	\$ -	\$ -	\$ 140,000	\$ -	\$ -	\$ 380,000	\$ 180,000	\$ -	\$ -	\$ -	\$ -	\$ -
5. Technology															
A. Automated Meter Information (AMI) System															
AMI - Communication		\$ -	\$ 36,974	\$ -	\$ 36,974										
GRANT - 3" & 4" Smart Meters		\$ 144,000	\$ 9,444	\$ 144,000	\$ 153,444										
AMI - 3/4" to 1" - Smart Meters															
AMI - Customer Service Interface		\$ 26,000	\$ 31,418	\$ (5,418)	\$ 40,000										
GRANT - AMI - USBR Water Efficiency Grant															
Grant - 1-1/2" Smart Meters - USBR Grant		\$ 335,000	\$ -	\$ 335,000	\$ -	\$ 335,000									
AMI - Meter Lids - Zones 9, 10 & 11		\$ 220,000	\$ -	\$ 220,000	\$ 220,000										
2" Smart Meters						\$ 100,000	\$ 52,500								
AMI - Meter Lids - Zones 6, 7 & 8						\$ 110,000	\$ 100,000	\$ 240,000							
AMI - Meter Lids - Zones 1, 2, 3, 4 & 5									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
B. Supervisory Control and Data Acquisition (SCADA) System															
Communication Radio Network		\$ 50,000	\$ -	\$ 50,000	\$ 50,000		\$ 115,000	\$ 135,000							
SCADA Replacement - Design	E-939														
SCADA Replacement - Installation	E-939	\$ 395,000	\$ 101,767	\$ 49,284	\$ 151,051	\$ 100,000									
TECH Total		\$ -	\$ 179,604	\$ 792,866	\$ 651,469	\$ 645,000	\$ 267,500	\$ 375,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response															
A. Emergency Electrical Generators															
New Emergency Electrical Generator - Paschall		\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							
New Emergency Electrical Generator - Mills Plant		\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							
New Emergency Electrical Generator - Wells 5, 7 & 9		\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							
B. Water Storage															
Dunsmore/Pickens - Seismic Sensors	E-976														
Ordunio - Seismic Sensors & Valve Actuators									\$ 135,000						
Oak Creek #1 & #2 - Seismic Sensors & Valve Actuators									\$ 160,000						
Encinal & Ocean View - Seismic Sensors & Valve Actuators										\$ 170,000					
C. Security															
Security Cameras - Reservoir Sites									\$ 110,000						
Security Cameras - Well Sites									\$ 50,000						
Security Cameras - Other Sites															
D. Miscellaneous															
FEMA Local Hazard Mitigation Plan															
SF/ER Total		\$ 170,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 245,000	\$ 210,000	\$ 170,000	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning															
A. Main Office															
Seismic Vulnerability Study - Main Office & Glenwood Plant															
Expansion with New Roof with Solar Panels															
New Main Office Building - Design															
B. Glenwood Plant															
Needs Assessment Study															
Upgrades to Glenwood Plant															
C. Mills Plant															
D. Reservoir Site Improvements															
Roof for Old Encinal - Storage Bldg									\$ 155,000						
Facilities Maintenance Master Plan															
5. Misc. Properties															
Encinal/Penn Property															
Well 5 Houses															
Mills House															
6. District Planning															
Asset Management Study										\$ 250,000					
Computer Maintenance Management System (CMMS)															
Solar Power Feasibility Study															
LAFCO/Overlap Area Study with GWP															
F & P Total		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 155,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total		\$ 5,022,219	\$ 1,702,509	\$ 1,544,530	\$ 2,918,676	\$ 2,901,584	\$ 2,739,800	\$ 2,265,000	\$ 5,981,591	\$ 6,206,400	\$ 5,077,415	\$ 5,143,035	\$ 6,662,042	\$ 5,803,424	\$ 8,208,862

FY 2023/24 CIP Budget \$4M annual Property Tax Roll Cost Update: 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast 27/28	FY Forecast 28/29	Forecast 29/30	FY Forecast 30/31	Forecast 31/32	FY Forecast 32/33
FY 2022/23 Capital Improvement Project Summary															
1. Water Supply		\$ 171,000	\$ 28,703	\$ 83,366	\$ 112,069	\$ 175,000	\$ 95,000	\$ 120,000	\$ 230,000	\$ 2,885,000	\$ 142,425	\$ 150,258	\$ 158,523	\$ 167,241	\$ -
2. Water Storage		\$ 853,772	\$ 256,487	\$ 475,505	\$ 731,992	\$ 863,500	\$ 886,200	\$ 950,000	\$ 2,856,800	\$ 2,135,000	\$ 1,575,000	\$ 2,035,000	\$ 1,850,000	\$ 1,850,000	\$ 1,850,000
3A. Water Distribution - Pipeline		\$ 2,408,137	\$ 1,191,377	\$ 95,000	\$ 1,286,377	\$ 4,157,807	\$ 4,140,005	\$ 3,582,203	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000
3B. Water Distribution - Other		\$ 149,310	\$ 58,191	\$ 97,793	\$ 136,769	\$ 215,000	\$ 710,000	\$ 628,025	\$ 1,721,216	\$ 1,053,100	\$ 415,000	\$ 1,517,000	\$ 219,000	\$ 221,100	\$ 73,200
4. Water Treatment		\$ 100,000	\$ 12,754	\$ 17,246	\$ 30,000	\$ 290,000	\$ 150,000	\$ -	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5. Technology		\$ 1,170,000	\$ 179,604	\$ 792,866	\$ 651,469	\$ 1,110,200	\$ 694,008	\$ 556,513	\$ 587,121	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response		\$ 170,000	\$ -	\$ -	\$ -	\$ 164,000	\$ 150,000	\$ 265,000	\$ 178,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning		\$ -	\$ -	\$ -	\$ -	\$ 101,000	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total		\$ 5,022,219	\$ 1,727,117	\$ 1,561,776	\$ 2,948,676	\$ 7,076,507	\$ 6,825,213	\$ 6,251,740	\$ 9,798,137	\$ 10,073,100	\$ 6,132,425	\$ 7,702,258	\$ 6,227,523	\$ 6,238,341	\$ 5,923,200
1. Water Supply															
A. Groundwater Water Supply															
i. Well Rehabilitation															
	Well 7 Rehabilitation	E-999													
	Well 16 Rehabilitation	E-1006													
	Well 11 Rehabilitation	E-1015													
	Well 12 Rehabilitation	E-1028													
	Well 9 Rehabilitation	E-1056	\$ 96,000	\$ 21,559	\$ 62,216	\$ 83,775									
	Well 14 Rehabilitation						\$ 110,000								
	Well 10 Rehabilitation							\$ 95,000							
	Well 16 Rehabilitation								\$ 120,000						
	Well 5 Rehabilitation									\$ 130,000					
	Future Well									\$ 135,000	\$ 142,425	\$ 150,258	\$ 158,523	\$ 167,241	
ii. New Wells															
	Re-Activate Well 2 - Design	E-956													
	Re-Activate Well 2 - Construction	E-956													
	Well 18 (Sycamore House) - Design														
	Well 18 (Sycamore House) - Construction														
	Well 19 - Design								\$ 100,000	\$ 2,750,000					
	Well 19 - Construction														
	Well 20 - Design														
	Well 20 - Construction														
	Well 21- Design														
	Well 21 - Construction														
iii. Groundwater Basin Recharge															
	Stormwater Recharge Project at CVC Park - Planning	E-985	\$ 75,000	\$ 7,144	\$ 21,150	\$ 28,294									
	Storm water Recharge Project at CVC Park - Design														
	Storm water Recharge Project at CVC Park - Construction														
	Reservoir Low Impact Development Study						\$ 40,000								
iv. Tunnel Rehabilaitaion															
	Dunsmore Tunnel Feasability Study/Rehabilitation					\$ 25,000									
	Rehabilitation of Pickens Tunnel														
	Goss Canyon Tunnel														
B. Imported Water Supply															
	Ocean View - Final	E-733CS-5													
	Future Project														
C. Recycled Water System															
i. Recycled Water															
	Recycled Water Infrastructure Feasibility Study														
	Recycled Water System with GWP - Future														
ii. Membrane Bioreactor Technology (MBR)															
	MBR Plant - Harmony/Two-Strike Park- Planning														
	MBR Plant - Harmony/Two-Strike Park- Design														
	MBR Plant - Harmony/Two-Strike Park- Construction														
D. Water Supply Studies															
	Integrated Resources Plan														
	GWP Water Supply Feasibility Study														
	Verdugo Basin Groundwater Model														
	Groundwater Well Replacement Study														
	Groundwater Pilot Hole Study														
WS Total		\$ 171,000	\$ 28,703	\$ 83,366	\$ 112,069	\$ 175,000	\$ 95,000	\$ 120,000	\$ 230,000	\$ 2,885,000	\$ 142,425	\$ 150,258	\$ 158,523	\$ 167,241	\$ -
2. Water Storage															
A. Reservoir Rehabilitation															
i. Steel Reservoir Rehabilitation															
	Rosemont														
	Oak Creek - 16" Manifold Repair	E-1026													
	Edmund #2	E-1036	\$ 53,772	\$ 31,992	\$ -	\$ 31,992									
	Goss Canyon #1	E-1053	\$ 800,000	\$ 224,495	\$ 475,505	\$ 700,000									
	Goss Canyon #2						\$ 863,500								
	Shields							\$ 886,200							
	Dunsmore								\$ 950,000						
	Eagle Canyon								\$ 2,456,800						
	Cresta Hts #1 & 2									\$ 1,750,000					
	Pickens Canyon										\$ 1,100,000				
	Ordunio											\$ 1,850,000	\$ 1,850,000	\$ 1,850,000	\$ 1,850,000

FY 2023/24 CIP Budget \$4M annual Property Tax Roll Cost Update: 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	FY Forecast 28/29	FY Forecast 29/30	FY Forecast 30/31	FY Forecast 31/32	FY Forecast 32/33
ii. Concrete Reservoir Rehabilitation															
Encinal										\$ 160,000					
Williams (Ocean View)											\$ 175,000				
Edmund #1												\$ 185,000			
iii. Steel Reservoir Corrosion Protection System															
Cathodic Protection Inspection & Replacement									\$ 100,000						
iv. Overflow & Drain System Upgrade															
Upgrade Overflow/Drain System at Ocean View															
Ocean View Reservoir - AC Pavement															
Upgrade Overflow/Drain System - Future															
B. Reservoir Water Quality															
i. Water Quality Mixing System															
Reservoir Mixing System - 4 Reservoirs									\$ 300,000						
Reservoir Mixing System - 3 Reservoirs										\$ 225,000					
Reservoir Mixing System - 4 Reservoirs											\$ 300,000				
ii. Replacement of Common Inlet/Outlet Piping															
Common Inlet/Outlet Piping Replacement															
C. Water Storage Studies															
Reservoir Inlet/Outlet & Overflow Piping Study															
Conditional Assessment of Reservoirs Study															
Ocean View #2 Reservoir Feasibility Study															
WS Total		\$ 853,772	\$ 256,487	\$ 475,505	\$ 731,992	\$ 863,500	\$ 886,200	\$ 950,000	\$ 2,856,800	\$ 2,135,000	\$ 1,575,000	\$ 2,035,000	\$ 1,850,000	\$ 1,850,000	\$ 1,850,000
3. Water Distribution															
A. Pipeline Replacement															
2800 to 3100 blocks of Los Olivos Lane - 3,400 LF	E-1033	\$ 442,000	\$ 495,993	\$ -	\$ 495,993										
4700 Block of Cheryl & 3200 Block of Alabama - 1,750 LF	E-1034	\$ 615,637	\$ 427,969	\$ 35,000	\$ 462,969										
2600 & 2700 Block of Orange (2700 LF)	E-1052	\$ 1,350,500	\$ 267,416	\$ 60,000	\$ 327,416										
FY 22/23 Pipeline Replacement (2700 LF)						\$ 1,023,084									
2400 - 2500 Blocks of Montrose (1920 LF)						\$ 1,337,500									
2600 - 2700 Blocks of Montrose (1920 LF)						\$ 1,224,400									
2200 Honolulu - South Alley (760 LF)						\$ 572,823									
FY 23/24 Pipeline Replacement (6375 LF)															
2800 - 2900 Blocks of Mary (1805 LF)							\$ 1,151,535								
3000 - 3100 Blocks of Stevens (1695 LF)							\$ 1,161,405								
3200 Block of Markridge & 5300 Block of Pennsylvania (1955 LF)							\$ 1,292,845								
2200 Block of Montrose Ln (725 LF)							\$ 534,220								
FY 24/25 Pipeline Replacement (6180 LF)															
2300 Block of Jayma Lane (1275 LF)								\$ 986,464							
2300 - 2500 Blocks of Teasley (2325 LF)								\$ 1,557,443							
2400-2600 Blocks of Upper Terrace (1550 LF)								\$ 1,038,295							
FY 25/26 Pipeline Replacement (5150 LF)															
Annual Pipeline Replacement		\$ 2,408,137	\$ 1,191,377	\$ 95,000	\$ 1,286,377	\$ 4,157,807	\$ 4,140,005	\$ 3,582,203	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000
B. Pipeline - In House (Materials and Labor)															
Foothill and Cloud PRV		\$ -	\$ 11,853												
Encinal Pipeline			\$ 5,362												
C. Booster Pump System															
i. Annual Pump /Motor Replacement															
Booster 12 at Markridge	E-971														
Boosters - Encinal B & C	E-992														
Boosters - Glenwood 32 & 33															
Boosters - Glenwood 32 & 33															
Cresta Booster #26		\$ 50,000	\$ 18,207	\$ 29,793	\$ 48,000										
Mills Booster B (Pump Only)						\$ 35,000									
Encinal Booster B							\$ 55,000								
Annual Booster Replace - 1 Booster		\$ 50,000	\$ -	\$ 50,000	\$ 48,000	\$ 35,000	\$ 55,000	\$ 58,025	\$ 61,216	\$ 63,100	\$ 65,000	\$ 67,000	\$ 69,000	\$ 71,100	\$ 73,200
ii. Pump Station Upgrade															
Paschall Booster Station - Technical Memorandum Study & Design															
Paschall Booster Station - Booster Station															
Edmund #2 - Booster Station															
Cresta Heights Booster Station															
iii. VFD Pump Upgrade															
Mills Booster A						\$ 60,000									
Paschall															
Ocean View															
iv. MCC Replacement															
Paschall								\$ 120,000	\$ 1,300,000						
Edmund #2									\$ 50,000	\$ 800,000					
Cresta Heights											\$ 150,000				
Ocean View												\$ 1,300,000			
Goss Canyon													\$ 150,000		
Rosemont														\$ 150,000	
Mills Plant															
Encinal															
Edmund #1															
D. Pressure Reducing Stations															
PRS - Zone 2 to Zone 1	E-977														
PRS - Upgrade Zone 4 to Zone 3		\$ -	\$ 14,844	\$ -	\$ 14,844					\$ 60,000					
New PRS - Zone 7 to Zone 5											\$ 60,000				
E. Miscellaneous Projects															
i. Water Surge Control															
Rehabilitation Surge Tank at Glenwood								\$ 100,000							
Rehabilitation Surge Tank at Paschall Booster Station								\$ 110,000							
Install Surge Tank at Mills Plant									\$ 130,000						
Install Surge Tank at Williams										\$ 140,000					
Install Surge Tank at Oak Creek											\$ 150,000				
ii. Street/Utility/ Meter Adjustment & Upgrade															
Street Rehabilitation - Pennsylvania Ave															
iii. Misc.															
Upgrade - Ramsdell Mixing Station	E-977	\$ 49,310	\$ 7,925	\$ 18,000	\$ 25,925	\$ 60,000	\$ 600,000	\$ 350,000							
Mills Plant - Aeration Tower								\$ 200,000							
F. Water Distribution Studies															
Surge Control Analysis Study						\$ 25,000									
Pressure Reducing Station Analysis Study															
Power/Electrical Study															
Water Distribution Hydraulic Study															
Large Diameter Pipeline Inspection															
WD Total		\$ 2,557,447	\$ 1,249,569	\$ 192,793	\$ 1,423,146	\$ 4,372,807	\$ 4,850,005	\$ 4,210,228	\$ 5,721,216	\$ 5,053,100	\$ 4,415,000	\$ 5,517,000	\$ 4,219,000	\$ 4,221,100	\$ 4,073,200

FY 2023/24 CIP Budget \$4M annual Property Tax Roll Cost Update: 05/03/23	E-Job	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/2023	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Budget FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27	Forecast FY 27/28	FY	Forecast FY 28/29	FY	Forecast FY 29/30	FY	Forecast FY 30/31	FY	Forecast FY 31/32	FY	Forecast FY 32/33	FY
4. Water Treatment																					
A. Nitrate Removal																					
i. Glenwood																					
Replace Ion Exchange Resin at Glenwood									\$ 150,000												
ii. Mills																					
Ion Exchange Plant at Mills - Design																					
Ion Exchange Plant at Mills - Construction																					
iii. Ordunio																					
Replace Bio Remediation ARoNite Membranes at Ordunio									\$ 75,000												
A. pH Control																					
Mills Aeration Tower						\$ 150,000															
Glenwood Aeration Tower							\$ 150,000														
B. Disinfection - Convert to Chloramines																					
Conversion to Chloramination	E-1052	\$ 100,000	\$ 12,754	\$ 17,246	\$ 30,000	\$ 80,000															
C. Federal and State Regulations																					
PFAs Regulatory Compliance Measures						\$ 60,000															
D. Water Quality Studies																					
E. MTBE Removal																					
WT Total		\$ 100,000	\$ 12,754	\$ 17,246	\$ 30,000	\$ 290,000	\$ 150,000	\$ -	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5. Technology																					
A. Automated Meter Information (AMI) System																					
AMI - Communication	E-1020	\$ -	\$ 36,974	\$ -	\$ 36,974																
GRANT - 3" & 4" Smart Meters	E-1031	\$ 144,000	\$ 9,444	\$ 144,000	\$ 153,444																
AMI - 3/4" to 1" - Smart Meters	E-1035																				
AMI - Customer Service Interface	E-1035	\$ 26,000	\$ 31,418	\$ (5,418)	\$ 40,000																
GRANT - AMI - USBR Water Efficiency Grant																					
GRANT - 1-1/2" Smart Meters - USBR Grant	E-1041	\$ 335,000	\$ -	\$ 335,000	\$ -	\$ 335,000															
AMI - Meter Lids - Zones 9, 10 & 11	E-1054	\$ 220,000	\$ -	\$ 220,000	\$ 220,000																
2" Smart Meters (Grant)						\$ 150,000															
AMI - Meter Lids - Zones 6, 7 & 8						\$ 475,200															
AMI - Meter Lids - Zones 1, 2, 3, 4 & 5							\$ 694,008	\$ 556,513	\$ 587,121												
B. Supervisory Control and Data Acquisition (SCADA) System																					
Communication Radio Network	E-1025	\$ 50,000	\$ -	\$ 50,000	\$ 60,000	\$ 50,000															
SCADA Replacement - Installation	E-939	\$ 395,000	\$ 101,767	\$ 49,284	\$ 151,051	\$ 100,000															
TECH Total		\$ 1,170,000	\$ 179,604	\$ 792,866	\$ 651,469	\$ 1,110,200	\$ 694,008	\$ 556,513	\$ 587,121	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6. Public Safety/Emergency Response																					
A. Emergency Electrical Generators																					
New Emergency Electrical Generator - Paschall		\$ 35,000	\$ -	\$ -	\$ -																
New Emergency Electrical Generator - Mills Plant		\$ 35,000	\$ -	\$ -	\$ -																
New Emergency Electrical Generator - Wells 5, 7 & 9		\$ 100,000	\$ -	\$ -	\$ -																
D. Miscellaneous																					
FEMA Local Hazard Mitigation Plan	M-1004																				
SF/ER Total		\$ 170,000	\$ -	\$ -	\$ -	\$ 164,000	\$ 150,000	\$ 265,000	\$ 178,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning																					
F & P Total		\$ -	\$ -	\$ -	\$ -	\$ 101,000	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total		\$ 5,022,219	\$ 1,727,117	\$ 1,561,776	\$ 2,948,676	\$ 7,076,507	\$ 6,825,213	\$ 6,261,740	\$ 9,798,137	\$ 10,073,100	\$ 6,132,425	\$ 7,702,258	\$ 6,227,523	\$ 6,238,341	\$ 5,923,200						

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 4

May 3, 2023

To: Engineering Committee
From: Brook Yared, M.S., P.E. – Interim Director of Engineering & Operations
Subject: Status Update - FY 22/23 Capital Improvement Project Budget

DISCUSSION:

The following is a status and budget update of the FY 22/23 Capital Improvement Program.

1. **3200 Block of Alabama 4700 Block of Cheryl (E-1034)**
 - a. Construction Complete
2. **2600 & 2700 Block of Orange & 5000 Block of El Adobe (E-1046)**
 - a. Construction on hiatus until June 2023
 - b. FY 23/24 Budget Carryover for Construction: \$1,023,084 (bulk of cost and construction)
3. **Transfer of Services to Glendale Water and Power (E-1051)**
 - a. Transferring Services of Frederick and Thelma to Glendale Water and Power to avoid capital replacement.

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 4/30/23</i>	<i>FY 22/23 Cost Committed from 5/1/23 to 6/30/23</i>	Projected EOY FY 22/23	Total Cost
<i>2800 to 3100 blocks of Los Olivos Lane - 3,400 LF</i>	E-1033	\$ 1,032,095	\$ 442,000	\$ 496,187	\$ 45,000	\$ 541,187	\$ 1,573,282
<i>4700 Block of Cheryl & 3200 Block of Alabama - 1,750 LF</i>	E-1034	\$ 261,596	\$ 615,637	\$ 697,785	\$ 35,000	\$ 564,370	\$ 825,966
<i>2600 & 2700 Block of Orange & 5000 Block of El Adobe - 2425 LF</i>	E-1046	\$ 1,748	\$ 1,350,050	\$ 267,416	\$ 60,000	\$ 327,416	\$ 1,350,0500

4. **Steel Reservoir Rehabilitation**
 - a. Edmund #2 (E-1036)
 - i. Scheduling Warranty Inspection
 - b. Goss Canyon #1 (E-1053)
 - i. Construction began week of January 16, 2023

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 4/30/23</i>	<i>FY 22/23 Cost Committed from 5/1/23 to 6/30/23</i>	Projected EOY FY 22/23	Total Cost
<i>Edmund #2 - Reservoir Rehabilitation</i>	E-1036	\$ 644,495	\$ 53,772	\$ 31,992	\$ -	\$ 31,992	\$ 707,534
<i>Goss Canyon #1 - Reservoir Rehabilitation</i>	E-1053	\$ -	\$ 800,000	\$ 222,495	\$ 680,382	\$ 700,000	\$ 800,000

5. **Replacement of SCADA Equipment, Programming & Integration (E-939)**
 - a. Project Schedule – April 2022 to October 2023
 - b. APEX – Programming & Integration
 - i. Sites Completed – Wells 5, 7, 8, 9, 11, 14 & 16
 - ii. Ramsdell Mixing Station & Glendale/CVWD Interconnection
 - iii. Encinal Reservoir
 - iv. Glenwood Plant with Wells 6, 10, 12 & 15
 - v. Mills Plant with Well 1
 - c. Sites Pending Integration (2023)

- i. Williams Reservoir May 2023
- ii. Paschall Booster Station and Rosemont Reservoir June 2023
- d. Radio Communication Upgrade – Moved to FY 23/24

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/23	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Total Cost
Communication Radio Network	E-1025	\$ 17,610	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 90,527
SCADA Replacement - Installation	E-939		\$ 395,000	\$ 49,285	\$ 150,715	\$ 200,000	\$ 831,872

6. AMI – Installation of ¾" & 1" meters (E-1035)

- a. Installation of 640 additional ¾"-1" meters
- b. Scheduling remaining meter upgrades

7. AMI – Installation of 3" & 4" meters (E-1031) – USBR Grant

- a. Install and connect 32 – 3" & 4" meters starting in September 2022
- b. 1-1/2-inch meter installation construction deferred to FY 23/24

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/23	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Total Cost
AMI - Communication	E-1020	\$ 111,847	\$ -	\$ 36,975	\$ -	\$ 36,975	\$ 410,957
GRANT - 3" & 4" Smart Meters	E-1031	\$ 56,165	\$ 144,000	\$ 9,444	\$ 134,556	\$ 144,000	\$ 201,165
AMI - Meter Lids - Zones 9, 10 & 11	E-1054	\$ -	\$ 220,000	\$ 14,884	\$ 205,116	\$ 220,000	\$ 220,000
AMI - Customer Service Interface	E-1035	\$ 57,402	\$ 26,000	\$ 31,419	\$ 31,419	\$ 35,000	\$ 92,402
GRANT - 1-1/2" Smart Meters - USBR Grant	E-1041	\$ 1,664	\$ 335,000	\$ -	\$ 125,000	\$ 125,000	\$ 336,664

8. Conversion of Disinfection System to Chloramines (E-1052)

- a. Proposal Received from Water Quality and Treatment Solutions – \$83,980

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	FY 22/23 Cost to date from 7/1/22 to 4/30/23	FY 22/23 Cost Committed from 5/1/23 to 6/30/23	Projected FY 22/23	Total Cost
Conversion to Chloramination	E-995/ E-1052	\$ -	\$ 100,000	\$ 12,274	\$ 17,726	\$ 30,000	\$ 1,594,672

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

- a. Project 1 – New emergency electrical generators at 5 sites - Deferred pending Grant availability.
 - i. On Hold pending funding increase – Review meeting with OES on May 4, 2023
- b. Project 2 – Seismic Evaluation of CVWD's facilities application – Deferred pending Grant availability.
 - ii. On Hold pending funding increase – Review meeting with OES on May 4, 2023

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

- a. Hydraulic Modeling Review Complete
- b. Reviewing Design Options

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Recorded FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 4/30/23</i>	<i>FY 22/23 Cost Committed from 5/1/23 to 6/30/23</i>
<i>Upgrade - Ramsdell Mixing Station</i>	E-977	\$ 48,594	\$ 49,310	\$ 7,645	\$ -

11. Well 2

- a. All grant Claims submitted and reimbursed -
- b. Costs to date and Options Moving Forward
- c. Discussion of Alternatives

FY 2022/23 CIP Program Cost Update: 5/03/23	E-Job	Total Recorded through FY 21/22	Budget FY 22/23	<i>FY 22/23 Cost to date from 7/1/22 to 4/30/23</i>	<i>FY 22/23 Cost Committed from 5/1/23 to 6/30/23</i>
Construction of Well 2 and Related Facilities	E-956	\$ 3,141,559	\$ -	\$ 1,121	\$ -
Well 2 Nitrate Facility Maintenance	01-02-5390- 000	\$ 253,322	\$ 121,700	\$ 57,389	\$ -

12. Well 9 Rehabilitation

- a. Rehabilitation work – 5/4/2023

13. Booster 26 at Cresta Heights Replacement

- a. Replacement scheduled for May 2023

14. Wastewater Master Plan

- a. GIS and Hydraulic Model Update in Progress
- b. CIP Development beginning May 2023

SUMMARY:

Staff continues to provide updated information to the Engineering Committee as the FY 22/23 CIP program progresses over the next two months.

Prepared & submitted by:



Brook Yared, M.S., P.E.
Interim Director of Engineering & Operations

Attachments:

1. Pipeline Cost vs. Budget Table

Crescenta Valley Water District
Pipeline Construction Cost Summary
2018 - 2023

E-job No.	Job Description	Contractor	Date Complete	Atlas Page	Pipe Size	Total Linear Ft	Original Budget	Cost Contractor	Cost District	Total Cost	Cost/LF - Total Cost
E-982	8-inch Water Main on the 2700, 3000, and 3100 blocks of Brookhill Ave. and the 5000 block of La Crescenta Ave	Brkich Construction	11/7/18	7,8	8	2,700	760,000	\$841,259	\$282,769	\$1,141,501	\$423
E-1002	Construction of 8-inch Water Main on 3200 and 3300 blocks of Brookhill Street	J. DeSigio Construction	12/29/19	7	8	1,500	590,000	\$506,037	\$114,541	\$627,534	\$418
E-1009	Construction of 8-inch Water Main on 4700 & 4800 Block of Pennsylvania	Brkich Construction	2/10/20	7, 14	8	770	-	\$325,605	\$450,920	\$848,021	
E-1008	Construction of 8-inch Water Main on 2400 & 2500 Block of Janet Lee Street	Brkich Construction	4/28/21	16,17	8	1,655	525,000	\$506,431	\$104,226	\$637,009	\$385
E-1019	Water Main Replacement for the 4300 Block of Rosemont Ave	Brkich Construction	5/28/21	22,27	8	645	280,000	\$299,826	\$17,564	\$341,887	\$530
E-1021	10-inch Pipeline Replacement on the 3400 & 3500 Blocks of Encinal Ave	TE Roberts	3/31/21	13,14	8	1,660	707,000	\$552,490	\$209,254	\$781,790	\$471
E-1022	Water Pipeline Replacement on the 2700 Block of Paraiso Way, 4800 Block of Dyer, 2800 Block of El Caminito, 4800 Block of	Brkich Construction	11/20/21	15,16	8	1,925	775,000	\$525,403	\$290,530	\$822,312	\$427
E-1033	Construction of 8-Inch Water Main on the 2800, 2900, 3000, 3100 Block of Los Olivos Ln	Brkich Construction	June-22	14,15,16	8	3,400	1,500,000	\$1,040,160	\$488,605	\$1,529,056	\$450
E-1034	3200 Block of Alabama, 4700 & 4800 Blocks of Cheryl Ave and 3300 Block of Thema Street	Brkich Construction	August-22	7,14	8	1,650	1,100,000	\$460,000	\$280,699	\$884,483	\$536
E-1046	Orange Ave. and Adobe Ln.	J Vega Construction	September-23	16	6/12	2,700	1,350,500	\$890,633	\$459,867		