

**TWAIN HARTE COMMUNITY SERVICES DISTRICT
Water & Sewer Committee Meeting**

Chair: *Eileen Mannix*

Co-Chair: *Richard Knudson*

**VIDEO TELECONFERENCE
January 6, 2021 9:30 a.m.**

IMPORTANT NOTICE:

To help slow the spread of COVID-19, the District offices are closed to the public. Under the Governor's Executive Order N-25-20, this meeting will be held remotely by teleconference using Zoom:

- Videoconference Link: <https://us02web.zoom.us/j/86711619153>
- Meeting ID: 867 1161 9153
- Telephone: (669) 900-6833

ANYONE CAN PARTICIPATE IN THIS MEETING: see details at the end of this agenda.

AGENDA

1. **Operations report.**
2. **Discuss the water system hydraulic model and initial conclusions related to fire flows and potential system modifications.**
3. **Discuss results of the surface water treatment plant condition assessment.**
4. **Discuss proposed scope of the Supervisory Control and Data Acquisition (SCADA) system upgrade and expansion project.**
5. **Review draft Fiscal Year 2020-21 Water Fund mid-year budget adjustment.**
6. **Review draft Fiscal Year 2020-21 Sewer Fund mid-year budget adjustment.**
7. **Adjourn.**

HOW TO OBSERVE THIS MEETING:

The public can observe and participate in a meeting as follows:

- **Computer:** Join the videoconference by clicking the videoconference link located at the top of this agenda or on our website. You may be prompted to enter your name and email. Your email will remain private and you may enter “anonymous” for your name.
- **Smart Phone/Tablet:** Join the videoconference by clicking the videoconference link located at the top of this agenda OR log in through the Zoom mobile app and enter the Meeting ID# and Password found at the top of this agenda. You may be prompted to enter your name and email. Your email will remain private and you may enter “anonymous” for your name.
- **Telephone:** Listen to the meeting by calling Zoom at (4669) 900-6833. Enter the Meeting ID# listed at the top of this agenda, followed by the pound (#) key.

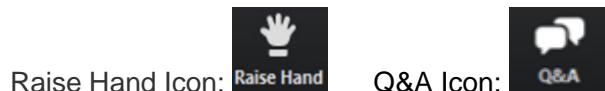
* NOTE: your personal video will be disabled and your microphone will be automatically muted.

FOR MORE DETAILED INSTRUCTIONS, CLICK [HERE](#)

HOW TO SUBMIT PUBLIC COMMENTS:

The public will have an opportunity to comment before and after the meeting as follows:

- **Before the Meeting:** If you cannot attend the meeting, you may:
 - Email comments to ksilva@twainhartecsd.com, write “Public Comment” in the subject line. In the body of the email, include the agenda item number and title, as well as your comments.
 - Mail comments to THCS Board Secretary: P.O. Box 649, Twain Harte, CA 95383
- **During the Meeting:** The public will have opportunity to provide comment before and after the meeting as follows:
 - Computer/Tablet/Smartphone: Click the “Raise Hand” icon and the host will unmute your audio when it is time to receive public comment. If you would rather make a comment in writing, you may click on the “Q&A” icon and type your comment. You may need to tap your screen or click on “View Participants” to make icons visible.



- Telephone: The host will provide a time during each public comment period where telephone participants will be unmuted and enabled to share comments.

* NOTE: If you wish to speak on an item on the agenda, you are welcome to do so during consideration of the agenda item itself. If you wish to speak on a matter that does not appear on the agenda, you may do so during the Public Comment period. Persons speaking during the Public Comment will be limited to five minutes, or depending on the number of persons wishing to speak, it may be reduced to allow all members of the public the opportunity to address the Board. Except as otherwise provided by law, no action or discussion shall be taken/conducted on any item not appearing on the agenda. Public comments must be addressed to the board as a whole through the President. Comments to individuals or staff are not permitted.

ACCESSIBILITY:

Board meetings are accessible to people with disabilities. In compliance with the Americans with Disabilities Act, those requiring accommodations for this meeting should notify the District office 48 hours prior to the meeting at (209) 586-3172.

WRITTEN MEETING MATERIALS:

If written materials relating to items on this Agenda are distributed to Board members prior to the meeting, such materials will be made available for public inspection on the District's website:
www.twainhartecsd.com

Twain Harte Community Services District Field Operations Report December 2020

Water

Service Orders: 12 consisting of leak checks, data logs, register replacements

Projects/ Field Operations Update:

- *1 service line leak was repaired.*

Sewer

	<i>Previous month</i>	<i>Year to Date Calendar</i>
<i>Lines Cleaned:</i>	<i>0 Ft</i>	<i>10,000 Ft</i>
<i>Lines Videoed:</i>	<i>0 FT</i>	<i>50 FT</i>

Service Orders: 3 consisting of customer lateral backups.

Projects/ Field Operations:

- *Degreaser treatments were applied at all 3 lift stations.*

Park and Recreation

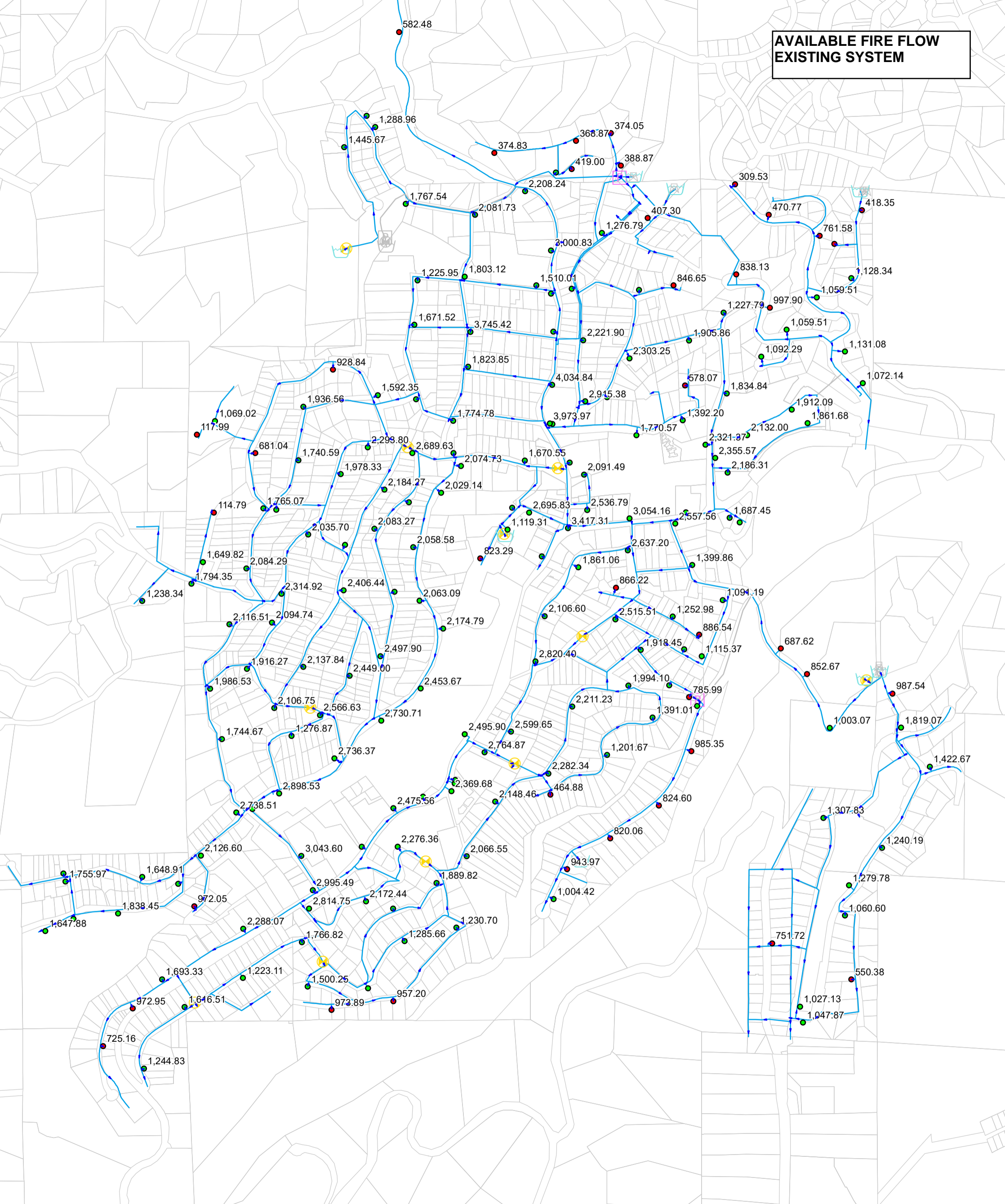
Projects/ Field Operations Update:

- *Preparations for the rain collection tank and plumbing are ongoing, weather permitting.*

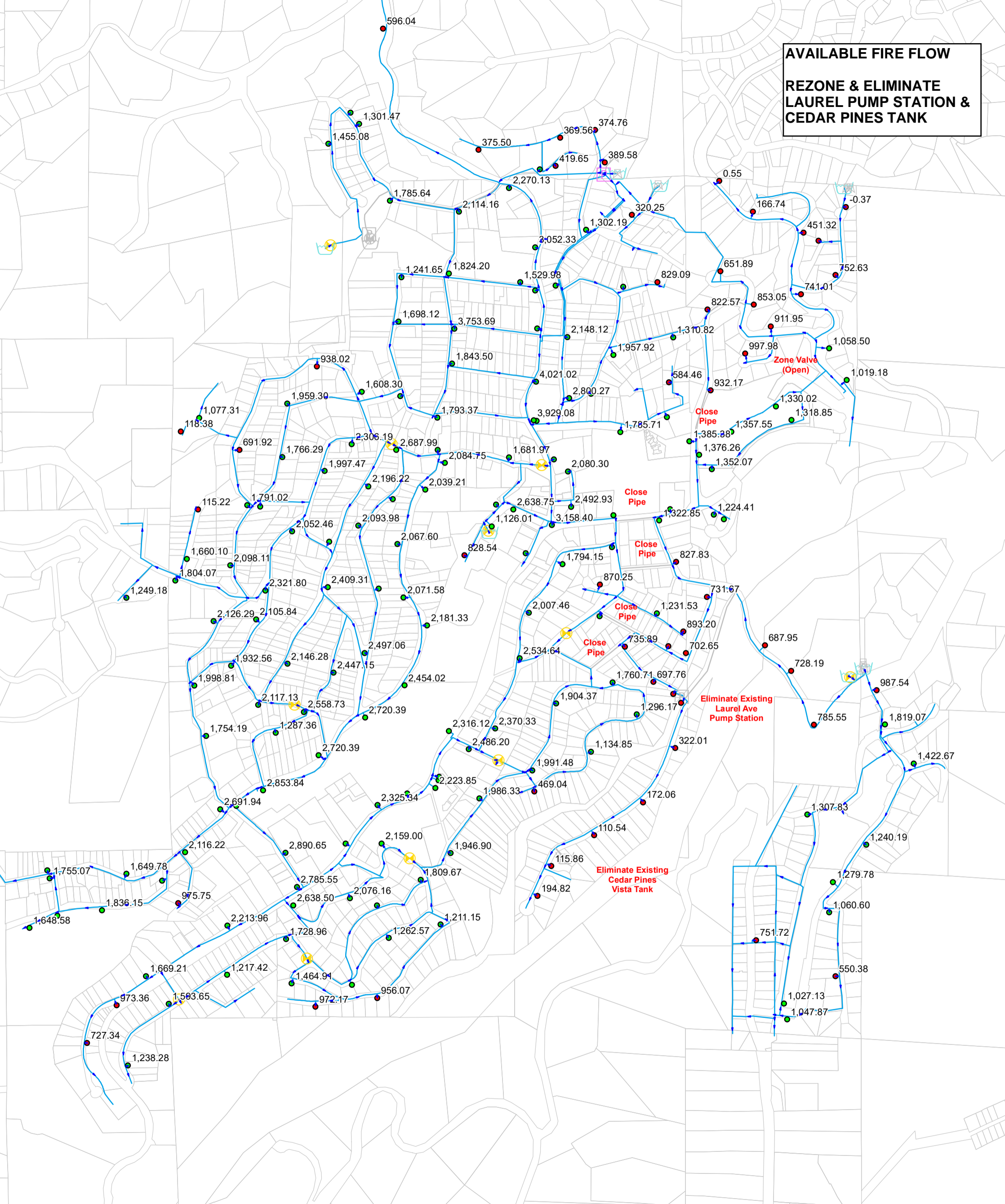
Year: 2020 THCSD Operations Manager Monthly Report

Month	*Treatment Plant (Gal)	Well #1 (Gal)	Well #2 (Gal)	Well #3 (Gal)	**Total Recycled (Gal)	***Total Production (Gal)	2013 Total Production (Gal)	Percentage Conserved (%)	Rain (inches)	Snow (inches)
Jan	1,663,959	1,156,516	2,010,038	0	261,063	4,830,513	8,304,262	41.83%	0.72	7
Feb	1,506,960	1,129,663	2,019,731	0	177,163	4,656,354	5,836,362	20.22%	0.08	Trace
Mar	1,019,292	1,188,431	2,177,329	0	172,090	4,385,052	5,776,198	24.08%	7.32	8.4
Apr	2,487,376	1,198,525	1,359,793	0	256,516	5,045,694	6,737,931	25.12%	5.23	7
May	5,474,411	1,238,596	0	0	466,108	6,713,007	9,624,851	30.25%	2.98	0
Jun	6,854,002	1,176,488	0	44,931	425,706	8,030,490	11,912,958	32.59%	0.12	0
Jul	7,067,435	1,192,783	1,023,102	678,717	490,986	9,283,320	14,740,484	37.02%	0	0
Aug	5,764,461	1,211,516	2,094,991	201,129	415,216	9,070,968	14,605,710	37.89%	0.03	0
Sep	3,649,280	1,083,284	2,099,597	1,128,493	401,989	6,832,161	10,891,827	37.27%	0.08	0
Oct	5,884,043	906,508	2,145,321	1,193,499	414,873	8,935,872	9,867,000	9.44%	0	0
Nov	1,062,749	1,035,499	1,659,367	1,051,621	102,685	3,757,615	6,638,895	43.40%	1.57	Trace
Dec	1,713,392	1,193,840	2,134,689	1,151,357	194,606	5,041,921	7,410,084	31.96%	3.21	Trace
Total	44,147,360	13,711,649	18,723,958	5,449,747	3,779,001	76,582,967	112,346,562	31.83%	21.34	22.4

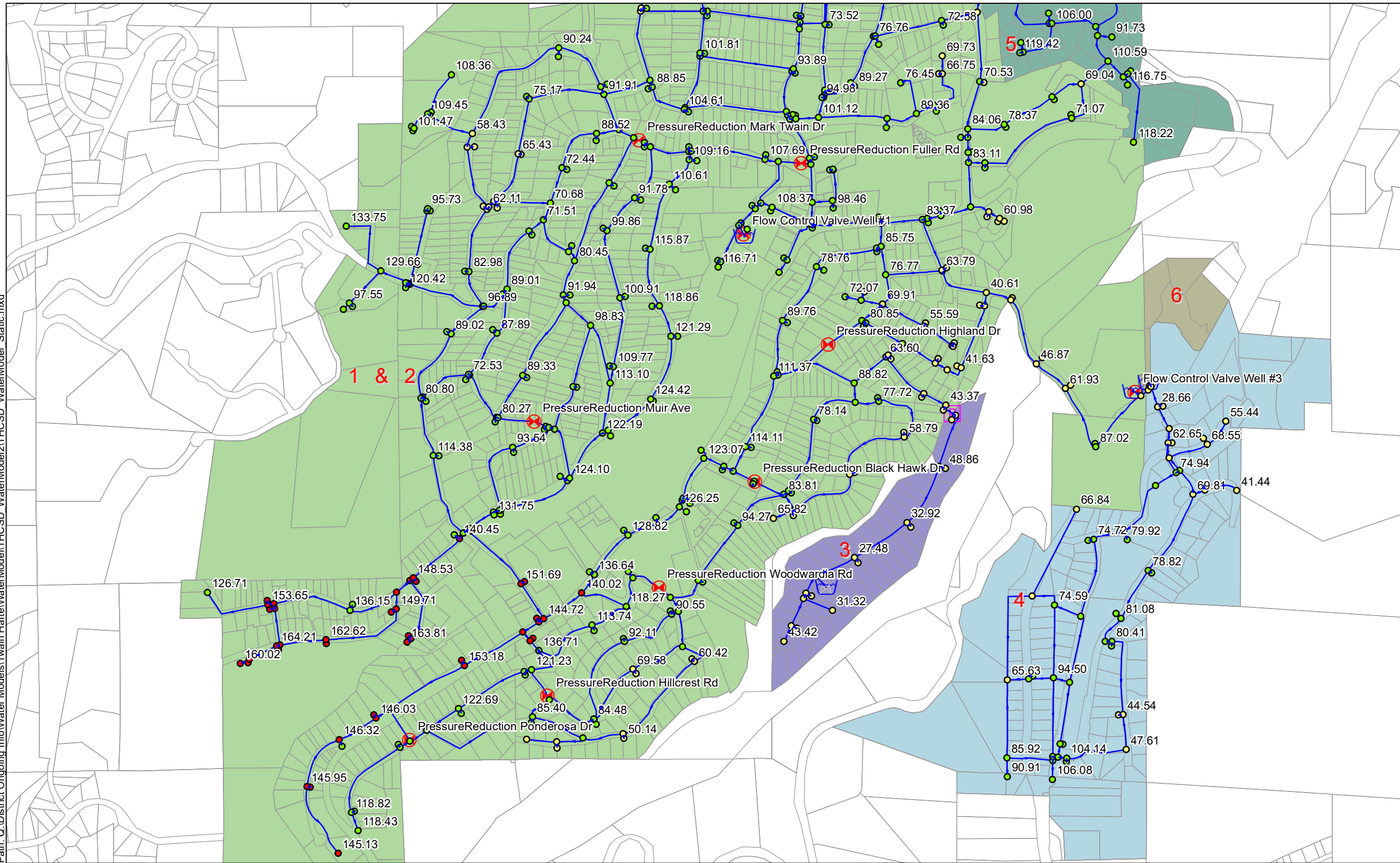
**AVAILABLE FIRE FLOW
EXISTING SYSTEM**



AVAILABLE FIRE FLOW
REZONE & ELIMINATE
LAUREL PUMP STATION &
CEDAR PINES TANK



Path: Q:\District Ongoing Info\Water Models\Twain Harte\WaterModel\THCSD WaterModel2\THCSD WaterModel Static.mxd



Source:

Legend

Junction

PRESSURE

- less than 70.00
- 70.00 ~ 140.00
- 140.00 ~ 164.65

Pressure_Zones

<all other values>

PZ_Name

- 1 & 2
- 3
- 4
- 5
- 6



Kennedy/Jenks Consultants

TWAIN HARTE COMMUNITY SERVICES DISTRICT
 WATER DISTRIBUTION SYSTEM
 HYDRAULIC MODEL

**ZONE 1 & 2
 PRV ANALYSIS
 PEAK HOUR DEMAND**

1870003

SCENARIO 1

FIGURE 2

18 December 2020

Technical Memorandum

To: Mr. Tom Trott, General Manager, Twain Harte Community Services District
From: Spencer Archer, P.E., Marie Fawcett, P.E., and Dana Strahan, Kennedy Jenks
Reviewed By: Doug Henderson, P.E., Kennedy Jenks
Subject: Twain Harte Water Treatment Plant Condition Assessment
K/J 1870003*04

1.0 Introduction

Kennedy Jenks (KJ) was contracted by the Twain Harte Community Services District (THCSD) to perform a high-level condition assessment of the Twain Harte Water Treatment Plant (WTP) and its major equipment.

This technical memorandum documents the findings of the condition assessment, including:

- General condition assessment of major components of the treatment plant and estimates on remaining useful life;
- Identification the WTP's vulnerabilities;
- A brief evaluation of technology alternatives; and
- General recommendations for WTP component and technology upgrades, and opportunities for operational improvement.

2.0 Condition Assessment

The following is a brief overview of the methodology implemented for the condition assessment.

1. Background Information Review: KJ reviewed available WTP as-built drawings and background information. KJ developed a process flow schematic of the WTP (included as Attachment A).
2. Hazard Review Workshop: KJ held a hazard review workshop with District staff on November 3, 2020 to discuss risks associated with equipment failures and consequences. The workshop used a checklist to promote a discussion about risks and consequences and mitigations. The Hazard Review Identification Table which summarizes the workshop is included as Attachment B.

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3. Facility Walkthrough: KJ performed a walkthrough of the WTP with District staff on November 5, 2020. A summary of the observations and recommended technology/operational improvements by area is included as Attachment C.

3.0 General Condition Assessment and Remaining Useful Life

The following table summarizes the major components of the WTP, general condition, and provides estimates on remaining useful life. Majority of the WTP was built in the 1970's and original equipment has typically survived its useful life; however, maintenance and replacement can potentially extend useful life of certain items particularly non-rotating or electrified components. Based on a high-level visual assessment, it appears the overall WTP is in good service condition and can meet water quality performance standards for many years.

Component	General Condition	Estimated Remaining Useful Life ¹
Debris Separators	Coatings appear to be in good shape and described as functional	Based on current appearance, 10+ years with routine maintenance (e.g., coating)
12.5% Sodium Hypochlorite Storage and Feed System	Storage tank and feed system appears to be functioning as required. Leaks observed at pumps and storage tank. Schedule 40 PVC pipes observed to be sagging. Corrosion noted at injection point.	Exceeded; replacement recommended to eliminate Schedule 40 PVC. Recommend placing chemical systems on regular maintenance plan to replace when useful life is reached.
Coagulant Storage and Feed System	Storage tank and feed system appears to be functioning as required.	Exceeded; replacement recommended to eliminate Schedule 40 PVC. Recommend placing chemical systems on regular maintenance plan to replace when useful life is reached.
Clarifier	Described as functional; process is not being operated as designed (designed as solids contact upflow clarifier), but instead as a conventional sedimentation which results in overflow loading rate being exceeded.	Based on current appearance, 10+ years with routine maintenance (e.g., coating)

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Pressure Filter	Described as functional; exterior coating requires maintenance; Schedule 80 Pipes should be replaced immediately	Based on current appearance, 10+ years with routine maintenance (e.g., coating) on steel structure
Orthophosphate Storage and Feed System	Described as functional	May be exceeded. Recommend placing chemical systems on regular maintenance plan to replace when useful life is reached.
Million Gallon Storage Tanks	Described as functional; one tank recently refurbished and second tank is schedule to be refurbished	Based on current routine maintenance inspections, 10+ years with routine maintenance (e.g., coating)
Sludge Tank	Described as functional	Based on current routine maintenance inspections, 10+ years with routine maintenance (e.g., coating)
Reclaimed Basin	Described as functional	Based on current routine maintenance inspections, 10+ years with routine maintenance
Motor Control Center (MCC)	Described as functional	Exceeded
Supervisory Control and Data Acquisition (SCADA) System	Described as functional	N/A – SCADA system upgrades planned in 2021

¹ A more detailed evaluation is required to estimate the useful remaining life of WTP components beyond 10 years.

Refer to Attachment C for further details.

4.0 Vulnerabilities

Based on the condition assessment, KJ identified the following vulnerabilities.

- The MCC has exceeded its service life and could fail. Evaluation and upgrades are recommended so that shutdowns can be planned and scheduled to minimize potential for WTP failures/upsets.

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- A cross connection hazard was identified inside the WTP building at the filter surface wash piping. A backflow prevention device rated for the appropriate level of protection should be installed.
- The pressure filter represents a single point of failure for the WTP. Maintenance and improvements are recommended to extend the life of this asset.
 - Schedule 80 PVC pipes are exposed to sunlight (UV) and may fail. Replace with metallic pipe.
- Chemical feed systems and areas appear to have reached the ends of their service life.
 - Risk of a drinking water regulation violation if disinfection feed is lost at post-chlorination pumps was discussed with operators.
 - Upgrades to chemical feed systems and monitoring during future SCADA upgrades are recommended.
 - Evaluate improvements to mitigate chemical exposure to operators and risk of chemical release.
- Maintain seasonal freeze protection to minimize potential for WTP shutdowns and upsets during cold weather.
- Loss of institutional operator knowledge represents a risk to WTP operations and maintenance (O&M). Quality/updated O&M Manuals, Training Program, as-built drawings, and Standard Operating Procedures (SOPs) can mitigate risks associated with loss of institutional knowledge from operator turnover.
- The condition of underground pipes was not evaluated and represents an unknown risk.

KJ notes that this appears to be a fully depreciated facility in terms of its capital investment. Portions of the WTP are obsolete and difficult to maintain. Portions do have remaining useful life with diminishing reliability. The District is proactively seeking to understand potential replacement costs for long term financial planning and improved WTP reliability.

Refer to Attachment C for additional details.

5.0 Technology Alternatives

KJ identified two technology alternatives to improve operational performance of the plant.

1. Seasonal Mixing and Coagulation Improvements: Operations staff report seasonal challenges with mixing and primary coagulation process during cold weather. Caustic soda (or similar) addition to increase alkalinity could be evaluated to improve performance of the coagulant. KJ recommends adding a bypass with static mixer at the existing flash mixer or install an adequate mechanical mixer to address mixing needs during low flows.

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- Clarification Alternatives: The existing upflow solids contact clarifier is undersized and not an optimal process for the source waters being treated. A high-rate, skid-type clarifier, such as Veolia's Actiflo system, could be used to optimize the clarification process. The high-rate clarifiers have a relatively small footprint but require a significant investment. This upgrade is likely not critical since the District does not see significant challenges meeting water quality objectives as currently operated.

6.0 Recommended Upgrades

This section includes recommendations for WTP upgrades, health and safety improvements, and operational opportunities.

6.1 WTP Upgrades

A prioritized list of major recommended upgrades based on the high-level condition assessment is included as Attachment D. An estimate of the cost and timing based on similar projects are provided for planning purposes. Further investigations and designs are needed to determine the actual extent of work required. KJ understands that the District is planning to upgrade the existing SCADA system in 2021.

Priority Item/Ranking	Estimated Cost	Estimated Project Duration	Recommended Timeframe to Complete
1. MCC Upgrades	\$6k \$40-100k	2 days 2-3 months	ASAP
2. Chemical Feed Systems Upgrades	TBD – further investigation and scoping required	TBD – further investigation and scoping required	ASAP
3. Filter Upgrades	\$5-15k	1-2 months	ASAP
4. Instrumentation SCADA Upgrades ²	N/A – Planned	N/A – Planned	N/A – Planned

6.2 Health and Safety Improvements

The following opportunities for improving safe operations were identified:

- Install water heater(s) to provide tepid water to the safety shower and eyewash stations.

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- Maintain clear access to electrical panels, fire extinguishers, and safety showers and eyewash stations. Suggest delineating areas to be kept clear by placing paint or tape on floor.
- Provide signage requiring appropriate personal protected equipment (PPE) in the chemical storage areas.
- Provide Confined Space Signage where needed.
- Mount fire extinguishers to prevent corrosion of bottoms.
- Eliminate tripping hazards. The sump discharge is routed across the floor in front of MCC.
- Verify compliance with Hazard Communication Standards (e.g., provide a Right-to-Know station with current Chemical Safety Data Sheets).
- Verify proper lock out tag out (LOTO) procedures and training are in place.
- Consider conducting a safety inspection to verify compliance with current regulations and further opportunities for improvement.
- Verify proper signage and installation of first aid kits.

6.3 Operational Opportunities

The following opportunities for improving O&M procedures were identified:

- Document institutional knowledge and develop as-built drawings.
- Review and update O&M Program routinely, including O&M Manuals, Preventative Maintenance schedules, as-built drawings, SOPs, Permits, notification procedures, emergency procedures, and Operator Training Program.
- Implement Management of Change Procedure to ensure changes are properly reviewed, approved, and documented.
- Consider a computerized maintenance management system for asset management.
- Identify and provide training on Protective System Devices (i.e., combination air/vacuum relief) to increase operator awareness and provide competency in maintaining these critical devices.
- Label valves with identification; label pipelines with flow direction and contents. This can be done using stickers or stencils and paint.
- Conduct jar tests on a regular basis to confirm plant coagulant/chemical feed optimization. Recommend use of AWWA M-37 Manual for Operational Control of Coagulation and Filtration.
- Remove obsolete equipment and piping to simplify the WTP.

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- Emergency preparedness improvement. Recommend FEMA Incident Command System (ICS) training.
- Investigate vertical pipe penetrating through floor at sludge pumps. This pipe could be a residual of the original sludge recirculation line that is no longer used for the Clarifier.

7.0 Limitations

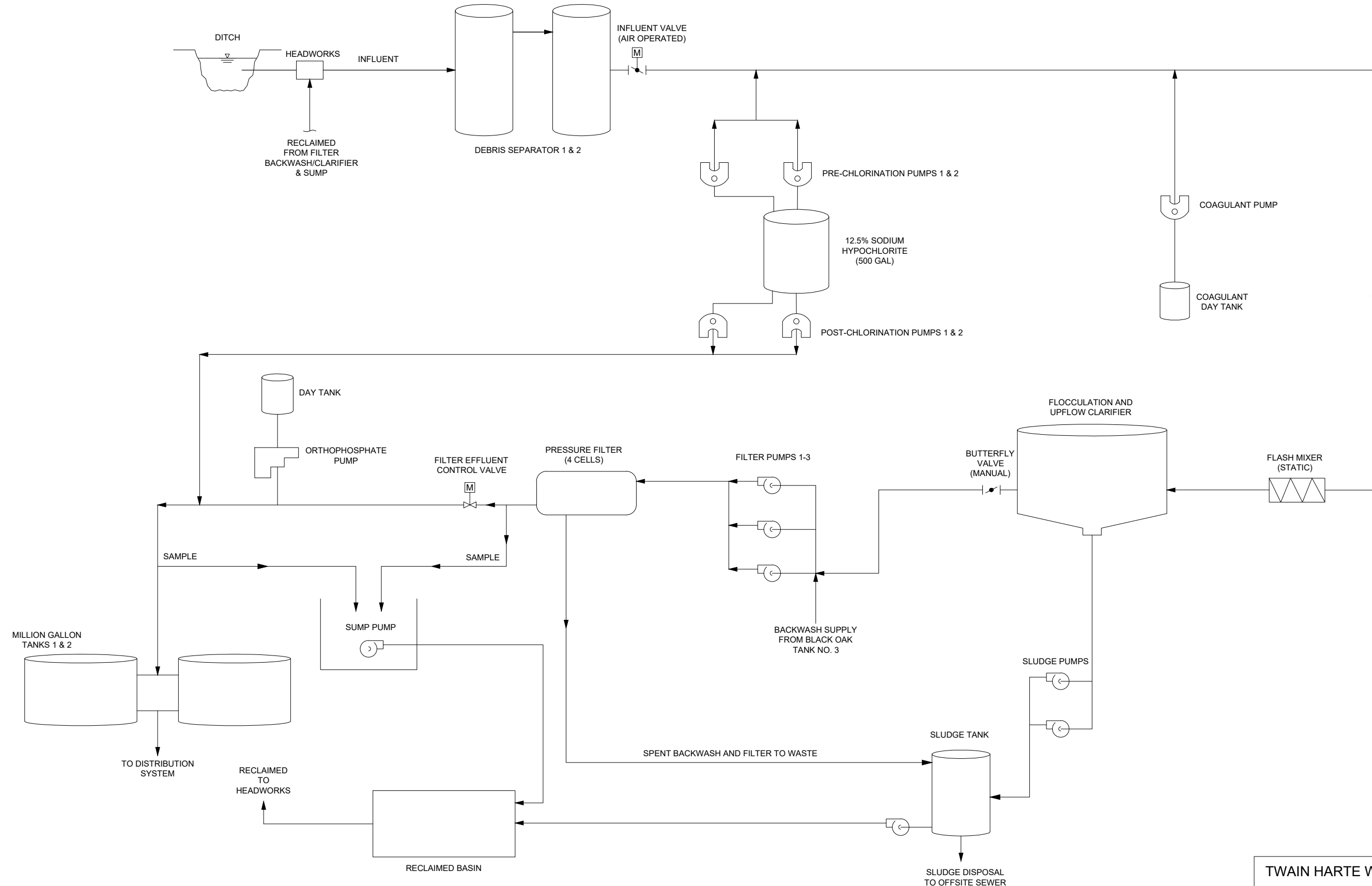
The recommendations identified in this Technical Memo are based on the high-level visual assessment conducted by KJ during the facility walkthrough. This assessment was limited to exterior visual inspections and information provided by operators. No testing was performed, electrical panels were not opened or inspected, piping was not removed or inspected, and no maintenance records were provided or reviewed.

Attachments

- A. Process Flow Schematic
- B. Hazard Review Identification Table
- C. Condition Assessment Summary
- D. Recommended Water Treatment Plant Upgrades

Attachment A

Process Flow Schematic



Kennedy/Jenks Consultants
 TWAIN HARTE WATER TREATMENT PLANT
 PROCESS FLOW SCHEMATIC
 1870003.04
 ATTACHMENT A

Attachment B

Hazard Review Identification Table

Attachment B: Hazard Review Identification Table

Project Name: Twain Harte WTP				
Project Description: Condition Assessment				
Project Manager (Authorizer): Marie Fawcett		MoC Initiator: N/A	MoC Reviewer: N/A	MoC Verifier: N/A
Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
Process Failures How could the following occur: <ul style="list-style-type: none"> • Injury • Fire • Explosion • Loss of Containment • Release of flammable/toxic chemicals/vapors/liquids 	Wild land fire	Damage to WTP	Yard is paved which provides defensible space; two hydrants on site; Fire department tests hydrant	None
	Chemical tank failure	Release to environment	Sodium hypochlorite is within containment	None
	Ortho tank failure	Ortho release to environment		Evaluate secondary containment for ortho
Contingency Plans What happens in the event of: <ul style="list-style-type: none"> • A leak of flammable or toxic material? • A fire? • An injury to personnel? • An incident? • Is required safety equipment available at accessible location? • Are all personnel trained for the task and in the use of all safety equipment? • Has appropriate PPE been identified? 			Fire extinguishers available and tested/inspected annually	None
			Disaster response plan established and updated periodically	None
			Fire Department oversees an incident and is familiar with the WTP	Consider Incident Command System (ICS) 100/200 classes
			Chlorine and turbidity automatically shut down plant (pumps shutoff, and valve from filter closes)	None

Attachment B: Hazard Review Identification Table

Project Name: Twain Harte WTP				
Project Description: Condition Assessment				
Project Manager (Authorizer): Marie Fawcett		MoC Initiator: N/A	MoC Reviewer: N/A	MoC Verifier: N/A
Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
<p>Service Materials or chemicals to be processed</p> <ul style="list-style-type: none"> • What are the normal materials that can be encountered? <ul style="list-style-type: none"> ○ PGE owns ditch ○ Two backup reservoirs and three wells ○ Wells are blended routinely ○ Well head treatment (except polymer) ○ Well 1 is aggressive (corrosive) ○ Well 2 has Mn and radiological concerns ○ Well 3 is ok • What impurities or wrong materials could enter the system? • What reactions could occur? e.g. if material mixes with other chemicals? • Is there a possibility that this chemical/material can leak and impact our offsite neighbors or other third parties? 	<p>Radiological contaminants in Well 2</p> <p>Trail along open ditch; someone could dump chemical; cattle entry; fuel/oil from road crossings; nearby septic systems; dead deer</p>	<p>Radiological exceeds MCL</p> <p>Upset WTP operations</p>	<p>Monitoring</p> <p>Ditch is partially lined with concrete; ditch operators maintain ditch; patrolled regularly; debris screens installed to screen and cleaned weekly; watershed sanitary surveys conducted by TUD for same watershed;</p>	<p>Follow up sampling to determine speciation; looking at filtration options</p> <p>None</p>

Attachment B: Hazard Review Identification Table

Project Name: Twain Harte WTP				
Project Description: Condition Assessment				
Project Manager (Authorizer): Marie Fawcett		MoC Initiator: N/A	MoC Reviewer: N/A	MoC Verifier: N/A
Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
<p>Temperature Operating max/min temperatures – 20-26C in summer; 1-12C in winter</p> <ul style="list-style-type: none"> • What is the max/min operating temperature for this service? • What is the normal operating temperature? • Can an incident occur that could result in exceeding the max/min design temperatures? <ul style="list-style-type: none"> ○ WTP does not perform well below 6C ○ Static mixer 	<p>Poor mixing due to cold water</p> <p>High turbidity in influent during spring flush</p> <p>Low alkalinity</p> <p>Seasonal primary coagulation based on flashiness of source water</p> <p>Frozen pipes</p> <p>Clarifier sensing lines freeze</p>		<p>Top tanks and isolate plant prior to storm event</p> <p>Heat trace</p>	<p>Evaluate mixing for winter ops; mechanical mixing may be preferred for winter</p>
<p>Flow Operating min/max flow rates (75-80 gpm / 1MGD)</p> <ul style="list-style-type: none"> • What is the min/max operating flow rate for this service? • What is the normal operating flow rate? • Can reverse flow happen? • Can an incident occur that could result in exceeding the max/min design flow rates? 	<p>Reverse flow into wet wells occurs when demand is low from wells</p> <p>Low flow may cause filter media to float</p>	<p>None</p> <p>Filter breakthrough or filter performs poorly</p>	<p>N/A</p> <p>Operate WTP intermittently to increase filter loading</p>	<p>N/A</p> <p>Consider operational procedures to optimize filter performance</p>
<p>Pressure Operating max/min pressures</p> <ul style="list-style-type: none"> • What is the maximum pressure for this service? (include abnormal conditions) • What is the normal operating pressure? 	<p>Pressure filters typically run at 3-6 psi</p>			<p>Consider normalizing filter runtimes</p>

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Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
<ul style="list-style-type: none"> • What is the minimum pressure for this service? (include vacuum scenarios) • Can an incident occur that could result in exceeding the max/min pressures? 	Line breaks from high pressure		GIS is used to track leaks and breaks	
Equipment <ul style="list-style-type: none"> • What happens if a piece of rotating or reciprocating equipment stops or fails to operate? • What happens if a control valve fails to control? If it goes to its failure position? If it doesn't go to its failure position? If it opens or closes fully? • What happens if a heat exchanger fails? • What happens if a heater fails? • Is the risk of corrosion and vibration minimized? • Review all emergency shutdown systems. Are they necessary? What if they activate when they shouldn't? What if they don't activate when they should? • What happens if programmable controller fails? • What are manufacturer's recommended calibration frequencies? 	Air valve fails that controls plant influent	Damage to pumps, air in filter causing plant upset	Valve fails closed; wet well will draw down; zero flow alarm; operators must shut pumps off	Add flow switch on pumps or automated plant shutdown to shut down and protect pumps
	Filter vessel failure (rehabbed 9 years ago)	Plant shutdown	Backup water sources include wells and aTUD intertie exists	None
	Clarifier failure or surface loading to clarifier exceeded	Turbidity in O/F	Reclaimed basin can be used	None
	Preventative maintenance (PM) is missed	Mechanical failure	Track maintenance; perform PM activities	Consider CMMS to document PMs
	Pump failure (Pump #3 rebuilt 4-5 years ago; Pump #1 never rebuilt)	Pump fails	Redundant pumps exist; thermal monitoring conducted	None

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Hazard Identification	Risk	Consequence	Mitigation	Action
Plans and Training <ul style="list-style-type: none"> • What happens in the event of incorrect or incomplete training, or operator maladjustment? • Are the properties of all materials handled documented and understood? MSDS's available? • Are normal operating procedures, as well as initial startup, startup after a shutdown, emergency and safety plans documented and understood? • Are suitable maintenance plans available? • Are suitable spare parts and supplies available and a plan for maintenance established? • Are lockout procedures adequate? 	<p>Operator initiates backwashing of filters</p> <p>Improper backwash</p> <p>Sludge blanket (not a risk)</p>	<p>Backwash is reliant on operators to manually perform backwash</p> <p>Turbidity exceedance</p> <p>Flow changes and temperature can upset blanket</p>	<p>Operators are experienced with backwashing</p> <p>Follow Standard Operating Procedures (SOPs)</p>	<p>Evaluate auto backwashing; PLC programming needed; part of SCADA improvement</p> <p>Confirm SOPs available and current</p> <p>Work with KJ to evaluate application of a sludge blanket</p>
Feed or Product Failures <ul style="list-style-type: none"> • What happens if the flow of one of the feed streams stops? • What happens if there is too much feed? • What if there is backflow from the unit? • What if there is the wrong feed composition? 				

Attachment B: Hazard Review Identification Table

Project Name: Twain Harte WTP				
Project Description: Condition Assessment				
Project Manager (Authorizer): Marie Fawcett		MoC Initiator: N/A	MoC Reviewer: N/A	MoC Verifier: N/A
Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
Utility Failures <ul style="list-style-type: none"> • What happens if the electrical power fails? • What are the fail-open and fail-closed settings? • What happens if data transmission lines fail? • Is the system properly grounded? 	<p>Loss of power</p> <p>Obsolete MCC</p> <p>As-builts are not updated</p> <p>Power outage</p> <p>Arc flash</p>	<p>Shut down</p> <p>Cannot order parts</p> <p>Improper operation or troubleshooting</p> <p>One valve on filter is electric and will stay in position; air valves stay in position</p> <p>Injury or death</p>	<p>Emergency generator</p> <p>Generator startups up automatically within 5 seconds</p> <p>Only authorized personnel permitted into MCC</p>	<p>None</p> <p>Evaluate MCC</p> <p>Consider updating dwgs</p> <p>None</p> <p>Suggest further evaluation</p>
Interfaces <ul style="list-style-type: none"> • What happens if integrity of an interface is not maintained? • Interface between high pressure/low pressures? 				
Safety Valves <ul style="list-style-type: none"> • What if something causes a safety/relief valve to lift? • What happens if a safety/relief valve fails to reseal? • Adequate materials for high pressure letdown to low pressure system? 				
Special and Unusual Occurrences <ul style="list-style-type: none"> • Can foaming/fouling occur? If so, what is the effect? • What if corrosion or construction debris accumulates? • What if there are high winds, low or high temperatures, excess precipitation? 				

Attachment B: Hazard Review Identification Table

Project Name: Twain Harte WTP				
Project Description: Condition Assessment				
Project Manager (Authorizer): Marie Fawcett		MoC Initiator: N/A	MoC Reviewer: N/A	MoC Verifier: N/A
Date: 11/3/2020				
Participants: Twain Harte – Tom Trott (GM); Robb Perry (O&M Manager); Lewis Giambruno (Chief Operator) Kennedy Jenks – Marie Fawcett; Dana Strahan; Spencer Archer				
Hazard Identification	Risk	Consequence	Mitigation	Action
Permits <ul style="list-style-type: none"> • Environmental Regulator • Planning Authority • Building Codes • Registration of Critical Safety Devices • Registration of Pressure Vessels 	Power shutoff during demand Tanks are not maintained	Generator (125 KW) runs Tank failure	Generator provides power for WTP Drinking water tanks are inspected with divers every 5 years (1 MG tank refurbished recently; other tank is in CIP)	None Refurbish 1 MG tank per CIP

Attachment C

Condition Assessment Summary

Attachment C: Condition Assessment Summary

WTP Component	Notes and Recommendations
Debris Separators	<ul style="list-style-type: none"> Open tops may allow debris entry. Add covers.
Flash Mixer	<ul style="list-style-type: none"> THCSD reports poor mixing in winter, when flows may be too low to mix properly in the existing flash mixer. Recommend installing low flow bypass with a static mixer or install an adequate mechanical mixer.
Chemical Feed Systems (pre- and post-chlorination, polymer feed, ortho phosphate feed)	<ul style="list-style-type: none"> Corrosion noted at sidewall chemical injection points. Recommend stinger/quill insertion points instead of sidewall to reduce corrosion at injection points and improve mixing. No pH adjustment for primary coagulation. Low alkalinity (~8 – 9 mg/l) may contribute to seasonal operational challenges. Consider pH adjustment (e.g.: adding caustic soda). Carrier water may react with bleach in the feed line. Feed neat bleach if possible or add carrier water closer to injection point. Confirm valves, piping, tubing, pipe sealant, glue, gaskets are rated for use with bleach. Use schedule 80 PVC pipe and fittings, and vented ball valves to avoid trapping off-gases from sodium hypochlorite degradation. Fix leak at sodium hypochlorite tank outlet. Evaluate improvements to mitigate chemical exposure to operators and risk of release (e.g., signage should require PPE prior to entering room; add splash shields; add secondary containment for ortho phosphate storage; provide tepid water for emergency showers). Ensure calibration cylinders are available for each dosing point. Consider locating cylinders and manifold within secondary containment or plumbing to drain to secondary containment. Improve automation of chemical dosing, reporting, and failure alarms. Prepare emergency chlorination plan if post-chlorination system fails. Secure or remove sodium hypochlorite fill line that is no longer used; this represents risk of unauthorized personnel to access chemical tank. Put chemical systems on regular maintenance plan to replace when useful life is reached (e.g., every 5 years or as recommended by manufacturer).
Clarifier	<ul style="list-style-type: none"> THCSD reports seasonal turbidity issues. Operators typically shutdown the plant when storms are expected in order to let turbid waters pass.

	<ul style="list-style-type: none"> • The existing upflow solids contact clarifier is currently operated as a conventional sedimentation basin. Operating the upflow clarifier as originally designed by developing a sludge blanket could help capture turbidity. However, sludge blankets are difficult to develop and maintain and require additional chemicals. Sludge blankets are sensitive to flow and temperature changes. This could be a concern at THWTP. Given the limited seasonal issues experienced at the plant, and difficulty in maintaining a sludge blanket, it is appropriate to continue operating the clarifier as sedimentation basin. Available storage and backup wells allow plant shutdown during storms. • Since the clarifier was not intended to serve as a sedimentation basin, it has a higher process loading than recommended for that application. • In cold temperatures (i.e., when water temperature is <math><12^{\circ}\text{C}</math>), Operators may add energy to process by turning up clarifier flocculation motor. Acts as a single stage flocculator. • Add a flow switch so that pumps shut off if clarifier runs dry.
Filter Pumps	<ul style="list-style-type: none"> • Automate filtration and backwash processes.
Pressure Filter	<ul style="list-style-type: none"> • Filters represent single point of failure at the plant. Ensure preventative maintenance is performed on filters, specifically air/vacuum relief valves. (Note: Groundwater may be used as a back-up domestic water supply. THCS D also has an intertie with Tuolumne Utilities District for emergency water supply.) • Schedule 80 PVC pipes are exposed to UV and may fail. Replace with metallic pipe. • Exterior coat is peeling. Recoat vessel exterior. • Add appropriate backflow prevention device on filter surface wash to eliminate severe cross connection. • Filter is run continuously. Low wintertime flows may cause turbidity breakthrough to occur more quickly. Consider start/stop operation procedure to push more instantaneous flow through at once when “on” and daily average flows are low.
Sludge Pumps and Piping	<ul style="list-style-type: none"> • Simplify and replumb sludge waste pumps and determine if pipe penetrating floor should be abandoned; this may be for the original sludge recirculation to the solids contact clarifier.
Water Reclamation Basin and Piping	<ul style="list-style-type: none"> • Reclaimed water influent pipeline ball valve creates potential for freeze-up if valve is closed during freezing conditions. Consider replacing valve with a gate valve or provide heat trace and insulation.

Million Gallon Storage Tanks	<ul style="list-style-type: none"> • Level transducer in shed is on dynamic water line. Will reflect changes in distribution system pressure (e.g. booster pump turning on) but does not accurately reflect tank level. Update to accurately measure tank level. • Consider use of ultrasonic level sensor from tank roof or pressure indicating transmitter near tank base.
Flow Measurement	<ul style="list-style-type: none"> • Flow meters at plant have varying success. Poor readings may be attributed to low conductivity soft water. Consider other meter types. • Tie flow meters into SCADA.
Motor Control Center (MCC)	<ul style="list-style-type: none"> • Service life is exceeded. May fail at any time. Replace or retrofit. • Outdated, obsolete components (Square D Model 4 is obsolete; Square D Model 6 is current model). • Evaluate for arc flash. • Electrical equipment is located near pressurized water lines. Eliminate trip hazard and reroute lines away from MCC. • Conduct routine preventative maintenance, including thermographic surveys on MCC every 3 to 5 years or as recommended by manufacturer.
WTP Communications	<ul style="list-style-type: none"> • Communication lines were observed to be exposed and subject to damage. Re-route and protect communication lines entering the plant to eliminate or reduce potential for loss of communications to plant.
General/Civil/Site	<ul style="list-style-type: none"> • Dry rot visible on roof – repair. • THCSO reports flooding issues behind main pump building. Consider adding V-ditch drain or other means to address drainage issues around the facility. • Eliminate tripping hazards (e.g. pipes running along the floor). • Evaluate buried pipes: conditions unknown

Attachment D

Recommended Water Treatment Plant Upgrades

Attachment D: Recommended Water Treatment Plant Upgrades

Priority Item/ Ranking	Description	Estimated Cost ¹	Estimated Project Duration ¹	Recommended Timeframe to Complete	
1	MCC Upgrades	a. Testing/Assessment b. Retrofit MCC	\$6k \$40-100k	2 days 2-3 months	ASAP
2	Chemical Feed Systems Upgrades	a. Replace sidewall injection points with stingers b. Consider adding pH adjustment c. Confirm valves and piping are rated for use with bleach; Use Schedule 80 PVC pipe and fittings, and vented valves for air release; Reconfigure sodium hypochlorite carrier water d. Fix leak at sodium hypochlorite day tank outlet e. Evaluate improvements to mitigate chemical exposure to operators and risk of release (e.g., add signage requiring PPE prior to entering room; add splash shields; add secondary containment for ortho phosphate; provide tepid water for emergency showers) f. Secure or remove abandoned lines	TBD – further investigation and scoping required	TBD – further investigation and scoping required	ASAP
3	Filter Upgrades	a. Ensure preventative maintenance is performed on filters, specifically air relief valves b. Replace exposed Schedule 80 PVC pipes with metallic pipe c. Recoat vessel exterior d. Add backflow preventer on filter surface wash to eliminate cross connection	\$5-15k	1-2 months	ASAP
4	Instrumentation SCADA Upgrades ²	a. Update SCADA system / automate: <ul style="list-style-type: none"> Chemical dosing and chlorine residual reporting Shutdown/alarms if post-chlorination feed lost Filtration and backwash cycles Sludge pumping Reclaimed water processing b. Upgrade flow meters and tie into SCADA	N/A – Planned	N/A – Planned	N/A – Planned

¹ Rough estimates of construction cost and timing are based on experience with similar projects.

² KJ understands that the District is planning to upgrade the existing SCADA system in 2021.

Proposed THCS D SCADA Expansion Project Phase Plan

08/06/2020

Phase 1

Water Treatment Plant Main PLC Panel	\$45,847.56
Total	\$45,847.56

Phase 2

Shady Brook Pump House	\$14,676.09
Shady Brook Lift Station	\$15,924.33
Well 2	\$21,453.10
* Well 2 Tesco PLC Modbus Programing	\$3,060.00
Total	\$55,113.52

Phase 3

Mark Twain Lift Station	\$15,924.33
Red Wing Trail	\$15,924.33
Sherwood Forest Tank	\$23,147.16
BO 1/2 Tanks	\$16,526.30
Well 1	\$21,453.10
Well 3	\$21,453.10
Black Oak Pump House and SWTP Generator	\$9,577.97
** CPV/Laurel Pump House	\$15,719.93
Total	\$139,726.22

Phase 4

Water Treatment Plant Chem/Valves etc	\$13,282.60
Water Treatment Plant PLC & HMI Automation	\$26,458.18
Auto Reports	\$5,813.33
Total	\$45,554.11

Phase 5

Filter Influent Valves (x3)	\$39,839.00
Backwash Program	TBD
Total	

*****SubTotal \$286,241.41**
Contingency (25%) \$71,560.35
GRAND TOTAL (ROUNDED) \$360,000.00

- * Tesco will do this part because it's a Tesco program
CPV/Laurel Pump house price will likely change once hydraulic study is completed and
- ** doesn't include additional cost if tank stays

*** Does not include Phase 5 yet

Twain Harte Community Services District
2020/2021 MID-YEAR BUDGET REVISION

	WATER			SEWER			FIRE			PARK			ADMIN			TOTAL
	Approved	Requested	% Diff	Approved	Requested	% Diff	Approved	Requested	% Diff	Approved	Requested	% Diff	Approved	Requested	% Diff	PROJECTED
Revenue																
Service Charges	\$ 1,443,836	\$ 1,470,488	2%	\$ 1,134,923	\$ 1,136,732	0%	\$ -	\$ -	0%	\$ -	\$ -	0%	\$ -	\$ -	0%	\$ 2,607,219
Fees	10,245	14,530	42%	10,645	10,335	-3%	-	-	0%	1,000	5,500	450%	-	-	0%	30,365
Taxes & Assessments	107,825	107,825	0%	-	-	0%	1,135,367	1,135,367	0%	134,556	134,556	0%	-	-	0%	1,377,748
Grants & Donations	-	6,821	6821%	250,000	329,378	32%	7,700	22,595	193%	28,000	100,890	260%	-	-	0%	459,684
Other Revenue	11,500	13,775	20%	7,500	8,725	16%	16,500	104,374	533%	2,250	2,250	0%	1,000	1,000	0%	130,124
Total Program Revenue	\$ 1,573,406	\$ 1,613,438	3%	\$ 1,403,068	\$ 1,485,170	6%	\$ 1,159,567	\$ 1,262,336	9%	\$ 165,806	\$ 243,196	47%	\$ 1,000	\$ 1,000	0%	\$ 4,605,139
Admin Revenue Allocation	470	470	0%	250	250	0%	180	180	0%	100	100	0%	(1,000)	(1,000)	0%	-
GRAND TOTAL REVENUE	\$ 1,573,876	\$ 1,613,908	3%	\$ 1,403,318	\$ 1,485,420	6%	\$ 1,159,747	\$ 1,262,516	9%	\$ 165,906	\$ 243,296	47%	\$ -	\$ -	0%	\$ 4,605,139
Operating Expenses																
Salaries	\$ 311,480	\$ 314,797	1%	\$ 187,228	\$ 188,650	1%	\$ 515,151	\$ 529,464	3%	\$ 10,062	\$ 9,345	-7%	\$ 334,586	\$ 338,551	1%	\$ 1,380,807
Benefits	164,034	165,858	1%	94,135	94,617	1%	240,837	229,306	-5%	5,368	5,425	1%	154,233	155,760	1%	650,966
Equip, Auto, Maint, & Repairs	108,500	110,400	2%	47,200	46,100	-2%	103,100	99,900	-3%	41,700	47,850	15%	20,750	19,700	-5%	323,950
Materials & Supplies	41,450	41,750	1%	5,100	5,200	2%	11,600	12,100	4%	1,600	1,600	0%	4,150	5,250	27%	65,900
Outside Services	55,400	91,900	66%	269,150	347,628	29%	23,250	24,100	4%	4,250	4,250	0%	24,500	21,900	-11%	489,778
Other (Utilities, Prop/Liab Ins, TUD)	156,190	156,050	0%	506,585	508,652	0%	72,150	86,800	20%	18,120	23,500	30%	61,400	57,200	-7%	832,202
Debt Service	188,912	188,912	0%	17,011	17,011	0%	42,365	42,365	0%	-	-	0%	-	-	0%	248,288
Total Program Expenses	\$ 1,025,965	\$ 1,069,667	4%	\$ 1,126,409	\$ 1,207,858	7%	\$ 1,008,453	\$ 1,024,035	2%	\$ 81,100	\$ 91,970	13%	\$ 599,618	\$ 598,361	0%	\$ 3,991,891
Administrative Cost Allocation	281,821	281,230	0%	149,905	149,590	0%	107,931	107,705	0%	59,962	59,836	0%	(599,618)	(598,361)	0%	-
GRAND TOTAL OPERATING EXPENSES	\$ 1,307,786	\$ 1,350,897	3%	\$ 1,276,314	\$ 1,357,448	6%	\$ 1,116,384	\$ 1,131,740	1%	\$ 141,062	\$ 151,806	8%	\$ -	\$ -	0%	\$ 3,991,891
TOTAL OPERATING BALANCE	\$ 266,090	\$ 263,012		\$ 127,004	\$ 127,972		\$ 43,363	\$ 130,775		\$ 24,844	\$ 91,490		\$ -	\$ -		
Capital Expenses																
Capital Outlay	475,620	381,220	-20%	348,300	339,900	-2%	311,680	203,230	-35%	164,400	154,240	-6%	-	-	0%	1,078,590
Administrative Capital Allocation	-	-	0%	-	-	0%	-	-	0%	-	-	0%	-	-	0%	-
Total Capital Expenses	\$ 475,620	\$ 381,220	-20%	\$ 348,300	\$ 339,900	-2%	\$ 311,680	\$ 203,230	-35%	\$ 164,400	\$ 154,240	-6%	\$ -	\$ -		\$ 1,078,590
GRAND TOTAL EXPENSES	\$ 1,783,406	\$ 1,732,117	-3%	\$ 1,624,614	\$ 1,697,348	4%	\$ 1,428,064	\$ 1,334,970	-7%	\$ 305,462	\$ 306,046	0%	\$ -	\$ -	0%	\$ 5,070,481
Transfer To/(From) Reserve	\$ (209,530)	\$ (118,208)		\$ (221,296)	\$ (211,928)		\$ (268,317)	\$ (72,455)		\$ (139,556)	\$ (62,750)		\$ -	\$ -		

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

WATER - REVENUE

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Service Charges					
Water Service Charge	\$ 1,443,836	\$ 1,470,488	\$ 26,651	2%	Year to date consumption is higher than orginally budgeted
TOTAL SERVICE CHARGES	\$ 1,443,836	\$ 1,470,488	\$ 26,651	2%	
Fees					
Late Fee	\$ 6,000	\$ -	\$ (6,000)	-100%	
Door Notice Fee	1,875	-	(1,875)	-100%	
Hookup Fees	900	13,560	12,660	1407%	
Reconnection Fees	500	-	(500)	-100%	
Property Transfer Fee	850	850	-	0%	
Returned Check Fee	120	120	-	0%	
TOTAL FEES	\$ 10,245	\$ 14,530	\$ 4,285	42%	
Taxes & Assessments					
Secured & Unsecured Taxes	\$ 33,660	\$ 33,660	\$ -	0%	
Davis Grunsky Assessment	74,165	74,165	-	0%	
TOTAL TAXES & ASSESSMENTS	\$ 107,825	\$ 107,825	\$ -	0%	
Grants & Donations					
Grant Revenue - Misc		\$ 6,821	\$ 6,821	6821%	Remaining unspent PSPS Grant funds
Grant Revenue - Wells			\$ -	0%	
TOTAL GRANTS & DONATIONS	\$ -	\$ 6,821	\$ 6,821	6821%	
Other Revenue					
Miscellaneous Revenue	\$ -	\$ -	\$ -	0%	
Interest Revenue	11,500	11,500	-	0%	
Lease Revenue	-	-	-	0%	
Sale of Assets	-	2,275	2,275	2275%	Sale of GM Vehicle
TOTAL OTHER REVENUE	\$ 11,500	\$ 13,775	\$ 2,275	20%	
GRAND TOTAL REVENUE	\$ 1,573,406	\$ 1,613,438	\$ 40,032	3%	
Admin Transfer Out	\$ 470	\$ 470	\$ -		
GRAND TOTAL WITH ADMIN	\$ 1,573,876	\$ 1,613,908	\$ 40,032	3%	

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

WATER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Salaries - 51XXX					
Regular Time	\$ 264,234	\$ 266,955	2,721	1%	Staffing restructure
Standby Pay	17,605	17,605	-	0%	
Overtime	9,550	9,550	-	0%	
Sick Leave/Vacation Pay	6,300	6,300	-	0%	
Intern Stipend	9,600	9,600	-	0%	
Uniform Allowance	3,384	3,981	597	18%	Staffing restructure
Cell Phone Stipend	807	807	-	0%	
TOTAL SALARIES	\$ 311,480	\$ 314,797	\$ 3,318	1%	
Benefits - 52XXX					
Health & Vision Insurance	\$ 60,795	\$ 62,019	1,224	2%	Staffing restructure
HRA Reimbursement	24,570	25,190	620	3%	Staffing restructure
CALPERS Retirement	42,970	43,052	82	0%	Staffing restructure
FICA	19,312	19,517	206	1%	Staffing restructure
Medicare	4,516	4,565	48	1%	Staffing restructure
Workers Comp	10,210	10,210	-	0%	
Unemployment Ins/ETT	1,660	1,304	(356)	-21%	Reduction in Unemployment Insurance Rates
TOTAL BENEFITS	\$ 164,034	\$ 165,858	\$ 1,824	1%	
Equipment, Automotive, Maintenance & Repairs					
Equipment Maintenance & Repair	\$ 4,700	\$ 5,700	1,000	21%	
Facilities Maintenance & Repair					
Source of Supply	8,900	8,400	(500)	-6%	
Pumping	6,300	5,400	(900)	-14%	
Water Treatment	12,000	14,700	2,700	23%	Recommendations in WTP condition assessment
Transmission & Distribution	31,500	31,500	-	0%	
General & Administrative	2,500	1,500	(1,000)	-40%	
Vehicle Maintenance & Repair	8,400	8,400	-	0%	
Janitorial Cleaning Fees	1,900	2,000	100	5%	
Fuel	12,000	11,400	(600)	-5%	
Equipment Under \$5,000	19,100	19,900	800	4%	
Personal Protective Equipment	1,200	1,500	300	25%	
TOTAL EQUIP, AUTO, MAINT & REPAIRS	\$ 108,500	\$ 110,400	\$ 1,900	2%	

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

WATER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Materials & Supplies - 54XXX					
Office Supplies	\$ 1,000	\$ 1,000	-	0%	
Postage	4,700	5,000	300	6%	
Food Supplies	400	400	-	0%	
Chemical Supplies	35,000	35,000	-	0%	
Janitorial Supplies	350	350	-	0%	
TOTAL MATERIALS & SUPPLIES	\$ 41,450	\$ 41,750	\$ 300	1%	
Outside Services - 55XXX					
Legal Fees	4,000	4,000	-	0%	
IT Services	1,500	1,900	400	27%	
Engineering Services	46,500	82,000	35,500	76%	Hydraulic Model Study
Medical Exams	300	900	600	200%	
Other Professional Services	3,100	3,100	-	0%	
Other Professional Services-Tree Mortality			-	0%	
TOTAL OUTSIDE SERVICES	\$ 55,400	\$ 91,900	\$ 36,500	66%	
Other - 56XXX					
Utilities	\$ 35,720	\$ 32,100	(3,620)	-10%	
Phone/Communications	6,400	6,400	-	0%	
Computer Licenses & Maintenance	10,500	11,500	1,000	10%	
Property/Liability Insurance	22,500	22,500	-	0%	
Property Tax	450	450	-	0%	
Memberships/Publications/Subscriptions	11,000	10,900	(100)	-1%	
Licenses & Certifications	1,520	800	(720)	-47%	
Training, Conferences & Travel	3,800	4,800	1,000	26%	Additional training for new employees
Uncollectable accounts	1,500	1,500	-	0%	
Advertising & Public Education	600	1,000	400	67%	
Laboratory Fees	22,700	22,700	-	0%	
Regulatory Fees	7,500	8,000	500	7%	
Purchased Water	28,000	29,400	1,400	5%	
Bank & Credit Card Fees	4,000	4,000	-	0%	
TOTAL OTHER	\$ 156,190	\$ 156,050	\$ (140)	0%	
Debt Service - 58XXX					
Interest on Long Term Debt	\$ 35,268	\$ 35,268	0	0%	
Principal on Long Term Debt	153,644	153,644	0	0%	
TOTAL DEBT SERVICE	\$ 188,912	\$ 188,912	\$ -	0%	
GRAND TOTAL EXPENSES					
	\$ 1,025,965	\$ 1,069,667	\$ 43,702	4%	
Admin Transfer Out	\$ 281,821	\$ 281,230	\$ (591)		
GRAND TOTAL WITH ADMIN	\$ 1,307,786	\$ 1,350,897	\$ 43,111	3%	

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

WATER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Capital Outlay - 57XXX					
FH Improvements	15,000	15,000	-	0%	
Laurel Pump Station	275,000		(275,000)	-100%	
Shadybrook Emer Spillway Repair/Imprvmnts*			-	0%	
Million Gallon Tanks Recoat*			-	0%	
Water Sewer Material Bins*	14,000	6,000	(8,000)	-57%	Under budget
Well 3 - Sherwood Forest*	3,000	7,000	4,000	133%	Actual Carryover
WTP Clarifier Refurbish			-	0%	
Truck #4 Replace			-	0%	
SCADA Upgrade	100,000	285,000	185,000	185%	Expansion more costly and extensive
Vantage Pt. Equipment Strucure	9,000	9,000	-	0%	
Training/Admin Parking Lot*	5,900	5,900	-	0%	
GM Vehicle Replace	16,920	16,160	(760)	-4%	
Surface Scatter 7 for SWTP	6,800	7,160	360	5%	
Well #1 Generator	30,000	30,000	-	0%	
TOTAL CAPITAL OUTLAY	\$ 475,620	\$ 381,220	\$ (94,400)	-20%	
GRAND TOTAL WITH CAPITAL	\$ 1,783,406	\$ 1,732,117	\$ (51,289)	-3%	

*Entire project was budgeted in previous fiscal year. New budget requests represent anticipated unspent funds and will be adjusted to reflect actuals at mid-year.

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

SEWER - REVENUE

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Service Charges					
Sewer Service Charge	1,134,923	1,136,732	1,808	0%	
TOTAL SERVICE CHARGES	\$ 1,134,923	\$ 1,136,732	\$ 1,808	0%	
Fees					
Late Fee	\$ 4,500	\$ -	\$ (4,500)	-100%	
Door Notice Fee	1,875	-	(1,875)	-100%	
Hookup Fees	2,900	9,400	6,500	224%	
Reconnection Fees	500		(500)	-100%	
Inspection Fees	50	200	150	300%	
Property Transfer Fee	700	615	(85)	-12%	
Returned Check Fee	120	120	-	0%	
TOTAL FEES	\$ 10,645	\$ 10,335	\$ (310)	-3%	
Grants & Donations					
Grant Revenue-Sewer Planning Grant	250,000	329,378	\$ 79,378	32%	Includes unused portion from 19.20
Donation Revenue			-	0%	
TOTAL GRANTS & DONATIONS	\$ 250,000	\$ 329,378	\$ 79,378	32%	
Other Revenue					
Interest Revenue	7,500	7,500	-	0%	
Sale of Assets	-	1,225	1,225	1225%	Sale of GM Vehicle
Other	-	-	-	0%	
TOTAL OTHER REVENUE	\$ 7,500	\$ 8,725	\$ 1,225	16%	
GRAND TOTAL REVENUE	\$ 1,403,068	\$ 1,485,170	\$ 82,101	6%	
Admin Transfer Out	\$ 250	\$ 250	\$ -		
GRAND TOTAL WITH ADMIN	\$ 1,403,318	\$ 1,485,420	\$ 82,101		

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

SEWER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Salaries - 51XXX					
Regular Time	\$ 147,192	\$ 148,299	1,107	1%	Staffing restructure
Standby Pay	17,605	17,605	0	0%	
Overtime	7,000	7,000	0	0%	
Sick Leave/Vacation Pay	3,500	3,500	0	0%	
Intern Stipend	9,600	9,600	0	0%	
Uniform Allowance	1,890	2,205	315	17%	Staffing restructure
Cell Phone Stipend	441	441	0	0%	
TOTAL SALARIES	\$ 187,228	\$ 188,650	\$ 1,422	1%	
Benefits - 52XXX					
Health & Vision Insurance	\$ 33,728	\$ 34,112	384	1%	Staffing restructure
HRA Reimbursement	13,679	13,913	233	2%	Staffing restructure
CALPERS Retirement	23,976	23,974	(2)	0%	
FICA	11,608	11,696	88	1%	Staffing restructure
Medicare	2,715	2,735	21	1%	Staffing restructure
Workers Comp	7,365	7,365	0	0%	
Unemployment Ins/ETT	1,063	821	(242)	-23%	Reduction in Unemployment Insurance Rates
TOTAL BENEFITS	\$ 94,135	\$ 94,617	\$ 482	1%	
Equipment, Automotive, Maintenance & Repairs					
Equipment Maintenance & Repair	\$ 7,100	\$ 6,800	(300)	-4%	
Facilities Maintenance & Repair					
Lift Station	7,500	8,500	1,000	13%	
Collections	8,850	6,850	(2,000)	-23%	
General & Administrative	1,600	1,100	(500)	-31%	
Vehicle Maintenance & Repair	6,150	5,650	(500)	-8%	
Janitorial/Cleaning Fees	1,500	1,100	(400)	-27%	
Fuel	7,000	6,700	(300)	-4%	
Equipment Under \$5,000	6,200	7,600	1,400	23%	
Personal Protective Equipment	1,300	1,800	500	38%	
TOTAL EQUIP, AUTO, MAINT & REPAIRS	\$ 47,200	\$ 46,100	\$ (1,100)	-2%	

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

SEWER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Materials & Supplies - 54XXX					
Office Supplies	\$ 500	\$ 500	\$ -	0%	
Postage	4,000	4,100	100	3%	
Food Supplies	300	300	0	0%	
Janitorial Supplies	300	300	0	0%	
TOTAL MATERIALS & SUPPLIES	\$ 5,100	\$ 5,200	\$ 100	2%	
Outside Services - 55XXX					
Legal Fees	\$ 2,000	\$ 1,500	\$ (500)	-25%	
IT Services	1,000	1,300	300	30%	
Engineering Services	13,000	12,000	(1,000)	-8%	SSMP completed in 19.20
Medical Exams	150	450	300	200%	
Other Professional Services	253,000	332,378	79,378	31%	Includes unused 19/20 expenses-Small Comm Wastewater project
Other Professional Services-Tree Mortality			0	0%	
TOTAL OUTSIDE SERVICES	\$ 269,150	\$ 347,628	\$ 78,478	29%	
Other - 56XXX					
Utilities	\$ 4,000	\$ 4,700	\$ 700	18%	
Phone/Communications	2,785	2,887	102	4%	
Computer Licenses & Maintenance	9,000	9,365	365	4%	
Property/Liability Insurance	17,600	17,600	0	0%	
Property Tax			0	0%	
Dues & Memberships	5,500	5,500	0	0%	
Licenses & Certifications	1,500	1,900	400	27%	Requirement for Class A licenses
Training, Conferences & Travel	4,300	4,300	0	0%	
Uncollectable accounts	1,500	1,500	0	0%	Due to change in shutoff procedures
Advertising & Public Education	1,500	1,200	(300)	-20%	
Regulatory Fees	400	400	0	0%	
Sewer Service Charge	454,500	455,300	800	0%	
Bank & Credit Card Fees	4,000	4,000	0	0%	
TOTAL OTHER	\$ 506,585	\$ 508,652	\$ 2,067	0%	
Debt Service - 58XXX					
Interest on Long Term Debt	\$ 2,403	\$ 2,403	\$ -	0%	
Principal on Long Term Debt	14,608	14,608	0	0%	
TOTAL DEBT SERVICE	\$ 17,011	\$ 17,011	\$ -	0%	
GRAND TOTAL EXPENSES	\$ 1,126,409	\$ 1,207,858	\$ 81,449	7%	
Admin Transfer Out	\$ 149,905	\$ 149,590	\$ (315)	0%	
GRAND TOTAL WITH ADMIN	\$ 1,276,314	\$ 1,357,448	\$ 81,134	6%	

Twain Harte Community Services District
2020-2021 MID-YEAR BUDGET REVISION

SEWER - EXPENSES

BUDGET ITEM	BUDGET		CHANGE		REASON FOR CHANGE
	20/21 Approved	20/21 Requested	\$	%	
Capital Outlay - 57XXX					
SCADA Upgrade	\$ 85,000	\$ 85,000	\$ -	0%	
Vantage Pt. Equip Structure	\$ 37,000	\$ 37,000	\$ -	0%	
GM Vehicle Replace	9,000	8,600	(400)	-4%	
Sewer Main Re-Lining	75,000	75,000	0	0%	
TH School Sewer Re-Alignment	125,000	125,000	0	0%	
Training Admin Parking Lot*	3,300	3,300	0	0%	
Water Sewer Material Bins*	14,000	6,000	(8,000)	-57%	Under budget
			0	0%	
			0	0%	
			0	0%	
TOTAL CAPITAL OUTLAY*	\$ 348,300	\$ 339,900	\$ (8,400)	-2%	
GRAND TOTAL WITH CAPITAL	\$ 1,624,614	\$ 1,697,348	\$ 72,734	4%	

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