CITY OF TEHAMA

WATER SYSTEM
CAPITAL IMPROVEMENT PLAN

FY 2024/25 – 2033/34

PREPARED FOR CITY COUNCIL MEMBERS:

Robert Mitchell, Mayor
James Bacquet
Robert Christison
Karen Hammers
Hurschel Himes

PREPARED BY:

Carolyn Steffan, City Clerk

WITH TECHNICAL ASSISTANCE FROM:
Burdick & Company

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California Department of Water Resources
Proposition 1 Integrated Regional Water Management
Disadvantaged Community Involvement Grant

Adopted by City Council on September 12, 2023

September 12, 2023

City Council
City of Tehama
PO Box 70
Tehama, CA 96090

RE: 2024/25 – 2033/34 Capital Improvement Plan for Water

To Mayor Mitchell and City Council Members:

I am pleased to present the Fiscal Year (FY) 2024/25 – 2033/34 Capital Improvement Plan for the City of Tehama's water system. The Capital Improvement Plan is designed to be a financial planning tool that identifies the City's water system capital needs over the next ten years and matches those needs with identified funding sources. A Capital Improvement Plan allows spending to be predictive rather than reactive, helping to promote financial and rate stability.

This Capital Improvement Plan is intended to be a living document, updated biennially, to reflect the most current infrastructure and funding needs – and to enable the City to adequately plan for those needs in order to ensure the continued delivery of safe, clean, high quality drinking water to its customers.

Respectfully submitted,

Carolyn Steffan
City Clerk
City of Tehama

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I. Introduction and Summary

This capital improvement planning process was conducted for the City of Tehama (City) water system with funding support from a California Department of Water Resources Proposition 1 Integrated Regional Water Management (IRWM) Disadvantaged Community Involvement Grant for the Sacramento River Funding Area, administered by the Yuba Water Agency. Technical assistance was provided by Burdick & Company (Auburn, CA).

Capital Improvement Plan Process

Simply stated, a Capital Improvement Plan (or CIP) is developed in several steps: perform an inventory of existing infrastructure components, or assets; assess the condition of those assets, based on actual condition as well as projected life; develop a repair/replacement schedule and cost estimate; determine possible sources of funding for the improvements (e.g., capital reserves, loans, grants, revised rates).

In February 2023, Burdick & Company staff began working with the Tehama City Clerk to inventory existing water system infrastructure, perform a condition assessment, and identify infrastructure and planning needs. Each of the major infrastructure needs was listed in an Asset Inventory and Condition Assessment spreadsheet (see Supplemental Information section) and assigned a condition score and an "impact of failure" score (from "insignificant" to "catastrophic"). Based on the condition and urgency of need, the year for needed replacement/repair of each asset component was determined, along with an estimated cost. The resulting information was then used as a basis for developing a 10-year Capital Improvement Plan, and for considering the appropriate amount of funds that should be set aside each year into a reserve account to address longer term capital needs.

This CIP is intended to be updated on at least a biennial basis to ensure that it addresses new and changing priorities for the City's water system.

Capital Improvement Plan Purpose

A Capital Improvement Plan is a short-range plan that identifies capital projects, planning/ engineering services, and equipment purchases for major repairs or replacement of existing infrastructure, or new improvements. Capital improvements are major projects that are generally not recurring on an annual basis. In this sense they are differentiated from operations and maintenance (O&M) expenditures for normal water operations. As a general rule of thumb, capital expenditures are those that cost greater than $5,000 and have a useful life of greater than one (1) year. Conceptual projects are not included in this CIP.

A CIP allows spending to be *predictive* rather than *reactive*. The CIP identifies a timeframe and a plan for funding or financing capital improvements. The purpose of this CIP is to forecast and match projected revenues and other funding sources with major capital needs for the City of Tehama's water system over the FY 2024/25 –2033/34 10-year period. In order for a project to be included in the CIP it must first be evaluated, including consideration of the asset's function, condition, the consequence of failure, and estimated cost.

The Capital Improvement Plan is simply that – a plan. Priorities will change over time, as will funding opportunities and financial circumstances. The CIP does not in any way obligate the City to spending. Nor are projects included in this plan guaranteed for funding. The CIP represents a working plan

intended to be updated on a regular basis. Capital planning will help the City attain financial and rate stability.

Layout of this Document

This Capital Improvement Plan is organized as follows:

- **Chapter I – Introduction** provides a brief introduction to capital improvement planning.
- **Chapter II – Water System Projects and CIP Funding Strategy** provides a description of water system capital needs, a discussion of project priorities, the identified funding sources, and a summary table that lists the projects and project costs by anticipated funding year over the next 10 fiscal years, along with anticipated future costs.
- **Chapter III – Water System Capital Reserve** considers the benefits of creating a separate reserve for water system capital improvement needs, and calculates the annual contribution that would be needed in order to cover the costs of anticipated capital improvement needs into the future.
- **Chapter IV – Biennial CIP Calendar** provides guidance for the City's Water System CIP planning effort going forward.

The following resources are provided in the Supplemental Information section:

- **Water System Asset Inventory and Condition Assessment:** This spreadsheet provides a list of capital project needs for the City's water system, along with a condition evaluation score for each project, estimated cost (in 2023 dollars), and the projected year in which the replacement/repair will be needed.
- **Potential Grant and Loan Resources:** This section provides a description of grant and loan resources that may be relevant for the City's water capital improvement needs.

II. Water System Projects and CIP Funding Strategy

Water System Overview

The City of Tehama, located in Tehama County along the Sacramento River, serves a population of 435 via 195 customer connections. In 2022, the City's water system (PWS ID# CA5200504) supplied 32,894,347 gallons of water to its residential customers. The City's water supply is derived from two groundwater wells. Well No. 3, located on 4th St. adjacent to Habert Park, was constructed in 1994, and Well No. 4, located on 4th St. in Belbeck Park, was constructed in 2002. Each well has a 5,000-gallon hydro-pneumatic storage tank. The City was recently awarded $1,161,482 in State grant funds to construct a third well, Well No. 5, which will operate in tandem with the two existing wells. The water distribution system consists of approximately 23,700 linear feet of pipeline made up of steel, asbestos cement (AC) and C-900 polyvinyl chloride (PVC) pipelines, plus 42 hydrants. The City utilizes an XiO SCADA System that was installed in 2016.

In 2002 the City performed a major rehabilitation of its water system funded through Community Development Block Grant funds, US Department of Agriculture (USDA) Rural Development funds, and formation of an assessment district. This included replacement of nearly 10,000 LF of C-900 PVC main pipeline plus some service lines, upgrading fire hydrants, and the installation of Badger "drive by read" customer meters. In 2022, Badger AMR endpoints were installed on the meters, providing updated "drive by" meter reading capability.

The last water rate study was performed in 2009 when the water meters were installed. The new water rate structure was adopted in September 2009, and a water rate policy was established to include an annual rate increase tied to the construction cost index. If the index rate is negative, the City's water rate remains the same as the previous year. The current water rate is $40.50 for 10,000 gallons, with tiered increases after 10,000 gallons.

Summary of 10-Year Capital Improvement Plan Costs by Fiscal Year

Table 1 below provides a synopsis of costs for recommended capital improvements for the City of Tehama's water system over the next 10 fiscal years. Table 2, on page 6, provides greater cost detail including estimated costs for future capital improvement needs beyond this 10-year planning period. The projects and estimated costs are described in the sections below.

Table 1. 10-Year Capital Improvement Plan

	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	10-YEAR CIP TOTAL	FUNDING SOURCE
Well #3	36,400					26,572		15,328			78,300	Cash
Well #4									65,757		65,757	Cash
AC Pipe (replace with C-900)					243,641					296,247	539,888	Cash + Loan, or potential SRF Grant
TOTALS	**36,400**	**-**	**-**	**-**	**243,641**	**26,572**	**-**	**15,328**	**65,757**	**296,247**	**683,945**	

Water System Capital Improvement Projects

The City of Tehama's water system is in very good to excellent condition. The current need is for an additional well as the existing wells are aging and have required extensive repairs in the past several years. Because of the lack of availability of repair parts and personnel, an additional well is needed to ensure an adequate supply of water for the residents. With the new Well No. 5 planned for construction – funded almost entirely with grant funds – the system should have more than sufficient capacity to serve Tehama's population well into the future.

The following provides a high-level assessment of the City's water system infrastructure along with the anticipated water system capital improvement needs:

1) **Well No. 3:** Well No. 3 was constructed in 1994. The well is in generally good condition but is aging and therefore potentially unreliable. The soft start was replaced in June 2014, and a 50 hp Franklin motor with 3 stage Gould pump was installed new in October 2021. An air conditioning system was added in the summer 2023 to keep the controls from overheating. There are no urgent needs for Well No. 3 currently, though the motor control panel is nearing the end of its expected lifespan. This CIP assumes replacement of the motor control panel next year (FY 2024-25). The only other anticipated replacement needs within the next 10 years are the 6" LAKOS sand separator, with replacement expected in FY 2029-30, and the 3 stage pump, with replacement expected in FY 2031-32. These replacement costs with inflation are anticipated to total approximately $78,300 over the next eight years.

2) **Well No. 4:** Well No. 4 was constructed in 2002 when the City's water system was overhauled. This well is in generally good condition but, like Well No. 3, is aging and in need of regular repairs. There are no urgent needs. The 40 hp Hitachi motor was last replaced in July 2022, along with the 3 stage pump. In August 2022 the LAKOS sand separator and Grundfos variable speed drive were replaced. In November 2022, a new transfer switch for the generator was installed. Based on standard expected lifespans, the City may expect to replace the motor control panel and the pump in FY 2032-33. Total costs are estimated at $65,757.

3) **Distribution Pipeline:** The distribution pipeline system consists of 21,512 linear feet (LF) of water mains and 2,228 LF of service lines. Different parts of the pipeline were installed at different times. Some of the pipeline is nearly 70 years old (1.25" service lines, dating back to 1955), though most of the pipeline appears to have been installed, or upgraded, since the 1970s. In 2002, with the water system overhaul, approximately 9,650 LF of mains and 1,130 LF of services lines were replaced, and in 2010, an additional 2,000 LF of mains were replaced. Pipes tend to last many years (typically 65-75 years); however, they do require repair on occasion and they eventually need to be replaced. Based on standard lifespan, some of the service lines are "past due" for replacement, but the main lines are generally in good shape, expected to last another 20 – 50 years (or more).

   One exception is the asbestos-cement (AC) pipe, which was installed in 1971. In the early 1980s, due to public health concerns, the US Environmental Protection Agency issued a complete ban on all asbestos-related products. While health impacts are known to be caused by inhalation of asbestos, some studies have indicated a potential public health risk associated with ingestion of asbestos over time. This risk is thought to be low for water pipes, but as a precaution it is recommended that water systems replace AC pipeline. In addition, while typical water pipe failures often begin with a small leak and gradually break, AC pipes tend to devastatingly fail without warning. For these reasons it is recommended that the City of Tehama plan to replace

the AC pipes, totaling 6,617 LF, within the next 20 years. This CIP provides a plan to replace the AC pipe in phases over the next 20 years. The total cost for replacement would be approximately $1,338,836, with an estimated $539,888 required within the next 10 fiscal years if constructed in phases.

4) **Fire Hydrants and Gate Valves:** The City's distribution system includes 42 fire hydrants, with 133 gate valves. The City upgraded the fire hydrants in 2002 to 6" hydrants. Some of the hydrants were already 6" and those were not replaced. Therefore, while many of the hydrants have been in service since 2002 (21 years), others are much older (installation date unknown). The typical lifespan for fire hydrants is about 50 years. The City's strategy is generally to "repair as needed" rather than to replace the hydrants; however, at some point in the future hydrants will fail, parts will become obsolete, and replacement will be required. This CIP assumes replacement of fire hydrants in phases, with 25% of the hydrants replaced in 2052, 25% replaced by 2062, and the remaining 50% replaced by 2072. Assuming a 4% inflation rate, the cost for replacement of all fire hydrants by 2072 would total an estimated $799,866.

   The gate valves will likely require replacement sooner than the fire hydrants, as they date back to 1985; however, gate valves also can outlive their expected lifespans if exercised regularly. This CIP assumes replacement of gate valves in phases, with 10% of the gate valves replaced in 2035 (at the end of the expected lifespan), another 30% replaced within the following 10 years (2045), and the final original 60% replaced within the subsequent 10 years (by 2055). With a 4% inflation rate, the cost for replacement of all gate valves by 2045 would total $843,230.

5) **Water Meters:** The City installed Badger water meters in 2002, and in 2022 installed Badger analog meter registers and automated meter reading (AMR) endpoints, enabling the meter readers to collect "drive by" meter information. The expected lifespan for meters and meter registers is 40 years, and for endpoints is 15 years. The City should therefore plan to replace the endpoints in 2037 (estimated cost with 4% inflation is about $58,000). The water meters will not need to be replaced until around 2042 (estimated at $86,880), and the registers not until 2062 (roughly $105,000).

6) **SCADA:** The City relies on SCADA (Supervisory Control and Data Acquisition) for much of the day-to-day operation of the water system. The XiO SCADA system was installed in 2016, and is expected to function well for another 20 years or so.

Table 2 provides a detailed cost summary for the City's capital improvement needs over the next 10 fiscal years and into the foreseeable future. A 40% labor cost factor has been added for installation of all project components except for pipe replacement, which calculates labor at $100 per linear foot. Inflation has been factored in at an estimated annual rate of 4%.

This table shows the total costs for replacing each component of the City's water system <u>once</u>; i.e., though a pump has an expected lifespan of 10 years and a generator has an estimated lifespan of 50 years, the table shows replacement for each of these components just once. Bear in mind that inflation rates and materials costs fluctuate greatly over time, making cost estimates beyond the 10-year period very hard to predict. The greater the period of time, the greater the uncertainty of cost. Nonetheless, the table provides a useful planning tool for considering future water system costs, and helps raise general awareness of potential major expenses on the horizon.

Table 3 shows the projected cost estimates grouped into 10-year increments to help envision the general timing of infrastructure needs further into the future.

Table 2. Capital Improvement Plan Project Details (Costs in $)

	Current Item Cost Estimate (2023)	Cost Including Estimated Labor	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	10-YEAR CIP TOTAL	FUTURE	Estimated Replace-ment Date
Well #3															
50 hp 3 Phase Motor	15,000	21,000												34,967	2036
3 Stage Gould Pump	8,000	11,200								15,328			15,328		2031
6" LAKOS sand Separator	15,000	21,000						26,572					26,572		2029
5000-gallon Hydro-Pneumatic Storage Tank	20,000	28,000												43,105	2034
50kw Kohler Natural Gas Standby Generator	34,000	47,600												108,469	2044
Generator Transfer Switch	20,000	28,000												63,806	2044
Motor Control Panel	25,000	35,000	36,400										36,400		2024
Building Improvements	30,000	42,000												141,672	2054
6' Chain Link Fencing with Gates	5,000	7,000												34,951	2064
Well #4															
40 hp 3 Phase Motor	15,000	21,000												36,365	2037
3 Stage Gould Pump	8,000	11,200									15,941		15,941		2032
6" LAKOS Sand Separator	15,000	21,000												79,681	2057
5000-gallon Hydro-Pneumatic Storage Tank	20,000	28,000												58,992	2042

	Current Item Cost Estimate (2023)	Cost Including Estimated Labor	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	10-YEAR CIP TOTAL	FUTURE	Estimated Replace-ment Date
50kw Kohler Natural Gas Standby Generator	34,000	47,600												148,448	2052
Generator Transfer Switch	20,000	28,000												191,334	2072
Motor Control Panel	25,000	35,000									49,816		49,816		2032
Building Improvements	30,000	42,000												141,672	2054
6' Chain Link Fencing with Gates	5,000	7,000												47,833	2072
Distribution System															
6" Waterous Hydrants	106,428	148,999												799,866	2052 - 2072
6" Gate Valves	202,160	283,024												843,230	2035 - 2055
Services															
1" Poly	1,414	103,114												704,614	2072
1" Galvanized (install poly)	1,034	75,434												165,285	2043
2" Poly	240	11,940												81,590	2072
Mains															
6" AC Pipe (replace with C-900) – 6,617 LF	138,957	800,657					243,641					296,247	539,888	798,948	2028 - 2043
6" C-900 Pipe – 361 LF	7,581	43,681												116,446	2048
6" C-900 Pipe – 380 LF	7,980	45,980												188,699	2059
6" C-900 Pipe – 1,482 LF	31,122	179,322												860,929	2063
6" C-900 Pipe – 1,021 LF	21,441	123,541												721,625	2068

	Current Item Cost Estimate (2023)	Cost Including Estimated Labor	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	10-YEAR CIP TOTAL	FUTURE	Estimated Replace-ment Date
6" C-900 Pipe – 9,644 LF	202,524	1,166,924												9,701,589	2077
6" C-900 Pipe – 2,007 LF	42,147	242,847												2,763,120	2085
Meters															
Badger Meters	29,455	41,237												86,880	2042
Badger Meter Registers	16,245	22,743												104,990	2062
Badger AMR Endpoints	23,920	33,488												57,990	2037
XiO SCADA System															
SCADA	25,000	35,000												70,904	2041
TOTALS	**1,201,648**	**3,839,531**	**36,400**	**-**	**-**	**-**	**243,641**	**26,572**	**-**	**15,328**	**65,757**	**296,247**	**683,945**	**19,198,000**	

GRAND TOTAL	**19,881,945**

Table 3. Capital Improvement Needs Projected in 10-Year Increments (Costs in $)

	Cost Including Estimated Labor	FY 2024/25 - 2033/34	FY 2034/35 - 2043/44	FY 2044/45 - 2053/54	FY 2054/55 - 2063/64	FY 2064/65 - 2073/74	FY 2074/75 - 2084/85	Estimated Replacement Date
Well #3								
50 hp 3 Phase Motor	21,000		34,967					2036
3 Stage Gould Pump	11,200	15,328						2031
6" LAKOS sand Separator	21,000	26,572						2029
5000-gallon Hydro-Pneumatic Storage Tank	28,000		43,105					2034
50kw Kohler Natural Gas Standby Generator	47,600			108,469				2044
Generator Transfer Switch	28,000			63,806				2044
Motor Control Panel	35,000	36,400						2024
Building Improvements	42,000				141,672			2054
6' Chain Link Fencing with Gates	7,000					34,951		2064
Well #4								
40 hp 3 Phase Motor	21,000		36,365					2037
3 Stage Gould Pump	11,200	15,941						2032
6" LAKOS Sand Separator	21,000				79,681			2057
5000-gallon Hydro-Pneumatic Storage Tank	28,000		58,992					2042
50kw Kohler Natural Gas Standby Generator	47,600			148,448				2052
Generator Transfer Switch	28,000					191,334		2072
Motor Control Panel	35,000	49,816						2032
Building Improvements	42,000				141,672			2054
6' Chain Link Fencing with Gates	7,000					47,833		2072
Distribution System								
6" Waterous Hydrants	148,999			110,637	180,147	509,082		2052 - 2072
6" Gate Valves	283,024		44,291	201,727	597,212			2035 - 2055
Services								
1" and 2" Poly	115,054					786,204		2072
1" Galvanized (install poly)	75,434		165,285					2043
Mains								
6" AC Pipe (replace with C-900) – 6,617 LF	800,657	539,888	798,948					2028 - 2043
6" C-900 Pipe – 14,895 LF	1,802,295			116,446	1,049,627	721,625	12,464,710	2048 - 2085

	Cost Including Estimated Labor	FY 2024/25 - 2033/34	FY 2034/35 - 2043/44	FY 2044/45 - 2053/54	FY 2054/55 - 2063/64	FY 2064/65 - 2073/74	FY 2074/75 - 2084/85	Estimated Replacement Date
Meters								
Badger Meters and Endpoints	74,725		144,871					2042
Badger Meter Registers	22,743				104,990			2062
XiO SCADA System								
SCADA	35,000		70,904					2041
TOTALS	**3,839,531**	**683,945**	**1,397,727**	**749,533**	**2,295,000**	**2,291,030**	**12,464,710**	

GRAND TOTAL	**19,881,944**

General CIP Funding Strategy

In general, the City's funding strategy for water system capital improvement needs is to obtain grants whenever possible, pay with cash (from revenues or from the City's Water System Reserve) as available, and if loans are needed, to borrow internally at 0% interest before seeking external loans. Grants, revenues, and an assessment district have been the main sources of funding for the City's capital improvements to date. This section briefly describes grants, reserves, and loans as potential funding options.

Grants: While the City has been quite successful at obtaining grant funds to pay for major capital projects in the past, the City also recognizes that grant funds are highly uncertain and should not be counted on as a source of funding for the purposes of financial planning. Moreover, applying for grant funds can be considerably time consuming and administratively challenging, given limited staff resources.

Nonetheless, as a small, economically severely disadvantaged community (SDAC), the City of Tehama is eligible and prioritized for certain grant funds including State Revolving Fund (SRF) grants administered by the State Water Resources Control Board, USDA Rural Development Water and Wastewater Program grants, Community Development Block Grant funds, amongst others. It is recommended that the City apply for grant funding for all high-cost capital improvement water system needs if staff resources allow, or to contract with a grant writer.

The Supplemental Information section of this report provides a summary of potential grant resources that may be relevant for the City's water system capital improvement needs.

Reserves: Because grant funds cannot and should not be counted on as a primary source of funds for maintaining the City's water system, the City sets aside a certain portion of revenues each year for future water system needs. The City of Tehama maintains an unrestricted Water System Reserve that can be used for any water system-related needs, including capital improvement, emergency, or operating needs. In recent years the City has been contributing approximately $30,000/year toward the Reserve Fund, depending on revenues. As of the end of FY 2022/23, the Water System Capital Reserve showed a balance of $695,728. While it is the City's intention to build this Reserve, the City would be willing to spend down the Reserve if necessary.

Chapter III of this CIP considers the benefits of creating a separate reserve dedicated specifically to water system capital improvement needs, and calculates the annual contribution that would be needed in order to cover the costs of anticipated capital needs into the future.

Loans: In addition to the Water System Reserve, the City also has access to the City's General Fund for water system needs. Funds can be borrowed from the General Fund at 0% interest. As of the end of FY 2022/23, the General Fund Capital Improvement Reserve showed a balance of $881,754, and the General Fund's "Other" category showed a balance of $345,555.

While the City prefers to borrow internally (at 0% interest) rather than seek external loans whenever possible, several low-interest loan options exist. Some potential loan resources from federal, state, and private lenders are listed in the Supplemental Information section.

Funding Strategy for this 10-Year CIP

The total anticipated cost for all capital projects over the next 10 fiscal years, as shown in Tables 1 and 2, is estimated at $683,945. It is expected that the City will pay cash for improvements related to the wells (estimated at $144,057), either from current revenues or from the Water System Reserve.

For the AC pipe replacement, several options exist. If the AC pipe replacement is constructed in phases over 20 years as this CIP assumes, the estimated cost over the next 10 fiscal years would be $539,888. To cover that cost, this CIP conservatively assumes that the City would pay 10% of the total cost with cash from the existing Water System Reserve and seek a combination of internal no-interest and external low-interest loans for the remaining cost.

Alternatively, the City could apply to the State Water Resources Control Board for SRF grant funds to cover the entire cost of AC pipe replacement (estimated at over $1.3 million). Grant funds are by no means guaranteed; routine pipe replacement is not considered "competitive" for purposes of SRF grant funding. However, small SDACs (such as the City of Tehama) are generally prioritized by the State Water Resources Control Board, and the SRF is especially well funded currently, enabling the State to award more grants and higher amounts than in previous years. This CIP therefore recommends that the City apply for SRF funds for the full cost of AC pipe replacement. Technical assistance may be available through the State Water Resources Control Board to help develop the application.

III. Water System Capital Reserve

This chapter provides a suggestion for potentially restructuring the City's Water System Reserve, and calculates annual reserve contribution amounts under four different scenarios to help City Council determine how much the City should be contributing into the reserve fund annually in order to sufficiently address capital improvement needs into the future.

Consider: Three Separate Reserve Accounts

The City's Water System Reserve is currently set up as a single account, to be used as needed for capital, operating, or emergency water system needs. The unrestricted nature of the account provides flexibility and has worked well to date. However, the City might also consider establishing separate reserve accounts to create a Capital Improvement Reserve, an Operating Reserve, and an Emergency Reserve. Establishing separate accounts ensures that sufficient funds are always available for operating and emergency needs, while the capital improvement fund can continue to grow, depending on revenues.

For an Operating Reserve, it is recommended that water systems set aside the equivalent of 1 -3 months of operating expenses to cover any unexpected operating emergencies. For FY 2022-23, total expenses for the City's water system were approximately $60,000, or $5,000/month. An Operating Reserve equivalent to two or three months would equal $10,000 or $15,000.

For an Emergency Reserve, it is recommended that water systems set aside the replacement cost of the most expensive piece of equipment that, in the event of failure, would put the delivery of water at risk. For the City of Tehama, that piece of equipment is most likely a well pump, which has a current replacement cost of approximately $40,000.

For a Capital Improvement Reserve, the "ideal" amount of funding to maintain is more challenging to calculate. Water districts calculate the annual Capital Reserve amount in various ways.

Calculating an Annual Capital Reserve Contribution

Table 4 below demonstrates the exercise of calculating an annual reserve amount for the City's water system capital improvement needs. The spreadsheet assumes an annual inflation rate of 4%. Standard industry information and local knowledge was used for estimating replacement dates.

The amount needed for the annual Capital Reserve is directly dependent on the extent to which the City expects to receive grant funds or loans versus paying with cash (revenues or Reserve) for any particular component. Those are all unknowns at this time. For the purposes of this exercise, the following assumptions have been made:

- The City will pay cash (revenues or existing Reserve) for all "lower cost" capital improvement needs over the next 10 fiscal years.
- For lower-to-moderate-cost capital improvement needs (generally under $150,000) beyond the 10-year CIP planning period, the City will set aside funds into the Reserve to fully cover the future cost of those items.

- For high-priced items – which includes hydrants and gate valves, and pipeline – the City will seek grant funds or take out loans to cover the majority of costs, and pay the rest with a combination of revenues and reserve funds. The spreadsheet shows the assumptions made for each item in terms of percentage of cost that would likely be covered with grant or loan, the percentage that would likely be covered with revenues, and the percentage that would then be needed for future reserve funds.

The percentage of cost that the City would expect to pay with reserve funds for each component is the amount that would need to accumulate in the Capital Improvement Reserve account between now and the year that item needs to be replaced.

The annual reserve contribution for each item, then, is calculated by the amount of Capital Improvement Reserve needed at the time of replacement divided by the number of years to replacement. For example, this CIP assumes that gate valve replacement will occur in phases, and that the gate valves replaced in 32 years will cost an estimated $597,212. The reserve calculation assumes that the City would seek grant or loans funds for most of that cost (75%), spend cash from revenues or from the existing Water Reserve for 10% of the cost (in order to reduce the amount of potential loan required), and set funds aside each year between now and the year of replacement (2043) to cover the remaining 15% of cost. Fifteen percent of the total cost equals $89,582, divided by 32 years is $2,799, which represents the amount the City would need to contribute annually into the Capital Improvement Reserve in order to be able to cover that cost in the year 2055.

Reserve Account Scenarios

Four possible scenarios have been identified to support future capital needs, shown in Table 4:

- **Scenario A** calculates the annual reserve contribution amount for "all foreseeable needs," meaning the amount it would cost to replace each piece of equipment in the water system once, at the end of its expected lifespan. This includes replacing all pipeline and hydrants, some of which have expected replacement dates as late as 2085.
- **Scenario B** calculates the annual reserve contribution amount based on foreseeable needs over the next 30 years (through 2054).
- **Scenario C** calculates the annual reserve contribution amount based on foreseeable needs over the next 20 years (through 2044).
- **Scenario D** calculates the annual reserve contribution amount based on foreseeable needs over the next 20 years (through 2044), but also includes an additional amount to cover potential repair costs for water mains and services.

The annual reserve contribution amount under Scenario A is $112,471. Given that the City is currently able to set aside about $30,000/year based on revenues, the Scenario A amount is clearly unaffordable. Scenario A also has the greatest uncertainty in terms of cost estimates. It might also be argued that to expect current customers to pay for services required in 50 years would be inequitable.

Scenario B, which considers capital needs over the next 30 years, would require an annual reserve contribution amount of $70,564. Some might argue that 30 years is also an unreasonable planning period, though the costs are probably more realistic.

Scenario C, which considers capital needs over the next 20 years, would require an annual reserve contribution amount of $49,950. This is about $20,000 more than the City is contributing currently; however, the amount does reflect the real costs of running the City's water system. Note that the annual reserve contribution will change depending on how much will be paid with grant or loan, and how much will be paid with cash.

Scenario D is the same as Scenario C but adds an additional $19,173/year as a set-aside for pipe repair. Pipes do have long lifespans but they also develop leaks that need to be repaired prior to needing full replacement. The amount added for pipe repair is calculated at 1% of the total current-day (2023) pipe costs, minus the cost of the AC pipe and the 1" galvanized service pipeline which is expected to get replaced within those 20 years. This would bring the total annual reserve contribution to $69,124.

Recommendations for Reserve Funds

Scenario C is the recommended scenario for establishing an annual contribution to a Capital Improvement Reserve ($49,950). Scenario D would provide greater insurance, but is likely out of reach at this time. Also, the City has already accumulated a very healthy Water System Reserve, and has access to the City's General Fund – both of which provide additional financial cushion.

As noted, the City has been contributing approximately $30,000/year to the Water System Reserve in recent years. In order to be able to contribute an additional $20,000 on an annual basis, the City would likely need to increase water rates. The City's water rate structure does factor in annual increases based on the construction cost index; however, since the last water rate study occurred more than 10 years ago, a new study should be conducted to examine current rates with respect to system costs.

This CIP recommends that the City conduct a water rate study at the soonest time possible. If the rate study finds that the Scenario C annual reserve recommendation is unachievable without making rates unaffordable for Tehama's customers, then a balance will be found, allowing the City to continue to provide affordable water while growing the Water System Reserve to the maximum extent possible in order to ensure future sustainability.

Table 4. Annual Capital Reserve Calculations

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
Well #3	50 hp 3-phase Motor	2021	15	$21,000	2036	13	$34,967	$34,967			Set aside 100% of cost for future Reserve.	$2,690	$2,690	$2,690	$2,690
	3 Stage Pump	2021	10	$11,200	2031	8	$15,328	$0		$15,328	Fund with existing cash (Reserve or Operating Budget).				
	6" LAKOS Sand Separator	1994	35	$21,000	2029	6	$26,572	$0		$26,572	Fund with existing cash (Reserve or Operating Budget).				
	5000-gallon Hydro-Pneumatic Storage Tank	1994	40	$28,000	2034	11	$43,105	$43,105			Set aside 100% of cost for future Reserve.	$3,919	$3,919	$3,919	$3,919
	50kw Kohler Natural Gas Standby Generator	1994	50	$47,600	2044	21	$108,469	$108,469			Set aside 100% of cost for future Reserve.	$5,165	$5,165	$5,165	$5,165
	Generator Transfer Switch	1994	50	$28,000	2044	21	$63,806	$63,806			Set aside 100% of cost for future Reserve.	$3,038	$3,038	$3,038	$3,038
	Motor Control Panel	1994	30	$35,000	2024	1	$36,400	$0		$36,400	Fund with existing cash (Reserve or Operating Budget).				
	Building Improvements	1994	60	$42,000	2054	31	$141,672	$141,672			Set aside 100% of cost for future Reserve.	$4,570	$4,570		
	6' Chain Link Fencing with Gates	1994	70	$7,000	2064	41	$34,951	$34,951			Set aside 100% of cost for future Reserve.	$852			

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
Well #4	40 hp 3-phase Motor	2022	15	$21,000	2037	14	$36,365	$36,365			Set aside 100% of cost for future Reserve.	$2,598	$2,598	$2,598	$2,598
	3 Stage Pump	2022	10	$11,200	2032	9	$15,941	$0		$15,941	Fund with existing cash (Reserve or Operating Budget).				
	6" LAKOS Sand Separator	2022	35	$21,000	2057	34	$79,681	$79,681			Set aside 100% of cost for future Reserve.	$2,344			
	5000-gallon Hydro-Pneumatic Storage Tank	2002	40	$28,000	2042	19	$58,992	$58,992			Set aside 100% of cost for future Reserve.	$3,105	$3,105	$3,105	$3,105
	50kw Kohler Natural Gas Standby Generator	2002	50	$47,600	2052	29	$148,448	$148,448			Set aside 100% of cost for future Reserve.	$5,119	$5,119		
	Generator Transfer Switch	2022	50	$28,000	2072	49	$191,334	$191,334			Set aside 100% of cost for future Reserve.	$3,905			
	Motor Control Panel	2002	30	$35,000	2032	9	$49,816	$0		$49,816	Fund with existing cash (Reserve or Operating Budget).				
	Building Improvements	1994	60	$42,000	2054	31	$141,672	$141,672			Set aside 100% of cost for future Reserve.	$4,570	$4,570		
	6' Chain Link Fencing with Gates	2002	70	$7,000	2072	49	$47,833	$47,833			Set aside 100% of cost for future Reserve.	$976			

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
Distribution System															
Total 42 hydrants. Replace hydrants between 2052 and 2072.	6" Waterous Hydrants (10)	2002	50	$35,476	2052	29	$110,637	$110,637			Replace 10 hydrants (25% of total hydrants) in 2052. Set aside 100% for future Reserve.	$3,815	$3,815		
	6" Waterous Hydrants (11)	2002	50	$39,024	2062	39	$180,147	$180,147			Replace 11 hydrants (25% of total hydrants) in 2062. Set aside 100% for future Reserve.	$4,619			
	6" Waterous Hydrants (21)	2002	50	$74,500	2072	49	$509,082	$127,270	$381,811		Replace 21 hydrants (50% of total hydrants) in 2072. Assume 75% of cost will be paid with grant or loan. Set aside 25% for future Reserve.	$2,597			
Total 133 gate valves. Replace valves	6" Gate Valves (13)	1985	50	$27,664	2035	12	$44,291	$44,291			Replace 13 gate valves (10% of total) in 2035. Set aside 100% of cost for future Reserve.	$3,691	$3,691	$3,691	$3,691

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
between 2035 and 2055.	6" Gate Valves (40)	1985	50	$85,120	2045	22	$201,727	$30,259	$151,296	$20,173	Replace 40 gate valves (30% of total) in 2045. Assumes 10% of cost will be paid with existing cash, 75% with grant or loan. Set aside 15% for future Reserve.	$1,375	$1,375		
	6" Gate Valves (80)	1985	50	$170,240	2055	32	$597,212	$89,582	$447,909	$59,721	Replace 80 gate valves (60% of total) in 2055. Assumes 10% of cost will be paid with existing cash, 75% with grant or loan. Set aside 15% for future Reserve.	$2,799			
Services															
All pipe installation assumes labor cost of $100/LF	1" Poly (1,017 LF)	2002	70	$103,114	2072	49	$704,611	$176,153	$528,459		Assumes 75% will be paid with grant or loan. Set aside 25% for future Reserve.	$3,595			
	1" Galvanized (install poly – 744 LF)	?	50	$75,434	2005	20	$165,286	$123,964		$41,321	Assumes 25% will be paid with existing cash. Set aside 75% for future Reserve.	$6,198	$6,198	$6,198	$6,198

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
	2" Poly (117 LF)	2002	70	$11,940	2072	49	$81,589	$61,192		$20,397	Assumes 25% will be paid with existing cash. Set aside 75% for future Reserve.	$1,249			
Mains															
Replace AC Pipe in 4 phases: Total 6,617 LF	6" AC Pipe – 1,655 LF (replace with C-900)	1971	65	$200,255	2028	5	$243,641	$0	$219,277	$24,364	Replace AC pipe within 20 years in 4 phases. Pay 10% with cash, assume 90% grant or loan.				
	6" AC Pipe - 1,654 LF (replace with C-900)	1971	65	$200,134	2033	10	$296,247	$0	$266,622	$29,625	Replace AC pipe within 20 years in 4 phases. Pay 10% with cash, assume 90% grant or loan.				
	6" AC Pipe – 1,654 LF (replace with C-900)	1971	65	$200,134	2038	15	$360,430	$54,065	$270,323	$36,043	Replace AC pipe within 20 years in 4 phases. Pay 10% with cash, assume 75% grant or loan. Set aside 15% for future Reserve.	$3,604	$3,604	$3,604	$3,604
	6" AC Pipe – 1,654 LF (replace with C-900)	1971	65	$200,134	2043	20	$438,518	$65,778	$328,889	$43,852	Replace AC pipe within 20 years in 4 phases. Pay 10% with cash, assume 75% grant or loan. Set aside 15% for future Reserve.	$3,289	$3,289	$3,289	$3,289

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
	6" C-900 Pipe - 361 LF	1973	75	$43,681	2048	25	$116,446	$29,112	$87,335		Assumes 75% will be paid with grant or loan. Set aside 25% for future Reserve.	$1,164	$1,164		
	6" C-900 Pipe - 380 LF	1984	75	$45,980	2059	36	$188,699	$47,175	$141,524		Assumes 75% will be paid with grant or loan. Set aside 25% for future Reserve.	$1,310			
	6" C-900 Pipe – 1,482 LF	1988	75	$179,322	2063	40	$860,929	$86,093	$774,836		Assumes 90% will be paid with grant or loan. Set aside 10% for future Reserve.	$2,152			
	6" C-900 Pipe – 1,021 LF	1993	75	$123,541	2068	45	$721,625	$72,162	$649,462		Assumes 90% will be paid with grant or loan. Set aside 10% for future Reserve.	$1,604			
	6" C-900 Pipe – 9,644 LF	2002	75	$1,166,924	2077	54	$9,701,589	$485,079	$9,216,510		Assumes 95% will be paid with grant or loan. Set aside 5% for future Reserve.	$8,983			
	6" C-900 Pipe – 2,007 LF	2010	75	$242,847	2085	62	$2,763,120	$138,156	$2,624,964		Assumes 95% will be paid with grant or loan. Set aside 5% for future Reserve.	$2,228			

Asset Name	Asset Type	Purchase Date	Manufac-turer's Est. Useful Life (years)	Est. Cost with Labor	Replace-ment Date	# of years to Replace-ment (from 2023)	Future Est. Replace-ment Cost	Set Aside for Future Reserves	Fund with Grant or Loan	Fund with Cash	FUNDING SOURCES	ANNUAL RESERVE SCENARIOS			
												SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D
												All Fore-seeable Needs	Needs Over the Next 30 Years Only (2054)	Needs Over the Next 20 Years Only (2044)	Scenario C + Fund for Pipe Repair
											PIPE REPAIR SET-ASIDE: This equals 1% of total current (2023) pipe costs, not counting AC pipe and 1" galvanized services which will get replaced in 20 years				$19,173
Meters	Badger Model 35 Water Meters	2002	40	$41,237	2042	19	$86,880	$86,880			Set aside 100% of cost for future Reserve.	$4,573	$4,573	$4,573	$4,573
	Badger Analog Water Meter Registers	2022	40	$22,743	2062	39	$104,990	$104,990			Set aside 100% of cost for future Reserve.	$2,692			
	Badger Water Meter Endpoints (AMR)	2022	15	$33,488	2037	14	$57,990	$57,990			Set aside 100% of cost for future Reserve.	$4,142	$4,142	$4,142	$4,142
SCADA	XiO SCADA System	2016	25	$35,000	2041	18	$70,904	$70,904			Set aside 100% of cost for future Reserve.	$3,939	$3,939	$3,939	$3,939
TOTAL ANNUAL RESERVE												**$112,471**	**$70,564**	**$49,950**	**$69,124**

IV. CIP Biennial Calendar

Capital Improvement Plan Process

The typical process for developing a Water System CIP consists of the following:

1. **Asset Inventory and Condition Assessment:** The first step in developing a CIP is to inventory the existing water system infrastructure, perform a condition assessment, and identify infrastructure and planning needs. Each of the major infrastructure needs is listed in an Asset Inventory and Condition Assessment spreadsheet and assigned a condition score (from "very poor" to "excellent"). An "impact of failure" score may also be assigned in order to help prioritize project needs. Based on the condition, the standard lifespan, and urgency of need, the year for needed replacement/repair of each project or component is then determined, along with an estimated cost. Costs are determined by looking up current costs of equipment/components by manufacturer, or by conferring with consulting engineers to determine typical construction costs. The Asset Inventory and Condition Assessment spreadsheet in this CIP can be used as a foundation for future planning efforts.

2. **10-Year Funding Plan:** Based on the cost information and estimated replacement dates provided in the asset inventory spreadsheets, the City Clerk evaluates available and potential sources of funding and determines the most appropriate and/or likely funding source(s) for each project. Grant opportunities should be researched and re-evaluated at this stage and loan terms updated in order to ensure the most up-to-date information.

3. **CIP Development and Adoption:** Finally, the CIP document is drafted and submitted to the City Council for review and adoption.

Biennial CIP Calendar

The following provides a suggested calendar for updating the City's Capital Improvement Plan on a biennial basis. The CIP should ideally be submitted to City Council for review and recommendation during the beginning stages of the City's annual budget process.

- February – March: City Clerk and Water System Operator (currently the same person) update the Asset Inventory and Condition Assessment spreadsheet; set priorities for capital needs and update replacement dates; and update capital cost estimates.
- April: City Clerk evaluates financial options and drafts CIP 10-Year Funding Plan.
- Early May: City Clerk presents Draft CIP to City Council.
- Early-May – Mid-June: CIP revisions, if needed. CIP available for two-week public review. Revised CIP presented to City Council.
- End of June: Public hearing conducted; CIP adopted by City Council as part of annual budget process.

SUPPLEMENTAL INFORMATION

Water System Asset Inventory and Condition Assessment

Table 5 below shows an inventory of the City of Tehama's water system as of April 2023. City of Tehama staff, with technical assistance from Burdick & Company, evaluated each system component and assigned:

- a **condition score** from 1 – 5: 1 very poor, 2 poor, 3 fair, 4 good, 5 excellent;
- an **impact of failure score** from 1 – 4: 1 catastrophic, 2 moderate, 3 minor, 4 insignificant; and
- an overall **priority score** with 1 being the highest priority.

The table also includes the projected year for which replacement is expected to be needed for each system component.

Table 5. Water System Asset Inventory and Condition Assessment

Asset Name	Additional Information	Asset Type	Asset Quantity	Purchase Date	Manufacturer's Estimated Useful Life (yrs./date)	Replacement /Repair Cost Per Unit (2023 $)	Total Asset Cost (2023 $)	Condition Score (1 through 5)	Impact of Failure Score (1 through 5)	Priority Score (1 is highest priority)	Replacement Date
Well #3 (constructed in 1994)	4th St. adjacent to Habert Park	50 hp 3-phase Motor	1	2021	15	$15,000	$15,000	5; Excellent	1; Catastrophic	1	2036
		3 Stage Pump	1	2021	10	$8,000	$8,000	5; Excellent	1; Catastrophic	1	2031
		6" LAKOS Sand Separator	1	1994	35	$15,000	$15,000	4; Good	3; Minor		2029
		5000-gallon Hydro-pneumatic Storage Tank	1	1994	40	$20,000	$20,000	4; Good	1; Catastrophic	3	2034
		Pneumatic Tank Air Compressor	1	1994		$2,500	$2,500	4; Good	3; Minor		
		McCrometer Flow Meter	1	1994	15	$3,000	$3,000	3; Fair	3; Minor		2009
	Diesel	50kw Kohler Natural Gas Standby Generator	1	1994	50	$34,000	$34,000	4; Good	2; Moderate	4	2044
	Recently upgraded	Generator Transfer Switch	1	1994	50	$20,000	$20,000	4; Good	2; Moderate		2044
		Motor Control Panel	1	1994	30	$25,000	$25,000	4; Good	1; Catastrophic	2	2024
		Building Improvements	1	1994	60	$30,000	$30,000	4; Good	2; Moderate		2054
		6' Chain Link Fencing with Gates	200	1994	70	$25	$5,000	4; Good	3; Minor		2064
Well #4 (constructed in 2002)	4th St. in Belbeck Park	40 hp 3-phase Motor	1	2022	15	$15,000	$15,000	5; Excellent	1; Catastrophic	1	2037

		3 Stage Pump	1	2022	10	$8,000	$8,000	5; Excellent	1; Catastrophic	1	2032
		6" LAKOS Sand Separator	1	2022	35	$15,000	$15,000	5; Excellent	3; Minor		2057
		5000-gallon Hydro-pneumatic Storage Tank	1	2002	40	$20,000	$20,000	4; Good	1; Catastrophic	3	2042
		Pneumatic Tank Air Compressor	1	2002		$2,500	$2,500	4; Good	3; Minor		
		McCrometer Flow Meter	1	2002	15	$3,000	$3,000	3; Fair	3; Minor		2017
		50kw Kohler Natural Gas Standby Generator	1	2002	50	$34,000	$34,000	4; Good	2; Moderate	4	2052
		Generator Transfer Switch	1	2022	50	$20,000	$20,000	5; Excellent	2; Moderate		2072
		Motor Control Panel	1	2002	30	$25,000	$25,000	4; Good	1; Catastrophic	2	2032
		Building Improvements	1	1994	60	$30,000	$30,000	4; Good	2; Moderate		2054
		6' Chain Link Fencing with Gates	200	2002	70	$25	$5,000	4; Good	3; Minor		2072
Distribution System											
		6" Waterous Hydrants	42	2002	50	$2,534	$106,428	3; Fair	2; Moderate		begin replacing in 2052
		6" Gate Valves	133	1985	50	$1,520	$202,160	3; Fair	2; Moderate		2035
	Services	(208 CUSTOMERS)									
		1" Poly	1,017	2002	70	$1.39	$1,414	4; Good	3; Minor		2072
		1" Galvanized (install poly)	744	unknown	50	$1.39	$1,034	2; Poor	3; Minor	6	2020
		2" Poly	117	2002	70	$2.05	$240	4; Good	3; Minor		2072

	Mains	6" AC Pipe in LF **(replace with C-900)**	6,617	1971	65	$21	$138,957	2; Poor	2; Moderate	5	2025
		6" C-900 Pipe in LF	361	1973	75	$21	$7,581	3; Fair	2; Moderate		2048
		6" C-900 Pipe in LF	380	1984	75	$21	$7,980	4; Good	2; Moderate		2059
		6" C-900 Pipe in LF	1,482	1988	75	$21	$31,122	4; Good	2; Moderate		2063
		6" C-900 Pipe in LF	1,021	1993	75	$21	$21,441	4; Good	2; Moderate		2068
		6" C-900 Pipe in LF	9,644	2002	75	$21	$202,524	4; Good	2; Moderate		2077
		6" C-900 Pipe in LF	2,007	2010	75	$21	$42,147	4; Good	2; Moderate		2085
		Blow Off Assembly	1	1993		$2,500	$2,500	3; Fair	4; Insignificant		2033
	Badger Water Meters with endpoints	Meters were installed in 2002. Endpoints were installed in 2022.									
	Badger Model 35 Water Meters	3/4"	204	2002	40	$120	$24,480	5; Excellent	3; Minor		2042
	Badger Model 35 Water Meters	1 1/2"	1	2002	40	$325	$325	5; Excellent	3; Minor		2042
	Badger Model 35 Water Meters	2"	1	2002	40	$850	$850	5; Excellent	3; Minor		2042
	Badger Model 35 Water Meters	3"	1	2002	40	$1,800	$1,800	5; Excellent	3; Minor		2042
	Badger Model 35 Water Meters	4"	1	2002	40	$2,000	$2,000	5; Excellent	3; Minor		2042
	Badger Analog Meter Registers	3/4"	204	2022	40	$75	$15,300	5; Excellent	3; Minor		2062
	Badger Analog Meter Registers	1 1/2"	1	2022	40	$150	$150	5; Excellent	3; Minor		2062
	Badger Analog Meter Registers	2"	1	2022	40	$175	$175	5; Excellent	3; Minor		2062

	Badger Analog Meter Registers	3"	1	2022	40	$270	$270	5; Excellent	3; Minor		2062
	Badger Analog Meter Registers	4"	1	2022	40	$350	$350	5; Excellent	3; Minor		2062
	Badger Water Meter Endpoints	"Drive by radios"	208	2022	15	$115	$23,920	5; Excellent	3; Minor		2037
XiO SCADA System			1	2016	25	$25,000	$25,000	4; Good	1; Catastrophic	4	2041

Potential Grant and Loan Resources

This section provides a description of grant and loan resources that may be considered for the City of Tehama's water system capital improvement needs. Note that grant and loan resources should be re-evaluated during each biennial CIP planning process, since loan terms may change, eligibility for certain grants based on disadvantaged community (DAC) status may change, and new grant opportunities may become available.

Drinking Water State Revolving Fund (DWSRF): The DWSRF is administered by the California State Water Resources Control Board. Funds are available for both planning and construction to address water system needs.

According to US Census Bureau's American Community Survey 2021 five-year data, the average median household income (MHI) for the City of Tehama was $50,104, as compared with the average statewide MHI during that same period, which was $84,097. With an MHI less than 60 percent of the statewide average and with a population of 435, the City of Tehama is considered a small severely disadvantaged community (SDAC).

As a small SDAC, the City of Tehama is potentially eligible to receive up to 100% grant or principal forgiveness (PF) for Category A – F projects (table below) or for consolidation. Note that the State Water Resources Control Board prioritizes small DACs and SDACs – such as the City of Tehama – over other applicants with similar needs.

Priority Ranking	Description
Category A	Immediate health risk
Category B	Untreated at-risk sources
Category C	Compliance or shortage
Category D	Inadequate reliability
Category E	Secondary risks
Category F	Other projects

The City would be eligible for up to $60,000 per connection for Category A – D projects (or potentially up to $80,000 per connection for good cause), and for up to $45,000 per connection for Category E – F projects (or potentially up to $60,000 per connection for good cause). Category A – D and consolidation projects are more competitive for funding than Category E – F projects.

The table below, from Appendix E of the DWSRF 2023/24 Intended Use Plan, summarizes grant/PF eligibility and maximum grant amounts.

APPENDIX E: Construction Project Grant and PF Limitations for an Eligible PWS

Maximum PF, Grant or Combination Thereof Per Construction Project [39, 40]			
Type of Community[41]	**Residential Water Rates as a Percentage of MHI**[42]	**Percentage of Total Eligible Project Cost**	**Maximum Amount Per Connection**[43,44,45]
Category A – D and/or Consolidation Projects[46]			
Small DAC/SDAC; Eligible NTNC[47] That Serves a Small DAC/SDAC; Expanded Small DAC/SDAC; or Small Non-DAC[48] with MHI < 150% of Statewide MHI	N/A	up to 100%	$60,000[48]
Category A – C and/or Consolidation Projects[46]			
Medium DAC/SDAC;[49]	N/A	up to 100%	$60,000[47]
Category E – F Projects			
Small DAC/SDAC or Eligible NTNC That Serves a Small DAC/SDAC	N/A	up to 100%	$45,000[50]
Expanded Small DAC/SDAC	>=1.5%		
	<1.5%	Not Eligible for PF, Grant or Combination Thereof	

Repayable Construction Financing Terms				
Type of Community	**Residential Water Rates as a Percentage of MHI**	**Interest Rate**	**Maximum Financing Term**[51]	**Local Cost Share**[52]
Small SDAC or Eligible NTNC That Serves a Small DAC	N/A	0%	40 Years	Waived
Small DAC or Expanded Small DAC/SDAC	>=1.5%			
	<1.5%	½ General Obligation Bond Rate		

The State Water Board may also award a combination of grant and low-interest loan, or offer 100% low-interest loan. The loan interest rate is updated annually on the first of the year. The standard interest rate for DWSRF financing is 50% of California's average general obligation bond rate obtained by the State Treasurer for the previous calendar year, rounded up to the next highest ten basis points (0.10%). The DWSRF loan interest rate as of January 1, 2023 is 2.1%.

Visit the State Water Resources Control Board's website for more information about the DWSRF Program.

Small Community Drought Relief Grant: The Small Community Drought Relief Grant is administered by the California Department of Water Resources for communities that are not served by an Urban Water Supplier. This grant covers such projects as fixing or replacing leaking water lines, construction of an additional well for drought resiliency, additional water storage facilities and tanks. The City of Tehama has successfully obtained grant funds through this program. Unfortunately, the Small Community Drought Relief grant program closed in early 2023. It is worth checking DWR's website from time to time to learn if similar programs are released, or if this program is re-funded.

US Department of Agriculture Rural Development (USDA RD) Water and Waste Disposal Loan & Grant Program: This program funds water and wastewater projects for rural areas and towns with populations of 10,000 or less. As a DAC, the City of Tehama would be eligible for grants and would also

qualify for reduced interest rate loans. USDA RD loan interest rates are adjusted quarterly. The "poverty rate" currently is 2.125% (fourth quarter FY2023, effective July 1, 2023). See USDA RD's website for more information about the Water and Waste Disposal Loan & Grant Program.

Community Development Block Grant (CDBG): This program is administered by the California Department of Housing and Community Development. CDBG grants can be used to buy, construct, or fix public facilities such as water systems. CDBG also funds studies and plans for housing, public works, and community facilities that meet CDBG national objectives and provide principal benefit to low-income persons. A project must address one of three national objectives:

1. Provide benefit to low- and moderate-income persons,
2. Aid in the prevention or elimination of slums and blight, or
3. Meet an urgent need.

The City of Tehama is eligible for CDBG grant funds, and has successfully obtained these grants in the past. For more information about CDBG, contact Tehama County Planning Department.

US Bureau of Reclamation's WaterSMART Water and Energy Efficiency Grant (WEEG): The WEEG grant program funds AMI meter replacement and irrigation measures (including turf removal, smart irrigation controllers and high-efficiency nozzles, i.e., sprinkler heads; these measures are typically promoted by water entities through rebates or direct-install programs). There are three funding tiers: up to $500,000 for a two-year grant, up to $2 million for a three-year grant, or up to $5 million for a three-year grant. A 50% non-federal match is required. These grants are very competitive. It is not recommended that the City pursue WEEG grant funds unless the project need is considerable. Visit the WEEG website for more information.

US Bureau of Reclamation's WaterSMART Small-Scale Water Efficiency Grant: The Small-Scale Water Efficiency Grant is similar to WEEG but funds up to $100,000 per applicant. The grant covers municipal metering, SCADA, landscape Irrigation measures, high-efficiency indoor appliances and fixtures, and other projects. The grant requires a 50% non-federal match. Total project costs should generally be $225,000 or less. The Small-Scale Water Efficiency Grant could potentially be a good source of grant funds for the City's meter replacements. For more information, visit the Small-Scale Water Efficiency Grant website.

US Bureau of Reclamation's WaterSMART Drought Resiliency Grant: This grant program supports projects that will increase the reliability of water supplies, improve water management, and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought. Water meters and water conservation projects are not eligible under this program. Projects must be beyond routine water management activities; e.g., replacing pipeline would not be eligible unless doing so somehow improves system flexibility. There are three funding tiers: up to $500,000 for a two-year grant, up to $2 million for a three-year grant, or up to $5 million for a three-year grant. The grant requires a 50% non-federal match. Projects should generally be in the final design stage; environmental and cultural resources compliance should be initiated or already completed; and the non-federal funding, necessary permits, and other required approvals should be secured. Proposed projects that are supported by an existing drought plan are prioritized. Again, it is not recommended that the City pursue this particular grant opportunity unless the project need is considerable; however, it is worthwhile keeping grant opportunities such as this on the radar for future needs. For more information, visit the Drought Resiliency Grant Program website.

Other Loan Programs:

Below-market interest rates to fund water infrastructure projects are offered by several agencies and lending institutions, including (among others):

- California Infrastructure and Economic Development Bank: I-Bank provides up to 30-year loans for projects ranging from $1M - $65M.
- California Municipal Public Financing Authority: CalMuni PFA is statutorily authorized to issue water revenue bonds on a stand-alone or pooled basis.
- CSDA Finance Corporation: CSDA Finance Corporation facilitates financings for special districts and other local government agencies.
- Co-Bank: Provides loans for communities with populations less than 20,000.
- US Environmental Protection Agency Water Infrastructure Finance and Innovation Act (WIFIA) Loans: WIFIA loans can provide up to 49% of financing for projects that are eligible for Drinking Water or Clean Water SRF. Minimum project size for communities with populations less than 25,000 is $5 million. The only CIP project at this time suitable for a WIFIA loan would be pipeline replacement. However, pipeline replacement would more likely occur over time rather than all at once. The City would be advised to pursue SRF grant/low-interest loan for pipeline replacement before pursuing WIFIA.