ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA
TRABUCO CANYON WATER DISTRICT
ADMINISTRATION FACILITY
32003 DOVE CANYON DRIVE, TRABUCO CANYON, CA
NOVEMBER 5, 2025 AT 8:00 AM

COMMITTEE MEMBERS
Mark Anderson, Committee Chair
Glenn Acosta, Committee Member
John Horst, Committee Member Alternate

DISTRICT STAFF
Fernando Paludi, General Manager
Michael Perea, District Secretary
Lorrie Lausten, District Engineer
Gary Kessler, Water System Superintendent
Oscar Ulloa, Wastewater Superintendent
Jason Stroud, Maintenance Superintendent

AGENDA NOTE:
Trabuco Canyon Water District (District) will make this Engineering/Operational Committee Meeting available by telephone audio as follows:

Telephone Audio: *1 (669) 900-6833* ***Access Code:*** 973-7562-7682

*Persons desiring to monitor the Committee meeting agenda items may download the agenda and documents on the internet at **www.tcwd.ca.gov**. You may submit public comments by email to the Committee at **mperea@tcwd.ca.gov**. In order to be part of the record, emailed comments on meeting agenda items must be received by the District at the referenced e-mail address not later than 7:00 a.m. (PDT) on the day of the meeting.*

CALL MEETING TO ORDER

VISITOR PARTICIPATION
*Members of the public wishing to address the Committee regarding a particular item on the agenda are requested to submit public comments at the time of the meeting or by email to the Committee at **mperea@tcwd.ca.gov**. The Committee Chair will call on the visitor following the Committee's discussion about the matter. Committees do not constitute a quorum of the Board of Directors and Committee Members cannot make decisions on matters. The Committee makes recommendations only to the Board of Directors. Members of the public will be given the opportunity to speak to the Committee prior to making a recommendation on the matter. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

ORAL COMMUNICATION
*Members of the public who wish to make comment on matters not appearing on the agenda are requested to submit oral communication at the time of the meeting by email to the Committee at **mperea@tcwd.ca.gov**. Under the requirements of State Law, Directors cannot take action on items not identified on the agenda and will not make decisions on such matters. The Board President may direct District Staff to follow up on issues as may be deemed appropriate. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

COMMITTEE MEMBER COMMENTS

REPORT FROM THE GENERAL MANAGER

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | NOVEMBER 5, 2025

ENGINEERING MATTERS

PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
LORRIE LAUSTEN, DISTRICT ENGINEER

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:
Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar).
1. October 1, 2025 Committee Meeting

ITEM 2: HERITAGE SEWER LIFT STATION IMPROVEMENTS CONSTRUCTION CONTRACT AWARD

RECOMMENDED ACTION:
Receive information at the time of the Committee Meeting and make recommendations as necessary.

ITEM 3: HAMILTON OAKS COMMUNITY SYSTEM PRESSURES TECHNICAL MEMORANDUM - HAZEN

RECOMMENDED ACTION:
Receive information at the time of the Committee Meeting and make recommendations as necessary.

ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Dimension Water Treatment Plant Pipeline Rehabilitation Project
2. Other Projects

RECOMMENDED ACTION:
Committee to receive project status updates at the time of the Committee Meeting.

OPERATIONAL MATTERS

PRESENTER(S): GARY KESSLER, WATER SYSTEM SUPERINTENDENT
OSCAR ULLOA, WASTEWATER OPERATIONS SUPERINTENDENT
JASON STROUD, MAINTENANCE DEPARTMENT SUPERINTENDENT

ITEM 5: WATER SYSTEM UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

ITEM 6: WASTEWATER SYSTEM UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

ITEM 7: MAINTENANCE DEPARTMENT UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

REGULATORY AND OTHER MATTERS

ITEM 8: OTHER MATTERS/REPORTS

RECOMMENDED ACTION:
Hear Other Matters/Reports that may have arisen after the posting of the agenda.

ADJOURNMENT

AVAILABILITY OF AGENDA MATERIALS
Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Trabuco Canyon Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection at the Trabuco Canyon Water District Administrative Facility, 32003 Dove Canyon Drive, Trabuco Canyon, California (District Administrative Facility) or will be posted online on the District's website located at www.tcwd.ca.gov. If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available online at www.tcwd.ca.gov at the same time as they are distributed to the Board Members, except that, if such writings are distributed immediately prior to or during the meeting, they will be posted online on the District's website located at www.tcwd.ca.gov.

COMPLIANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2
In compliance with California law and the Americans with Disabilities Act, if you need special disability-related modifications or accommodations, including auxiliary aids or services in order to participate in the meeting, or if you need the agenda provided in an alternative format, please contact the District Secretary at (949) 858-0277, at least 48 hours in advance of the scheduled Board meeting. Notification at least 48 hours prior to the meeting will assist the District in making reasonable arrangements to accommodate your request. The Board Meeting Room is wheelchair accessible.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

ENGINEERING MATTERS
ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:
Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar):

1. *October 1, 2025 Committee Meeting*

CONTACTS (staff responsible): PALUDI/PEREA

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | OCTOBER 1, 2025

DIRECTORS PRESENT
Mark Anderson, Committee Chair
Glenn Acosta, Committee Member

STAFF PRESENT
Fernando Paludi, General Manager
Michael Perea, Assistant General Manager
Lorrie Lausten, District Engineer
Gary Kessler, Water Superintendent
Oscar Ulloa, Wastewater Superintendent
Jason Stroud, Maintenance Superintendent
Roseann Lejsek, Executive Assistant
Phil Serpas, CMMS/SCADA Administrator

STAFF ABSENT
None

DISTRICT CONSULTANTS
None

PUBLIC PRESENT
None

CALL MEETING TO ORDER
Director Anderson called the October 1, 2025 Engineering/Operational Committee Meeting to order at 8:00 a.m.

VISITOR PARTICIPATION
No comments were received.

ORAL COMMUNICATION
No comments were received.

COMMITTEE MEMBER COMMENTS
None

REPORT FROM THE GENERAL MANAGER
None

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

Mr. Paludi presented the Engineering/Operational Committee Meeting Recap for Committee review in accordance with the agenda.

RECOMMENDATION: The Committee recommended forwarding this matter to the Board of Directors (Consent Calendar).

ITEM 2: QUARTERLY CAPITAL IMPROVEMENT PROGRAM UPDATE

Mr. Paludi presented this matter for Committee consideration. Ms. Lausten provided a high-level status update of each project budgeted for FY25/26, and a detailed status update of the DWTP Pipeline Improvements project.

RECOMMENDATION: None – Informational item only.

ITEM 3: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. **Dimension Water Treatment Plant Pipeline Rehabilitation Project**
   Ms. Lausten reported that Phase 1A is on track to be completed in the next few weeks, and she stated that she anticipates the project to be completed by the end of the year. Ms. Lausten noted that small, unforeseen challenges have been identified as the project progresses but that these matters are being worked through. Mr. Kessler provided a brief update on the status of the filter plant project.

2. **Urban Water Management Plan**
   Ms. Lausten reported that the Urban Water Management Plan must be updated every five years, and that staff attended a kickoff meeting with MWDOC for cost-sharing services to complete the report. Ms. Lausten added that the approximate cost to the District is $40,000.

3. **Other Projects**
   Staffing - Mr. Paludi reported that Mr. David Rodriguez has been hired as a full-time employee of the District. Director Acosta suggested that Mr. Rodriguez attend future meetings of the Engineering/Operational Committee.

   Trabuco Oaks Community Hydrant Pressures – Mr. Perea reported that the District's consultant, Hazen & Sawyer, was preparing a cost assessment memo that should be completed in the next couple of weeks.

Discussion occurred regarding the status of a claim with the County of Orange related to potential water quality issues stemming from the Airport Fire. Mr. Kessler reported that sample testing has been completed at the creek, and that no evidence of contamination has been found, therefore, a claim has not been filed at this time.

RECOMMENDATION: None – Informational item only.

ITEM 4: WATER SYSTEM UPDATES

Mr. Kessler reviewed the projects and repairs for the prior month, and he reported that Water Operations staff had completed the following tasks:

1. Worked with Hydrotech on EMASS at pump stations.
2. Assisted Meter Tech with angle stop repair on Old Oak in Robinson Ranch.
3. Performed site cleanup at Harris Grade Tanks (weeds and painting).
4. Assisted with both parts 1A and 1B on transmission main line repair.

Mr. Kessler presented the Water System Summary for Committee review, and he noted that the report would reflect September's data at next month's meeting.

RECOMMENDATION: None – Informational item only.

ITEM 5: WASTEWATER SYSTEM UPDATES

Mr. Ulloa reviewed the projects and repairs for the prior month, and he reported that Wastewater Operations staff had completed the following tasks:

1. Replaced a 4" valve for filter 2 at the WWTP.
2. Installed a 4" bypass drain line at Dove Creek for weed abatement control.
3. Weed abatement completed at the WWTP to comply with the Division of Safety of Dams (DSOD).
4. Assisted with process screen replacements at Heritage Lift Station.
5. General painting at WWTP.
6. Line cleaned 1.5 miles of gravity sewer line on Santiago Rd.

Mr. Ulloa presented the Recycled Water System Summary for Committee review, and he noted that the report would reflect September's data at next month's meeting. Mr. Ulloa also presented the Sewer System Management Plan Quarterly Report for Committee review.

RECOMMENDATION: None – Informational item only.

ITEM 6: MAINTENANCE DEPARTMENT UPDATES

Mr. Stroud reviewed the projects and repairs for the prior month, and he reported that Maintenance staff completed the following tasks:

Projects and Repairs

Maintenance staff performed and/or completed the following tasks and projects:

Water Operations

1. Witnessed slip line project start up on DWTP transmission line.

Wastewater Operations

1. Received new dual head air compressor for WWTP.
2. Assisted Wastewater dept with sewer line cleaning on Santiago Canyon Road.

District Fleet Upgrades & Other Projects

1. BIT Program.
2. Prepped Porter Ranch for OCFA USAR training.
3. Received new 200-gallon water tank skid.
4. Received five (5) new small generators: one 5500 watt two 3500 watt and two 2000 watt. These are the smaller job site type used for power tools and loss of power for our telemetry sites.
5. Cleaned up shop and Maintenance yard in preparation for facility tours.

RECOMMENDATION: None – Informational item only.

ITEM 7: OTHER MATTERS/REPORTS

No other matters were reported.

RECOMMENDATION: None

ADJOURNMENT

Director Anderson adjourned the October 1, 2025 Engineering/Operational Committee Meeting at 8:20 a.m.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

ENGINEERING MATTERS

ITEM 2: HERITAGE SEWER LIFT STATION IMPROVEMENTS CONSTRUCTION CONTRACT AWARD

Trabuco Canyon Water District (District) owns and operates the Heritage Sewer Lift Station (Heritage SLS) located on Heritage Drive between Robinson Ranch Road and Silvertree Lane in the Trabuco Highlands Community. The Heritage SLS is a critical pump station that conveys pumped wastewater flows from a portion of the lower Dove Canyon community and Rancho Cielo community (from Via Allegre SLS), Walden Homes, Trabuco Marketplace, Dahlia Court community, and lower Robinson Ranch (from Plano Trabuco SLS) via a sewer force main. The facility also receives gravity sewer flows from the upper Robinson Ranch community and Trabuco Highlands community and serves as the final pump station of the sanitary sewer system before the Robinson Ranch Wastewater Treatment Plant (WWTP).

In FY 22/23, operations requested the installation of a sewer bypass valve assembly for emergency and maintenance work. This work was completed in February 2023. In FY 24/25, construction was completed to install a back-up in stock pump, including new discharge header improvements and isolation valves. The remaining full site upgrades were budgeted for FY 25/26 and FY 26/27, which include dry pit and yard piping improvements, installation of a bypass wet well, gravity sewer main, wet well improvements, MCC upgrades and site/security improvements.

In October 2025, staff solicited bids from the following contractors for the above improvements:

Heritage SLS Improvements-Contractors
Schuler Construction
Olsson Construction
SS Mechanical
Ferreira Construction
Pacific Hydrotech

Bids are due on November 3, 2025 and a recommendation will be made at the time of the meeting.

FUNDING SOURCE:
Capital Improvement Program

FISCAL IMPACT (PROJECT BUDGET):
$1,506,360

ENVIRONMENTAL COMPLIANCE:
Notice of Exemption was filed with the County of Orange on October 21, 2021.

RECOMMENDED ACTION:
Receive information at the time of the Committee Meeting and make recommendations as necessary.

EXHIBIT(S):
None

CONTACTS (staff responsible): PALUDI/LAUSTEN

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

ENGINEERING MATTERS

ITEM 3: HAMILTON OAKS COMMUNITY SYSTEM PRESSURES TECHNICAL MEMORANDUM - HAZEN

The Hamilton Oaks community is located in the unincorporated County of Orange portion of the District's service area and includes approximately thirty-five (35) homes. The Hamilton Oaks community is situated near the same elevation as the Harris Grade above-ground reservoirs near the community. The District completed a 2022 System-wide Master Plan Update (Master Plan) with the assistance of Hazen to perform a review of all systems and to identify areas of improvement.

In Section 6.5 Distribution System Pressure, Hazen provided an overview of the District's minimum pressure criteria and indicated that "low- and high-pressure areas in the system are primarily attributed to elevation…it is also typically not preferred in operations to change pressures for certain areas because the pipelines are accustomed to certain pressures and raising those pressures could result in leaks or breaks."

Many of the homes in the Hamilton Oaks community have historically had low pressures due to the relatively high elevations in the Harris Grade Zone along Hamilton Trail; this was documented in the 2022 Master Plan in Section 6.5. In their recommendations, Hazen indicated that a proposed solution would be "the installation of a parallel line and a new pump station, essentially creating a new sub zone, would be required to mitigate low pressures along Hamilton Trail." (6.6.2)

Based on feedback and input from District customers in the Hamilton Oaks community, District staff requested a technical memorandum (TM) and conceptual estimate from Hazen on this potential system improvement (attached). The TM recommends the construction of a pump station with two pumps, one fire flow pump, a backup power generator, 4,500 LF of PVC pipe, and a 2,000-gallon hydro-pneumatic tank.

More information may be presented at the time of the meeting.

FUNDING SOURCE:
None at this time

FISCAL IMPACT (PROJECT BUDGET):
$7,010,000 (Conceptual Estimate) – No Budget At This Time

ENVIRONMENTAL COMPLIANCE:
Not applicable

RECOMMENDED ACTION:
Receive information at the time of the Committee Meeting and make recommendations as necessary.

EXHIBIT(S):
1. Hazen Technical Memorandum and Conceptual Estimate – Hamilton Trail Low Pressures

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN

Hazen *Technical Memorandum*

October 16, 2025

To: Michael Perea (Trabuco Canyon Water District)
Lorrie Lausten, PE (Trabuco Canyon Water District)

From: Peace Maari, PE (Hazen and Sawyer)
Tori Yokoyama, PE (Hazen and Sawyer)

Hamilton Trail Low Pressures

DRAFT

Introduction

The purpose of this technical memorandum is to address low-water pressures identified along Hamilton Trail. The recommended improvements include the installation of a new pump station and supporting pipeline to increase water pressures in the region above 40 psi and continue Trabuco Canyon Water District's mission of providing reliable service to its customers.

1. Background

The 2022 System-wide Master Plan Update and Condition Assessment was prepared as an update to the 1999 Water, Wastewater and Reclaimed Water Master Plan. The Master Plan efforts included evaluating distribution pressures within the water system using the criteria shown in Table 1.

Table 1: Pressure Criteria for Distribution System

Demand Condition	Minimum Service Pressure (psi)	Notes
Static Pressure (No Demands)	60 psi	This is preferred, not required. Desired range is 60 to 80 psi.
Dynamic Pressure (Operating)	40 psi	This is a requirement for all demand conditions, except fire flow.
Maximum Day + Fire Flow	20 psi	This is a requirement

The 2022 Master Plan analysis identified segments along Hamilton Trail where minimum water pressures drop below 40 psi. Refer to Appendix B for detailed results. These low pressures are attributed to the relatively high elevations within the Harris Grade Zone. Figure 1 illustrates the affected region along Hamilton Trail. This memorandum proposes the construction of a pump station to mitigate these low pressures.

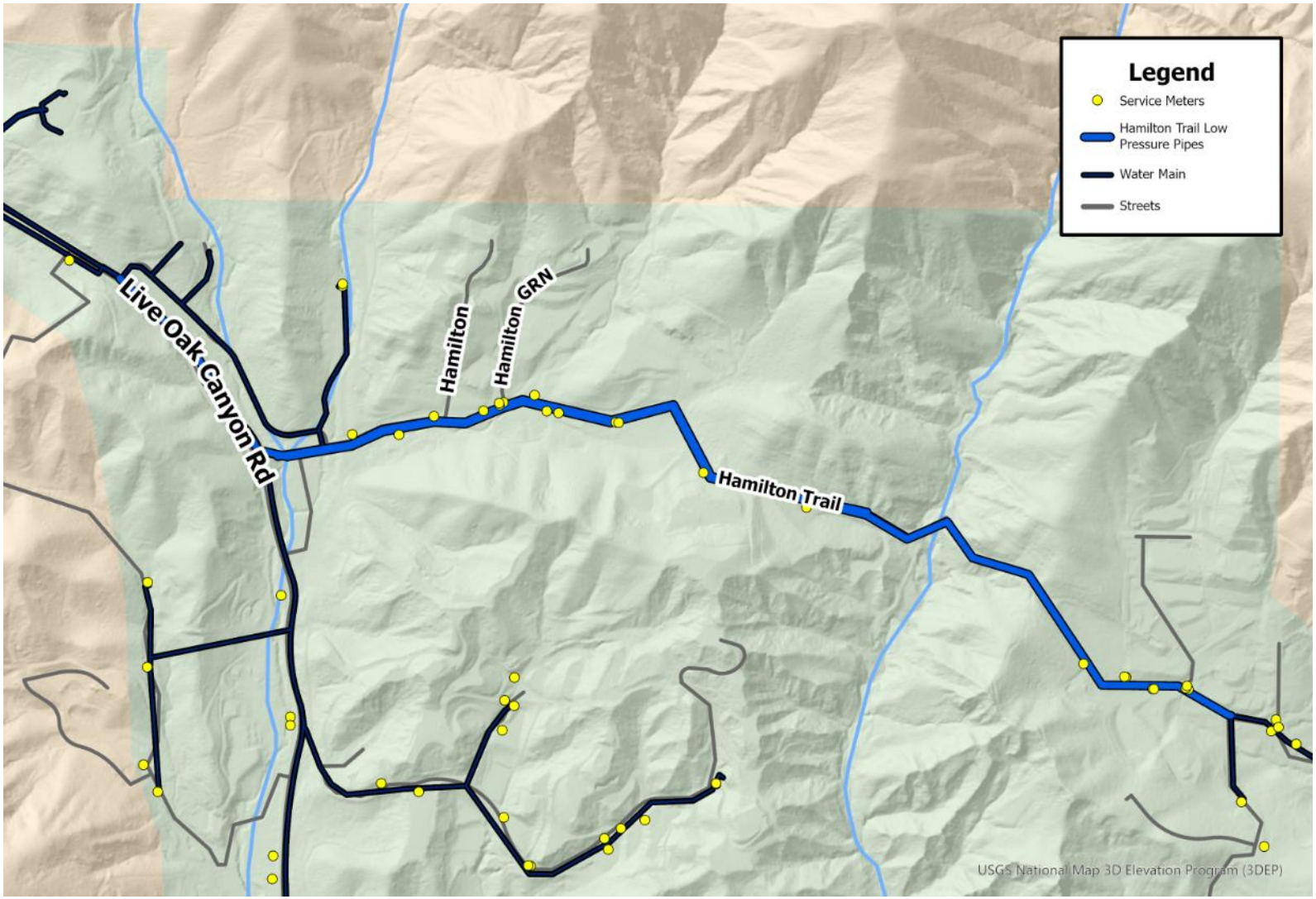


Figure 1: Hamilton Trail Low Pressure Areas

2. Proposed Pump Station

Low water pressure in this area affects approximately 22 homes along Hamilton Trail. To address this issue, installing a parallel pipeline and a new pump station, effectively creating a new sub-zone, would be necessary to improve pressures.

Table 2 lists the proposed pump station components and associated supporting pipeline. The pump station will include two (2) 175 gpm pumps for daily system demands and one (1) 1,500 gpm pump for fire flow during emergency events. Additionally, the project includes the installation of approximately 4,500 linear feet of 10-inch PVC pipeline to serve the 22 homes currently experiencing low water pressure. As part of the improvements, existing service lines for these homes will be relocated and connected to the new pipeline.

To ensure uninterrupted operation during power outages, a generator is recommended for backup power. Additionally, a hydropneumatic tank is proposed to help maintain consistent water pressure, reduce pump cycling, and extend the operational life of the pumps.

Table 2: Proposed Pump Station Components

Description	Quantity
175 GPM, 10 HP Pump	2
1500 GPM, 40 HP Fire Flow Pump	1
Backup Generator	1
10-inch PVC Pipe	4,500 LF
2,000 gallon Hydro-Pneumatic Tank	1

3. Cost Estimate

A cost estimate of the proposed improvements can be found in Appendix A, including a conceptual basis of cost estimate memorandum. The total cost estimate for the proposed improvements is about $7 M. Please view Table 3 for the cost estimate summary breakdown.

Table 3: Cost Estimate Summary

No.	Description	Total
1	Pump and Aboveground Piping	$630,000
2	Pump Building	$960,000
3	Yard Piping	$790,000
4	Site Work	$620,000
5	Generator	$250,000
6	Electrical and Controls	$1,560,000
7	Transmission Pipe	$2,200,000
	Total (rounded)	**$7,010,000**

1. Construction duration assumed to be 18 months.

Appendix A: Cost Estimate

Hazen *Memorandum*

October 10, 2025

To: Hazen Design Team

From: Chris Portner, PE, CEP

Re: Trabuco Canyon Water District

Hamilton Trail Lower Pressures

Conceptual Estimate

1. Introduction

This memorandum is a supplement to the cost estimate that corresponds to the Conceptual Estimate submitted to the client in October 2025. The project work is to be performed in Orange County, California. This estimate is for construction of a booster pump station.

The probable construction cost for the project is $7.0M as shown in Attachment 1 Summary. The estimate serves for alternative analysis and budget authorization and is considered to be an AACE Class 5 level. Class 5 has a typical accuracy range of -50% on the low side and +100% on the high side. A 40% design contingency has been added to the estimate based on current status of the design documents, the nature of the project and the estimate classification.

2. Estimate Basis

Estimate costs are derived from the following:

1. 1604 Zone Hydro-Pneumatic Booster Pump Station Improvement Plans for Tract 17388, project drawing dated August 2018.
2. Discussions with Design Team.

3. Planning Basis

Base Assumptions are the following

1. Construction NTP was assumed to be second quarter 2026.
2. Construction Duration was assumed to be 18 months.
3. The project is assumed to be procured as a single prime contract through a traditional design/bid/build process.

4. Cost Basis

1. Wage rates utilized are based on prevailing wages published for Orange County current to June 30, 2026.

2. A 40-hour work week is assumed, no shift, weekend or other premium time is provided
3. Wherever possible, equipment rates are based on current published rental rates as listed in the AED Blue Book, supplemented by RS Mean's data, the AED Green Book and local rental suppliers.
4. Crews, equipment and productivity used for work items are based mostly on standards specific to each trade. Some information was supplemented by RS Mean's data modified where necessary by estimator judgment.
5. The following item costs were based upon vendor quotes:

    a) None

5. Itemized Estimate Notes

1) Pumps and Aboveground Piping
    a) Furnish/install 10hp centrifugal pump (2).
    b) Furnish/install 40hp centrifugal fire pump (1).
    c) Allow for 4- and 10-inch diameter discharge piping, fittings, and valves.
    d) Allow for additional small piping.
2) Pump Building
    a) Construct CMU building (24-ft x 42-ft).
3) Yard Piping
    a) Allow for 4- and 12-inch diameter suction and discharge piping.
    b) Allow for additional small piping.
4) Site Work
    a) Furnish/install 2,000 gallon hydropneumatic tank
        i) Place cast-in-place concrete slab-on-grade (10-ft x 10-ft)
    b) Allow for site finishing as a percentage of cost.
5) Generator
    a) Furnish/install 80kW generator.
        i) Place cast-in-place concrete slab-on-grade (10-ft x 20-ft).
6) Electrical and Controls
    a) Allow for duct banks.
    b) Allow for electrical equipment:
        i) Utility transformer, 100kVA
        ii) Utility meter, 200A
        iii) MCC, 200A
        iv) ATS, 200A
        v) LP, PP, LP-TX, PP-TX
    c) Allow for miscellaneous instrumentation and field wiring.
    d) Allow for programming.
7) Transmission Pipeline
    a) Furnish/install 10-inch diameter PVC pipe.
        i) Assume 4-ft cover.
        ii) Assume through an existing street so include pavement replacement and traffic control.

6. Below the Line Adders

The following adders were used:

Below the Line Adders

Item	%
General Conditions (Div01)	15
Contractor Overhead	10
Contractor Profit	10
Annual Labor Escalation to Mid-Point of Construction	5
Annual Material Escalation to Mid-Point of Construction	5
Insurance and Bonding	3
Design Contingency	40

These factors are generally in-line with recent estimated projects in this location and of this size and conform to the AACE Class of each scope.

7. Other Assumptions

Additional assumptions to the estimate include:

1. It is assumed that high groundwater will not impact excavations.
2. It is assumed that normal soils are present for excavation purposes and are suitable as backfill.
3. It is assumed that no hazardous materials are present.
4. It is assumed that no temporary pumping or service is required when connecting to existing distribution piping.
5. It is assumed that a new utility transformer and meter are required.

8. Exclusions

The following items are specifically excluded from the scope of this estimate:

1. Hazardous material abatement, removal or disposal
2. Dewatering
3. Temporary pumping or service

9. Exceptions

None taken.

10. Risks and Opportunities

Some risk items and opportunities need to be considered in the process of reviewing estimated costs. These are the following:

1. Whenever performing underground work, there is the risk that previously unmarked utilities, cultural artifacts or other unknown buried objects will be uncovered that will lead to delays and cost impacts to the project.
2. The current bid climate has exhibited higher than expected low bids. The combination of high material prices continued uncertainty about the long-term economic outlook, a shortage of labor in both construction trades and onsite management, and a still robust number of construction starts has led to fewer bidders on most projects and less competitive bids overall. These effects are highly localized and depend upon a project's specialization, cost, duration, and location. As the bid period approaches, the bid climate should be analyzed and appropriate factors included.
3. Recent imposition of tariffs has led to uncertainty and increases in material costs. The extent and duration of the tariffs is currently unknown. Whether tariffs, or their impacts, will be in effect for the project duration is unknown but as bid draws near the impact of any remaining tariffs should be evaluated.

11. Estimate Quality Assurance

Estimate review has been ongoing. No second party review has been undertaken.

12. Estimating Team

Oversight to the estimating team is provided by Peace Maari.

The principal or lead estimator is Chris Portner, P.E, CEP.

All estimate reviews have been internally reviewed by the Design and Estimating Teams.

Hazen

Trabuco Canyon Water District

Hamilton Trail Low Pressures

Conceptual Estimate

Estimate Summary - CSI Division by WBS

10/10/2025
10/10/2025

	Description	Total
1	Pump and Aboveground Piping	$630,000
2	Pump Building	$960,000
3	Yard Piping	$790,000
4	Site Work	$620,000
5	Generator	$250,000
6	Electrical and Controls	$1,560,000
7	Transmission Pipe	$2,200,000
8	**Total (rounded):**	**$7,010,000**

Note: Project Assumptions NTP: 11/1/25, 549 CCD (18 months)

Hazen

Trabuco Canyon Water District
Hamilton Trail Low Pressures
Conceptual Estimate
Estimate Summary - CSI Division by WBS

10/10/2025
10/10/2025

	Description			Pump and Aboveground Piping	Pump Building	Yard Piping	Site Work	Generator	Electrical and Controls	Transmission Pipe	Total
Div 02	Existing Conditions			$ -	$ -	$ -	$ -	$ -	$ -	$ 73,964	$ 73,964
Div 03	Concrete			$ -	$ 56,726	$ -	$ 5,703	$ 10,827	$ -	$ -	$ 73,256
Div 04	Masonry			$ -	$ 352,989	$ -	$ -	$ -	$ -	$ -	$ 352,989
Div 26	Electrical			$ -	$ -	$ -	$ 100,798	$ 93,662	$ 621,751	$ -	$ 816,211
Div 31	Earthwork			$ -	$ 26,421	$ -	$ 4,232	$ 7,003	$ -	$ 353,802	$ 391,458
Div 32	Exterior Improvements			$ -	$ -	$ -	$ 172,783	$ -	$ -	$ 120,045	$ 292,828
Div 40	Process Interconnections			$ 157,076	$ -	$ 350,511	$ -	$ -	$ -	$ 413,261	$ 920,848
Div 40P	Process Monitoring and Control System			$ -	$ -	$ -	$ -	$ -	$ 83,378	$ -	$ 83,378
Div 43	Process Gas and Liquid Handling, Purification and Storage Equipment			$ 125,315	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,315
	Subtotal:			**$ 282,391**	**$ 436,136**	**$ 350,511**	**$ 283,517**	**$ 111,492**	**$ 705,129**	**$ 961,072**	**$ 3,130,249**
	Small Tools (Applied on Labor)	4.0%	on	$ 64,234	$ 29,134	$ 96,410	$ 16,687	$ 25,075	$ 115,850	$ 394,445	
	Small Tools (Applied on Labor) Total:			$ 2,569	$ 1,165	$ 3,856	$ 667	$ 1,003	$ 4,634	$ 15,778	$ 29,673
	Incidental Overtime (Applied on Labor)	10.0%	on	$ 64,234	$ 29,134	$ 96,410	$ 16,687	$ 25,075	$ 115,850	$ 394,445	
	Incidental Overtime (Applied on Labor) Total:			$ 6,423	$ 2,913	$ 9,641	$ 1,669	$ 2,507	$ 11,585	$ 39,445	$ 74,184
	General Conditions	15.0%	on	$ 291,384	$ 440,215	$ 364,009	$ 285,853	$ 115,003	$ 721,348	$ 1,016,294	
	General Conditions Total:			$ 43,708	$ 66,032	$ 54,601	$ 42,878	$ 17,250	$ 108,202	$ 152,444	$ 485,116
	Direct and Indirect Costs Total:			**$ 335,091**	**$ 506,247**	**$ 418,610**	**$ 328,731**	**$ 132,253**	**$ 829,550**	**$ 1,168,739**	**$ 3,719,221**

Hazen

Trabuco Canyon Water District
Hamilton Trail Low Pressures
Conceptual Estimate
Estimate Summary - CSI Division by WBS

10/10/2025
10/10/2025

	Description			Pump and Aboveground Piping	Pump Building	Yard Piping	Site Work	Generator	Electrical and Controls	Transmission Pipe	Total
	Add-On / Mark-Up										
	Labor Escalation at 5% annually	4.1%	on	$ 103,439	$ 81,572	$ 147,002	$ 50,515	$ 40,520	$ 208,587	$ 548,223	
	Labor Escalation Total:			$ 4,292	$ 3,385	$ 6,100	$ 2,096	$ 1,681	$ 8,656	$ 22,749	$ 48,960
	Material/Equipment Escalation at 5% annually	4.1%	on	$ 231,653	$ 424,675	$ 271,608	$ 278,217	$ 91,733	$ 620,964	$ 620,516	
	Material/Equipment Escalation Total:			$ 9,613	$ 17,622	$ 11,271	$ 11,545	$ 3,807	$ 25,768	$ 25,749	$ 105,374
	Subtotal:			**$ 348,996**	**$ 527,255**	**$ 435,981**	**$ 342,373**	**$ 137,741**	**$ 863,973**	**$ 1,217,237**	**$ 3,873,555**
	Subcontractor Overhead, Profit and Fee	35.0%	on	$ 69,799	$ 105,451	$ 87,196	$ 68,475	$ 27,548	$ 172,795	$ 243,447	
	Subcontractor Overhead, Profit and Fee Total:			$ 24,430	$ 36,908	$ 30,519	$ 23,966	$ 9,642	$ 60,478	$ 85,207	$ 271,149
	Subtotal:			**$ 373,426**	**$ 564,162**	**$ 466,499**	**$ 366,339**	**$ 147,383**	**$ 924,452**	**$ 1,302,444**	**$ 4,144,704**
	Prime Contractor Overhead	10.0%	on	$ 279,197	$ 421,804	$ 348,785	$ 273,898	$ 110,193	$ 691,179	$ 973,790	
	Prime Contractor Overhead Total:			$ 27,920	$ 42,180	$ 34,878	$ 27,390	$ 11,019	$ 69,118	$ 97,379	$ 309,884
	Subtotal:			**$ 401,346**	**$ 606,343**	**$ 501,378**	**$ 393,728**	**$ 158,402**	**$ 993,569**	**$ 1,399,823**	**$ 4,454,589**
	Prime Contractor Profit	10.0%	on	$ 307,117	$ 463,984	$ 383,663	$ 301,288	$ 121,212	$ 760,297	$ 1,071,169	
	Prime Contractor Profit:			$ 30,712	$ 46,398	$ 38,366	$ 30,129	$ 12,121	$ 76,030	$ 107,117	$ 340,873
	Subtotal:			**$ 432,057**	**$ 652,741**	**$ 539,744**	**$ 423,857**	**$ 170,523**	**$ 1,069,599**	**$ 1,506,939**	**$ 4,795,462**
	Prime Profit on Subcontracted Work	5.0%	on	$ 94,229	$ 142,359	$ 117,715	$ 92,441	$ 37,190	$ 233,273	$ 328,654	
	Prime Profit on Subcontracted Work Total:			$ 4,711	$ 7,118	$ 5,886	$ 4,622	$ 1,860	$ 11,664	$ 16,433	$ 52,293
	Subtotal:			**$ 436,769**	**$ 659,859**	**$ 545,630**	**$ 428,479**	**$ 172,383**	**$ 1,081,263**	**$ 1,523,372**	**$ 4,847,755**
	Bond and Insurance	3.0%		$ 13,103	$ 19,796	$ 16,369	$ 12,854	$ 5,171	$ 32,438	$ 45,701	$ 145,433
	Subtotal:			**$ 449,872**	**$ 679,655**	**$ 561,999**	**$ 441,334**	**$ 177,554**	**$ 1,113,701**	**$ 1,569,073**	**$ 4,993,187**
	Design Contingency	40.0%		$ 179,949	$ 271,862	$ 224,800	$ 176,533	$ 71,022	$ 445,480	$ 627,629	$ 1,997,275
	Subtotal:			**$ 629,821**	**$ 951,517**	**$ 786,798**	**$ 617,867**	**$ 248,576**	**$ 1,559,181**	**$ 2,196,703**	**$ 6,990,462**
	Total (rounded):			**$ 630,000**	**$ 960,000**	**$ 790,000**	**$ 620,000**	**$ 250,000**	**$ 1,560,000**	**$ 2,200,000**	**$ 7,000,000**

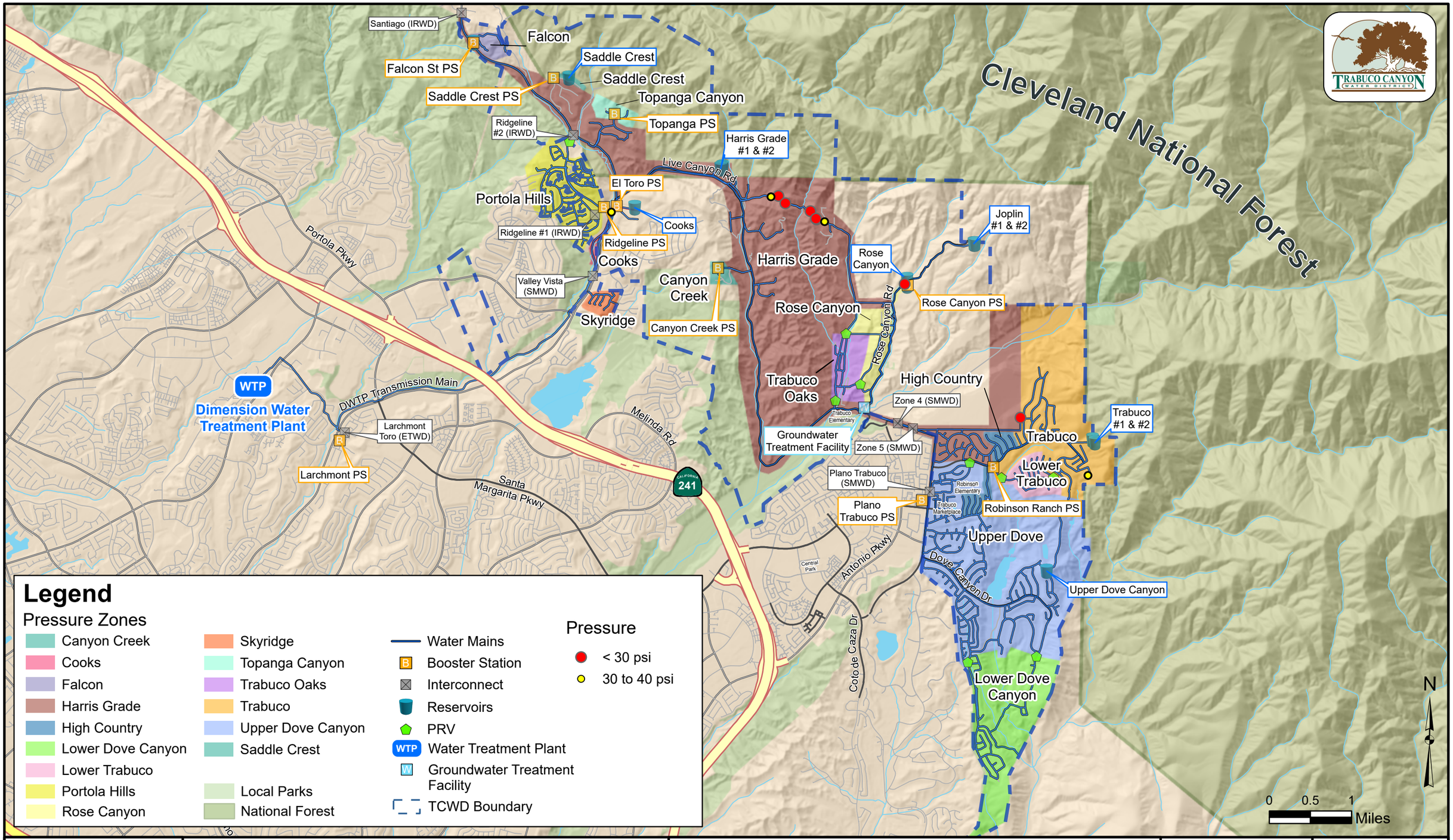
Location Code	CSI Div.	Description	Quantity	Unit	Notes	Labor Unit Cost	Equipment Unit Cost	Material Unit Cost	Total Unit Cost	Total Amount
						$0.00	$0.00		$ -	$ -
		Pumps and Aboveground Piping				$0.00	$0.00		$ -	$ -
Pump	Div 43	Furnish/install pump	2	ea	Assume 10 hp centrifugal	$5,651.11	$3,546.51	$15,000.00	$ 25,360	$ 50,720
Pump	Div 43	Furnish/install fire pump	1	ea	Assume 40 hp centrifual	$5,651.11	$3,546.51	$50,000.00	$ 63,073	$ 63,073
						$0.00	$0.00		$ -	$ -
Pump	Div 43	Testing	9	cd		$1,280.18	$0.00		$ 1,280	$ 11,522
						$0.00	$0.00		$ -	$ -
		Booster pumps				$0.00	$0.00		$ -	$ -
		Discharge piping				$0.00	$0.00		$ -	$ -
Pump	Div 40	4-inch diameter pipe	34	lf		$90.48	$0.00	$172.65	$ 277	$ 9,401
Pump	Div 40	90-elbow	1	ea		$294.06	$0.00	$243.00	$ 556	$ 556
Pump	Div 40	Tee	1	ea		$588.11	$0.00	$443.00	$ 1,065	$ 1,065
Pump	Div 40	Check valve	2	ea		$294.06	$0.00	$7,541.95	$ 8,421	$ 16,841
Pump	Div 40	Butterfly valve	4	ea		$294.06	$0.00	$904.95	$ 1,269	$ 5,077
Pump	Div 40	Cla-val	1	ea		$294.06	$0.00	$11,000.00	$ 12,147	$ 12,147
Pump	Div 40	Dismantling joint	3	ea		$294.06	$0.00	$1,231.83	$ 1,621	$ 4,864
Pump	Div 40	Supports	4	ea		$294.06	$0.00	$250.00	$ 563	$ 2,254
						$0.00	$0.00		$ -	$ -
		Fire pump				$0.00	$0.00		$ -	$ -
		Discharge piping				$0.00	$0.00		$ -	$ -
Pump	Div 40	10-inch diameter pipe	42	lf		$147.03	$0.00	$355.43	$ 530	$ 22,260
Pump	Div 40	90-elbow	2	ea		$336.07	$0.00	$975.00	$ 1,387	$ 2,773
Pump	Div 40	Reducer	4	ea		$336.07	$0.00	$975.00	$ 1,387	$ 5,547
Pump	Div 40	Tee	2	ea		$672.13	$0.00	$1,392.00	$ 2,172	$ 4,344
Pump	Div 40	Check valve	1	ea		$336.07	$0.00	$11,846.75	$ 13,101	$ 13,101
Pump	Div 40	Butterfly valve	3	ea		$336.07	$0.00	$2,347.95	$ 2,866	$ 8,598
Pump	Div 40	Dismantling joint	2	ea		$336.07	$0.00	$2,505.59	$ 3,036	$ 6,072
Pump	Div 40	Supports	4	ea		$294.06	$0.00	$750.00	$ 1,102	$ 4,409
						$0.00	$0.00		$ -	$ -
Pump	Div 40	Allow for miscellaneous small pipe	3	cd		$2,352.46	$0.00	$7,057.37	$ 9,957	$ 29,870
						$0.00	$0.00		$ -	$ -
Pump	Div 40	Testing	5	cd		$1,579.67	$0.00		$ 1,580	$ 7,898
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
		Pump Building				$0.00	$0.00		$ -	$ -
Bldg	Div 04	CMU building	1,008	sf		$0.00	$0.00	$325.00	$ 350	$ 352,989
						$0.00	$0.00		$ -	$ -
		Slab	1	ea		$0.00	$0.00		$ -	$ -
Bldg	Div 03	Erect/Strip Formwork	363	sf		$8.58	$0.00	$3.00	$ 12	$ 4,287
Bldg	Div 03	Place Rebar	9,993	lb		$0.88	$0.00	$1.03	$ 2.00	$ 19,944
Bldg	Div 03	Place Concrete	103	cy		$53.34	$2.34	$225.45	$ 299	$ 30,656
Bldg	Div 03	Concrete Finishing	1,371	sf		$1.34	$0.00		$ 1.34	$ 1,839
						$0.00	$0.00		$ -	$ -
Bldg	Div 31	Excavation	305	cy		$12.67	$13.26		$ 26	$ 7,919
Bldg	Div 31	Gravel bedding	56	cy	Assume 12-inches thick	$19.00	$16.11	$35.00	$ 73	$ 4,044
Bldg	Div 31	Backfill (reuse)	55	cy		$19.00	$16.11		$ 35	$ 1,916
Bldg	Div 31	Backfill (Import)	111	cy		$19.00	$16.11	$35.00	$ 73	$ 8,087
Bldg	Div 31	Disposal of soil	251	cy		$7.19	$5.19	$5.00	$ 18	$ 4,454
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -

Location Code	CSI Div.	Description	Quantity	Unit	Notes	Labor Unit Cost	Equipment Unit Cost	Material Unit Cost	Total Unit Cost	Total Amount
						$0.00	$0.00		$ -	$ -
		Yard Piping				$0.00	$0.00		$ -	$ -
Yard	Div 40	Furnish/install 12-inch diameter pipe	270	lf		$27.27	$14.39	$216.81	$ 275	$ 74,324
Yard	Div 40	45-elbow	2	ea		$251.10	$0.00	$1,071.00	$ 1,405	$ 2,810
Yard	Div 40	90-elbow	4	ea		$251.10	$0.00	$1,267.00	$ 1,616	$ 6,465
Yard	Div 40	Reducer	7	ea		$251.10	$0.00	$1,267.00	$ 1,616	$ 11,314
Yard	Div 40	Tee	8	ea		$502.20	$0.00	$2,021.00	$ 2,680	$ 21,439
Yard	Div 40	RFA	6	ea		$251.10	$0.00	$2,070.18	$ 2,482	$ 14,890
Yard	Div 40	Check valve	1	ea		$251.10	$0.00	$15,076.00	$ 16,495	$ 16,495
Yard	Div 40	Gate valve	3	ea		$251.10	$0.00	$6,174.95	$ 6,905	$ 20,714
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Excavation	319	cy		$38.00	$39.79		$ 78	$ 24,846
Yard	Div 40	Gravel base	46	cy		$38.00	$32.22	$35.00	$ 108	$ 4,925
Yard	Div 40	Backfill (reuse)	319	cy		$38.00	$32.22		$ 70	$ 22,427
Yard	Div 40	Disposal	0	cy		$7.19	$5.19	$5.00	$ 18	$ -
Yard	Div 40	Trench box	3	wk		$278.79	$189.34	$250.00	$ 738	$ 2,213
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Furnish/install 4-inch diameter pipe	105	lf		$14.35	$7.57	$101.93	$ 132	$ 13,834
Yard	Div 40	90-elbow	1	ea		$251.10	$0.00	$243.00	$ 513	$ 513
Yard	Div 40	RFA	3	ea		$251.10	$0.00	$611.55	$ 910	$ 2,730
Yard	Div 40	Gate valve	3	ea		$251.10	$0.00	$1,521.95	$ 1,891	$ 5,673
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Excavation	99	cy		$38.00	$39.79		$ 78	$ 7,694
Yard	Div 40	Gravel base	16	cy		$38.00	$32.22	$35.00	$ 108	$ 1,686
Yard	Div 40	Backfill (reuse)	99	cy		$38.00	$32.22		$ 70	$ 6,945
Yard	Div 40	Disposal	0	cy		$7.19	$5.19	$5.00	$ 18	$ -
Yard	Div 40	Trench box	1	wk		$278.79	$189.34	$250.00	$ 738	$ 738
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Furnish/install 4-inch diameter pipe	200	lf	Miscellaneous small pipe	$14.35	$7.57	$101.93	$ 132	$ 26,351
Yard	Div 40	90-elbow	3	ea		$251.10	$0.00	$243.00	$ 513	$ 1,539
Yard	Div 40	RFA	3	ea		$251.10	$0.00	$611.55	$ 910	$ 2,730
Yard	Div 40	Gate valve	3	ea		$251.10	$0.00	$1,521.95	$ 1,891	$ 5,673
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Excavation	181	cy		$38.00	$39.79		$ 78	$ 14,050
Yard	Div 40	Gravel base	29	cy		$38.00	$32.22	$35.00	$ 108	$ 3,078
Yard	Div 40	Backfill (reuse)	181	cy		$38.00	$32.22		$ 70	$ 12,682
Yard	Div 40	Disposal	0	cy		$7.19	$5.19	$5.00	$ 18	$ -
Yard	Div 40	Trench box	2	wk		$278.79	$189.34	$250.00	$ 738	$ 1,475
						$0.00	$0.00		$ -	$ -
Yard	Div 40	Testing	15	cd		$1,350.56	$0.00		$ 1,351	$ 20,258
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
		Site Work				$0.00	$0.00		$ -	$ -
Site	Div 26	Furnish/install hydropneumatic tank	1	ea	Assume 2000 gallons	$4,884.03	$3,546.51	$78,394.00	$ 92,900	$ 92,900
						$0.00	$0.00		$ -	$ -
Site	Div 26	Testing	5	cd		$1,579.67	$0.00		$ 1,580	$ 7,898
						$0.00	$0.00		$ -	$ -
		Slab	1	ea		$0.00	$0.00		$ -	$ -
Site	Div 03	Erect/Strip Formwork	88	sf		$8.58	$0.00	$3.00	$ 12	$ 1,039
Site	Div 03	Place Rebar	991	lb		$0.88	$0.00	$1.03	$ 2.00	$ 1,979
Site	Div 03	Place Concrete	8	cy		$53.34	$2.34	$225.45	$ 299	$ 2,433
Site	Div 03	Concrete Finishing	188	sf		$1.34	$0.00		$ 1.34	$ 252

Location Code	CSI Div.	Description	Quantity	Unit	Notes	Labor Unit Cost	Equipment Unit Cost	Material Unit Cost	Total Unit Cost	Total Amount
						$0.00	$0.00		$ -	$ -
Site	Div 31	Excavation	46	cy		$12.67	$13.26		$ 26	$ 1,188
Site	Div 31	Gravel bedding	9	cy	Assume 12-inches thick	$19.00	$16.11	$35.00	$ 73	$ 668
Site	Div 31	Backfill (reuse)	13	cy		$19.00	$16.11		$ 35	$ 460
Site	Div 31	Backfill (Import)	18	cy		$19.00	$16.11	$35.00	$ 73	$ 1,335
Site	Div 31	Disposal of soil	33	cy		$7.19	$5.19	$5.00	$ 18	$ 581
Site	Div 32	Allow for site finishing	1	ls	Allow at 15% of cost	$0.00	$0.00	$160,355.73	$ 172,783	$ 172,783
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
		Generator				$0.00	$0.00		$ -	$ -
Gen	Div 26	Furnish/install generator	1	ea	Assume 80kW	$12,370.86	$10,747.00	$60,000.00	$ 87,768	$ 87,768
						$0.00	$0.00		$ -	$ -
Gen	Div 26	Testing	5	cd		$1,178.84	$0.00		$ 1,179	$ 5,894
						$0.00	$0.00		$ -	$ -
		Slab	1	ea		$0.00	$0.00		$ -	$ -
Gen	Div 03	Erect/Strip Formwork	132	sf		$8.58	$0.00	$3.00	$ 12	$ 1,559
Gen	Div 03	Place Rebar	1,983	lb		$0.88	$0.00	$1.03	$ 2.00	$ 3,957
Gen	Div 03	Place Concrete	16	cy		$53.34	$2.34	$225.45	$ 299	$ 4,866
Gen	Div 03	Concrete Finishing	332	sf		$1.34	$0.00		$ 1.34	$ 445
						$0.00	$0.00		$ -	$ -
Gen	Div 31	Excavation	76	cy		$12.67	$13.26		$ 26	$ 1,981
Gen	Div 31	Gravel bedding	15	cy	Assume 12-inches thick	$19.00	$16.11	$35.00	$ 73	$ 1,113
Gen	Div 31	Backfill (reuse)	19	cy		$19.00	$16.11		$ 35	$ 663
Gen	Div 31	Backfill (Import)	31	cy		$19.00	$16.11	$35.00	$ 73	$ 2,225
Gen	Div 31	Disposal of soil	58	cy		$7.19	$5.19	$5.00	$ 18	$ 1,021
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
		Electrical and Controls				$0.00	$0.00		$ -	$ -
E/I&C	Div 26	Ductbanks	300	lf		$0.00	$0.00	$350.00	$ 377	$ 113,138
						$0.00	$0.00		$ -	$ -
E/I&C	Div 26	Utility transformer	1	ea	100kVA	$8,164.77	$7,093.02	$50,000.00	$ 69,133	$ 69,133
E/I&C	Div 26	Utility Meter	1	ea	200A	$4,082.38	$3,546.51	$25,000.00	$ 34,566	$ 34,566
E/I&C	Div 26	ATS	1	ea	200A	$875.61	$0.00	$10,000.00	$ 11,651	$ 11,651
E/I&C	Div 26	MCC	1	ea	200A	$12,370.86	$10,747.00	$50,000.00	$ 76,993	$ 76,993
E/I&C	Div 26	LP	1	ea		$3,502.43	$0.00	$7,500.00	$ 11,584	$ 11,584
E/I&C	Div 26	LP-TX	1	ea		$3,502.43	$0.00	$12,000.00	$ 16,432	$ 16,432
E/I&C	Div 26	PP	1	ea		$3,502.43	$0.00	$7,500.00	$ 11,584	$ 11,584
E/I&C	Div 26	PLC	1	ea		$3,502.43	$0.00	$50,000.00	$ 57,377	$ 57,377
						$0.00	$0.00		$ -	$ -
E/I&C	Div 26	Testing	20	cd		$1,178.84	$0.00		$ 1,179	$ 23,577
						$0.00	$0.00		$ -	$ -
		Pump building				$0.00	$0.00		$ -	$ -
E/I&C	Div 26	Ground rod and test well	4	ea		$875.61	$0.00	$150.00	$ 1,037	$ 4,149
E/I&C	Div 26	4/0	220	lf		$5.47	$0.00	$6.74	$ 13	$ 2,802
E/I&C	Div 26	Exothermic weld	11	ea		$218.90	$0.00	$610.00	$ 876	$ 9,638
						$0.00	$0.00		$ -	$ -
		Generator slab				$0.00	$0.00		$ -	$ -
E/I&C	Div 26	Ground rod and test well	4	ea		$875.61	$0.00	$150.00	$ 1,037	$ 4,149

Location Code	CSI Div.	Description	Quantity	Unit	Notes	Labor Unit Cost	Equipment Unit Cost	Material Unit Cost	Total Unit Cost	Total Amount
E/I&C	Div 26	4/0	85	lf		$5.47	$0.00	$6.74	$ 13	$ 1,082
E/I&C	Div 26	Exothermic weld	2	ea		$218.90	$0.00	$610.00	$ 876	$ 1,752
						$0.00	$0.00		$ -	$ -
E/I&C	Div 40P	Programming/integration	25	cd		$1,650.00	$0.00		$ 1,650	$ 41,250
						$0.00	$0.00		$ -	$ -
E/I&C	Div 40P	Miscellaneous instrumentation	1	ls	Allow at 2% of cost	$0.00	$0.00	$39,098.08	$ 42,128	$ 42,128
E/I&C	Div 26	Field wiring	1	ls	Allow at 8% of cost	$0.00	$0.00	$159,762.57	$ 172,144	$ 172,144
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
		Transmission Pipeline				$0.00	$0.00		$ -	$ -
Trans	Div 40	Furnish/Install 10-inch diameter pipe	4,500	lf	PVC	$13.56	$7.11	$34.78	$ 58	$ 261,666
Trans	Div 40	90-elbow	5	ea		$180.53	$94.67	$1,687.89	$ 2,094	$ 10,470
						$0.00	$0.00		$ -	$ -
Trans	Div 31	Excavation	4,634	cy		$12.67	$13.26		$ 26	$ 120,165
Trans	Div 31	Gravel Bedding	794	cy		$19.00	$16.11	$35.00	$ 73	$ 57,851
Trans	Div 31	Backfill (reuse)	4,634	cy		$19.00	$16.11		$ 35	$ 162,697
Trans	Div 31	Disposal of soil	0	cy		$7.19	$5.19	$5.00	$ 17	$ -
Trans	Div 31	Trench box	13	wk		$278.79	$189.34	$500.00	$ 1,007	$ 13,089
						$0.00	$0.00		$ -	$ -
Trans	Div 02	Sawcut	8,393	lf		$1.60	$1.30		$ 2.90	$ 24,304
Trans	Div 02	Remove/dispose of pavement	26,537	sf		$0.88	$0.35	$0.65	$ 1.87	$ 49,660
Trans	Div 32	Replacement pavement	912	tn		$11.34	$1.31	$110.40	$ 132	$ 120,045
						$0.00	$0.00		$ -	$ -
Trans	Div 40	Connections	1	ea		$2,888.54	$1,514.71	$8,665.61	$ 13,740	$ 13,740
Trans	Div 40	Utility relocations	1	ls		$45,000.00	$0.00		$ 45,000	$ 45,000
						$0.00	$0.00		$ -	$ -
Trans	Div 40	Flagger	65	cd	1 flagger per day	$192.00	$0.00		$ 192	$ 12,480
Trans	Div 40	Plastic barrels	2,160	ea	Every 5lf	$8.03	$1.23		$ 9.26	$ 19,995
Trans	Div 40	Flashing arrow board	13	wk		$0.00	$0.00		$ -	$ -
Trans	Div 40	Permanent/Temporary signage	1	ls		$18,056.25	$2,771.98		$ 20,828	$ 20,828
						$0.00	$0.00		$ -	$ -
Trans	Div 40	Testing	9	cd		$2,698.58	$532.72		$ 3,231	$ 29,082
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -
						$0.00	$0.00		$ -	$ -

Appendix B: 2022 Master Plan Results



Hazen	Trabuco Canyon Water District Master Plan	**Low Pressure Locations**	December 2022	Exhibit 6-1

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

ENGINEERING MATTERS

ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Dimension Water Treatment Plant Pipeline Rehabilitation Project
2. Other Projects

RECOMMENDED ACTION:

Committee to receive project status updates at the time of the Committee Meeting.

EXHIBIT(S):

None

CONTACTS (staff responsible): PALUDI/LAUSTEN

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

OPERATIONAL MATTERS
ITEM 5: WATER SYSTEM UPDATES

The following is a brief report of the water system through **October 2025**.

Projects and Repairs

Water Operations staff performed and/or completed the following tasks and projects:

1. Worked with contractor to repair 2" broken service saddle in Falcon Estates
2. Replaced pump motor on the valve truck
3. Worked with the Meter Department to replace curb stop on Canyon Ridge in Portola Hills
4. Recoated piping and equipment at Rose Canyon PS, Robinson Ranch PS and Harris Grade Reservoir
5. Rebuilt pilot system on the Altitude Valve at Harris Grade
6. Worked with OC Public Works to locate 2 main breaks on 6" transmission line at Joplin
7. Coated L Brackets that were installed to secure filter #4
8. Continued to work with T.E. Roberts on MTL repair.

Monthly Water System Operations Summary

The Monthly Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Water System Operations Summary

CONTACTS (staff responsible): PEREA/KESSLER

TRABUCO CANYON WATER DISTRICT

MONTHLY WATER SYSTEM OPERATIONS SUMMARY - 2025

SYSTEM PRODUCTION/SUPPLIES	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	*TOTAL*
Number of Days	31	28	31	30	31	30	31	31	30	31	30	31	*365*
Dimension WTP	8%	17%	25%	33%	42%	50%	58%	67%	75%	83%	92%	100%	
SAC Pipeline Meter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Backwash, AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Flushwater, AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
DWTP Effluent (1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Groundwater, AF													
Trabuco Creek GWTF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
U.S. Well AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Total Groundwater (2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Water Purchases, AF													
SMWD Treated Interconnection	21.0	8.9	7.0	31.0	28.4	39.4	35.1	54.8	55.7				281.3
IRWD Treated Interconnections	119.4	90.3	104.7	106.5	126.0	126.8	165.3	161.7	149.5				1,150.2
IRWD Irvine Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Total Purchases (3)	140.4	99.2	111.7	137.5	154.4	166.2	200.4	216.5	205.2				1,431.5
Total Supply													
Total Supply AF (1,2,3)	**140.4**	**99.2**	**111.7**	**137.5**	**154.4**	**166.2**	**200.4**	**216.5**	**205.2**				1,431.5
% Year - Peak Prod. - 2,449 AF (2018)	6%	10%	14%	20%	26%	33%	41%	50%	58%				58%
AF/Day	3.9	3.3	3.4	3.7	5.0	5.5	6.5	7.0	6.8				5.0
CFS/Day, Avg.	2.0	1.6	1.7	1.9	2.5	2.8	3.2	3.5	3.4				2.4
Reservoir Storage													
Monthly Average, MG	9.1	9.1	9.0	9.0	9.1	9.1	9.1	9.1	9.0				9.1
Monthly Average, AF	27.9	27.9	27.0	27.0	27.9	27.9	27.9	27.9	27.0				27.7
Days of Storage	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	3.0				3.8
SYSTEM DEMANDS													
District Operations, AF (1)													
Dimension WTP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
Robinson Ranch WWTP	0.040	0.040	0.040	0.080	0.040	0.080	0.040	0.040	0.040				0.440
Supplemental Domestic to RW Res.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
Subtotal	0.040	0.040	0.040	0.080	0.040	0.080	0.040	0.040	0.040				0.44
System Losses, AF (2)													
Flushing	2.30	3.00	2.30	2.30	2.30	2.30	2.30	2.30	1.50				20.60
Sewer Cleaning	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02				0.18
Line Breaks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
Subtotal	2.32	3.02	2.32	2.32	2.32	2.32	2.32	2.32	1.52				20.78
Zone Demands, AF (3)													
Topanga Canyon	2.9	Inop.	Inop.	3.0	3.0	3.0	3.1	3.2	3.0				21.20
Falcon Estates	0.40	0.2	0.4	0.7	0.7	0.8	0.9	0.9	0.8				5.78
Rose PRV/The Oaks	0.7	0.7	0.8	0.90	1.2	1.3	1.5	2.3	1.9				11.25
Canyon Creek	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3				2.20
Rose Pump Station	0.2	0.3	0.3	0.4	0.4	0.5	0.4	0.4	1.6				4.48
Robinson Ranch	34.5	19.4	20.0	35.7	42.9	54.0	64.8	66.3	51.6				389.2
Dove Canyon	61.7	45.4	49.1	55.4	64.2	64.9	76.6	77.5	74.6				569.4
Subtotal	100.6	66.2	70.8	96.3	112.6	124.2	147.6	151.0	152.0				1,021.3
Total System Demand (1,2,3)	**103.0**	**69.3**	**73.2**	**98.7**	**115.0**	**126.6**	**150.0**	**153.4**	**153.6**				1,042.5

TRABUCO CANYON WATER DISTRICT

MONTHLY WATER SYSTEM OPERATIONS SUMMARY - 2025

System Demands													
AF/Day	3.9	3.3	3.4	3.7	4.2	5.5	6.5	7.0	6.8				4.9
Daily Average, CFS	2.0	1.6	1.7	1.9	2.1	2.8	3.2	3.5	3.4				2.5
Other Water Deliveries/Purchases													
Ridgeline (DWTP Delivery)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
El Toro (Interconnection Purchase)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
Baker WTP (CSC Delivery)	98.6	89.7	90.2	103.7	68.0	88.9	77.6	62.5	65.5				744.7
Portola Hills (Wholesale Purchase)	10.0	7.5	8.2	7.8	9.1	10.6	10.5	13.2	12.2				89.1
Skyridge (Wholesale Purchase)	1.8	1.6	1.6	1.4	1.6	2.0	2.0	2.3	2.3				16.6
** Usage estimated*	*** Excludes Operational use, losses, and supplement to Recycled Water Reservoir (RW)*												

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

OPERATIONAL MATTERS
ITEM 6: WASTEWATER SYSTEM UPDATES

The following is a brief report of the wastewater system through **October 2025.**

Projects and Repairs

Wastewater Operations staff performed and/or completed the following tasks and projects:

1. Replaced a motor for the NEQ pump at the WWTP
2. Installed an emergency alarm system for sewer flows at Heritage Lift Station
3. Dove Creek soils removal to comply with Division of Safety of Dams (DSOD) requirements
4. Removed an equipment pad and repaired an airline for operations control at the WWTP
5. Removed 80' of discontinued 6" waste line at WWTP
6. Installed a new 8" diversion and valve to prep for a new NEQ pump install

Sewer System Management Plan (SSMP) Report

The purpose of the program is to communicate on a regular basis with the public on the development, implementation, and performance of TCWD's SSMP. Status updates on the work and type of work performed on the sewer system will be provided, including sewer line and manhole cleaning, system repairs, lift station cleaning, and updates from satellite facilities:

Sewer System Management Plan (SSMP) Monthly Update	
Total Sewer Line, Feet*	212,045
Total Sewer Line Cleaned (Ft) – Month	**9,564**
Total Sewer Line Cleaned (Ft) – Cleaning Cycle	204,404
Cleaning Cycle Period (Mos.) [Start date: 1/1/25]	10
Total Sewer Line Cleaned, %	**96%**
The Oaks at Trabuco – Pumping Frequency for the Month	14
O'Neill Park Sewer System Status	Ok
O'Neill Park Sewer System Repairs	None
SSMP Quarterly Report – *Next Quarterly Report*	4Q 2025
SSMP Program Audit – *Next Audit Report***	February 2026

**This amount includes the OC Parks-owned O'Neill Park sewer system the District is contracted to clean.*
***Periodic internal audits shall be conducted, at a minimum every two years, with reports kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and TCWD's compliance with the mandatory elements of TCWD's SSMP:*

Monthly Recycled Water System Operations Summary

The Monthly Recycled Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Recycled Water System Operations Summary

CONTACTS (staff responsible): PEREA/ULLOA

TRABUCO CANYON WATER DISTRICT | RECYCLED WATER SYSTEM SUMMARY - 2025

RECYCLED WATER SUPPLY	MAX	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
WWTP Reclaimed Water Production, AF	78.3	37.1	35.6	41.5	39.4	39.6	37.8	25.2	37.7	37.8				331.6	520.1
Reclaimed Reservoir Level, FT	1274.5	1,265.5	1,270.0	1,271.5	1,271.5	1,270.0	1,264.0	1,258.0	1,257.0	1,253.5				-	-
Reclaimed Reservoir Free Board, FT	25.5	9.0	4.5	3.0	3.0	4.5	10.5	16.5	17.5	21.0				-	-
Reclaimed Reservoir Storage, AF	145.5	94.6	118.8	127.7	127.7	118.8	87.5	61.6	58.0	45.2				-	-
Supplemental Domestic Water Added, AF	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	5.2

RECYCLED WATER SYSTEM DEMAND		8%	17%	25%	33%	42%	50%	58%	67%	75%	83%	92%	100%		
NON DOMESTIC WATER USER	ALLOC. AF	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	ALLOC. %
Dahlia Court	8.2	0.04	0.02	0.0	0.0	0.2	0.3	0.0	0.7	0.3				1.5	18.7%
Dove Canyon Golf Course	106.7	12.49	5.1	4.8	25.1	28.9	31.6	48.0	50.8	30.2				237.0	222.1%
Dove Canyon Master Association	279.3	10.92	3.6	3.6	11.2	16.4	17.2	25.9	32.8	13.8				135.4	48.5%
Robinson Ranch	80.2	1.41	0.4	0.8	2.8	2.7	2.9	3.2	5.4	3.5				23.2	28.9%
Trabuco Highlands	159.7	3.26	27.4	0.2	5.3	6.6	6.0	10.1	7.6	6.3				72.7	45.6%
City of RSM	0.1	0.00	0.02	0.00	0.02	0.02	0.02	0.02	0.02	0.02				0.14	107.7%
Construction Water	N/A	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00	N/A
Sakaida Nursery	1.1	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00	0.0%
SMWD	N/A	0.00	0.0	0.0	0.0	4.4	8.1	5.4	6.4	4.0				28.2	N/A
TY Nursery	17.9	0.00	0.00	0.0	0.01	2.6	3.7	6.8	4.6	0.0				17.9	99.9%
TOTAL, AF	**653.2**	**28.1**	**36.5**	**9.4**	**44.3**	**61.9**	**69.8**	**99.5**	**108.4**	**58.2**				**516.1**	**79.0%**
PERCENTAGE OF NDW ALLOCATION/YEAR		**4.3%**	**9.9%**	**11.3%**	**18.1%**	**27.6%**	**38.3%**	**53.5%**	**70.1%**	**79.0%**					
TOTAL ANNUAL AVG. NDW AVAILABLE**	**774.36**														

URBAN RUNOFF CAPTURE AND REUSE															
DISTRICT FACILITY		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
Shadow Rock Detention Basin Production		0.00	10.19	8.18	0.00	0.00	0.00	0.60	0.46	0.54				19.97	1.6
Dove | Tick Creek Production*	*Dry Season*	5.5	5.3	5.8	0.0	0.0	0.0	3.4	3.6	2.7				26.4	45.0
	TCWD Portion	5.5	5.3	5.8	0.0	0.0	0.0	1.7	1.8	1.4				21.5	-
	SMWD Portion	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.8	1.4				4.9	-
Dove Lake Water Pumped		0.0	0.0	0.0	0.0	0.0	0.0	45.1	53.0	18.8				116.9	190.1
Dove Lake Free Board, Ft		10.3	3.2	0.0	0.0	0.0	0.0	4.0	7.5	8.6				-	-
Dove Lake Storage, AF		131.2	309.0	331.0	331.0	331.0	331.0	294.2	210.0	156.4				-	-
Total Rainfall, In.		0.9	2.4	5.2	0.2	0.5	0.3	0.0	0.0	0.2				9.7	16.2

***** Based on 5-Year Average Reclaimed Water Reservoir Base Supply & Recycled Water Production***

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | NOVEMBER 5, 2025

OPERATIONAL MATTERS
ITEM 7: MAINTENANCE DEPARTMENT UPDATES

The following is a brief report of work completed by Maintenance staff through **October 2025.**

Projects and Repairs

Maintenance staff performed and/or completed the following tasks and projects:

Water Operations

1. Saddle Crest generator PM's, prep for emergency standby

Wastewater Operations

1. Received new Sutorbilt blower for WWTP
2. SBR dry pit piping cleanup/removal with Waste Ops
3. Assist Waste Ops on surge tank removal

District Fleet Upgrades & Other Projects

1. Prep truck #14 for 200-gallon water tank system
2. Order new 20' storage container
3. Gen and ATS checks
4. Replace Vactor hos reel and guide brackets
5. OBD II clean air inspection on F650 Dump Truck #27
6. Replace broken park brake lever on truck #26
7. Ford recall repairs on #7 and #19
8. Prep all new small portable gas generators
9. Rebuilt carb on MULE

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

None

CONTACTS (staff responsible): PEREA/STROUD

REGULATORY AND OTHER MATTERS

ITEM 8: OTHER MATTERS/REPORTS

Other Matters/Reports from the General Manager and/or District staff may be provided at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Hear Other Matters/Reports that may have arisen after the posting of the agenda.

EXHIBITS

None

CONTACTS (staff responsible): PALUDI/PEREA