

WATER CAPITAL IMPROVEMENT PROGRAM

As described in the 2018 Water Master Plan Update, the Sonoma community counts on the City to deliver high quality, dependable water for drinking, cooking, cleaning dishes, hygiene, landscaping, operating restaurants, hotels and other businesses, as well as dozens of other uses each and every day. People also count on the City to deliver water that the Sonoma Valley Fire & Rescue Authority needs to protect the lives, homes, and properties of the residents, visitors, and business owners in Sonoma and the surrounding area.

FISCAL YEAR 2019-20 ACCOMPLISHMENTS:

- Supported the water rate setting process which provides funds to replace aging water infrastructure, improve fire safety, reduce leaks and unplanned water shutdowns, and upgrade water meter system.
- Updated City's Geographic Information System (GIS) database with record information, completing Water System Condition Data – Phase 1 and 2.
- In cooperation with SCWA, conducted monitoring for the Aquifer Storage and Recovery Pilot Project at the City's Well 6 north of the Veterans Memorial Building parking lot, and initiated groundwater banking.
- Initiated design of 2020 Fire Flow Improvements – Upsizing AC Pipe and Unknown Pipe to 8" PVC

FISCAL YEAR 2020-21 ACCOMPLISHMENTS:

- Completed 2020 Urban Water Management Plan (UWMP) to replace the 2015 UWMP, as required every 5 years
- Completed design and initiated construction of 2020 Fire Flow Improvements – Upsizing AC Pipe and Unknown Pipe to 8" PVC

FISCAL YEAR 2021-22 GOALS:

The proposed water system improvement projects identified in the 2018 Water Master Plan Update, and included in this Capital Improvement Program (CIP), are tailored to achieve the objectives below.

- **PUBLIC SAFETY:** *Promote public safety by addressing system pressure and fire flow deficiencies.*
 - Complete construction of the 2020 Fire Flow Improvements – Upsizing smaller water lines to 8" PVC and connecting dead end sections of water line
- **SUPPLY RELIABILITY:** *Strengthen the City's ability to reliably supply potable water based on current and planned demand.*
 - Initiate and commence implementation of water meter system upgrades project.
- **CITY WELL RESILIENCE** *Protect the City's potable water supply against emergencies, drought, or natural disasters by bolstering potable water supply from City wells.*
 - Monitor Sonoma Valley Groundwater Sustainability Agency work for reconsideration of well construction and existing well rehabilitation as funding and information aligns. Pump testing for proposed new Well No. 9, recommended in the Water Master Plan Update, is not included due to groundwater sustainability planning work and potential impact on water rates. Consider need for increased local groundwater supply to supplement restricted aqueduct water supply during 2021 severe drought.
- **COST-EFFECTIVE RENEWAL AND REPLACEMENT** *Minimize life-cycle costs by planning for the cost-effective renewal and replacement of aging water system components.*
 - Fulfill requirements of water valves in Caltrans right-of-way by funding replacement of valve boxes as part of Caltrans pavement rehabilitation project.

WATER: Providing High Quality, Dependable Water

- Analyze data to prioritize aging pipelines for replacement, design and initiate construction of project to replace 2% of City's pipelines

CHALLENGES:

Water CIP challenges include: limited staff resources to implement CIP projects, evolving groundwater regulations, and lack of data regarding the condition of existing water facilities.



WATER: Providing High Quality, Dependable Water

Projects all funded by Water Fund

CP #	Capital Budget by Project	Estimated Cumulative Prior Expenditures	Estimated 2020-21 Carryover	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total	Notes
W-2	Water System Condition Data - Phase 2	\$0	\$100,680	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$225,000	Water Master Plan Update 2018
W-3	Renewal & Replacement of Existing Pipelines	\$0	\$0	\$0	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$4,400,000	Water Master Plan Update 2018 - delayed 2 years
W-4	Replacement of Water Services with Pavement Rehabilitation Projects	\$0	\$0	\$0	\$23,000	\$220,000	\$23,000	\$220,000	\$486,000	Best practice for pavement preservation
W-8	Urban Water Management Plan & Minor Water Master Plan Update	\$11,058	\$61,941	\$30,000	\$0	\$0	\$0	\$75,000	\$105,000	Water Master Plan Update 2018
W-10	Water Meter System Upgrades	\$40,638	\$59,342	\$2,000,000	\$0	\$0	\$0	\$0	\$2,000,000	Water Master Plan Update 2018 - delayed 1 year
W-12	Replacement of Valve Boxes with Caltrans Pavement Rehabilitation Project	\$0	\$0	\$169,533	\$0	\$0	\$0	\$0	\$169,533	Caltrans project impact
TOTAL		\$51,716	\$223,963	\$2,244,533	\$1,168,000	\$1,365,000	\$1,168,000	\$1,440,000	\$7,385,533	

Project Name: Water System Condition Data – Phase 2

CIP Number: W-2

Project Description: This project will update the City’s Geographic Information System (GIS) database further after Condition Data – Phase 1 (see CIP #W-1) adds information for pipe material and age. For Phase 2, factors to update into the database include the following: record drawings, pipe material details (i.e., class number or ASTM specifications), leak history, previous acoustic sounding information, data from a condition assessment of Asbestos Cement (AC) pipes, and preventative maintenance records.

This project also includes the improvement of the City’s Computerized Maintenance and Monitoring System (CMMS) for water activities. Planned outcomes for the CMMS effort include use of in-field computers to run an application that displays the GIS data and allows City operations staff to relate each of their maintenance or repair activities to a specific asset from GIS. The CMMS application will facilitate simultaneous multi-user read/write access to the water system database using industry-standard Relational Database Management System software.

This project was recommended for implementation in the City’s approved 2018 Water Master Plan Update.



Project Contact: Mike Brett, Water Conservation Coordinator & TBD, Environmental Compliance Analyst

Estimated Initiation: 2021

Estimated Cumulative Prior Expenditures: \$0

Estimated 2020-21 Carryover: \$100,680

Total Project Funding: Ongoing

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$225,000
Total	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$225,000

Project Name: Renewal & Replacement of Existing Pipelines

CIP Number: W-3

Project Description: A majority of the City’s water mains were built in the 1970s with Asbestos Cement (AC) pipe. These pipes are now 40-48 years old, and the City should begin to renew or replace those pipes which can be reasonably anticipated to be in poor condition. After a proper condition assessment is implemented (see condition assessment CIP projects elsewhere in the 5-year CIP), the City plans to address a minimum of 2% of the City’s AC pipe every year based on the assessment, looking forward to replace 100% of the AC pipe over 50 years. The City will target locations where maintenance staff has experienced leaks, loss of pressure, etc. An asset management program will help organize priorities. AC pipelines will be replaced in coordination with other City projects, such as street rehabilitation, along with coordinating with other utilities. This should allow for cost efficiencies through the concurrent implementation of multiple projects. \$1,099,400 is allocated each year beginning in Fiscal Year 2021/22 and each subsequent fiscal year.

This project was recommended for implementation in the City’s approved 2018 Water Master Plan Update.



Project Contact: TBD, Water Supervisor

Estimated Initiation: Summer 2023

Estimated Cumulative Prior Expenditures: \$0

Estimated 2020-21 Carryover: \$0

Total Project Funding: \$1.1 million per year starting in Fiscal Year 2022/23 for 50 years (2% of AC pipe replaced each year)

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$0	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$4,400,000
Total	\$0	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$4,400,000

Project Name: Replacement of Water Services with Pavement Rehabilitation Projects
CIP Number: W-4

Project Description: Water services are pipelines that transport water from the City’s water mains to water customers. Since each property has at least one water service, there is a vast network of water services under the City’s streets. When the City constructs street pavement rehabilitation projects, it is typically cost-effective to replace the water services under the street as part of the project. Replacing water services in coordination with pavement rehabilitation projects allows for multiple projects to be completed at a minimum cost. It also protects the City’s investment in new pavement by reducing the need for street cuts associated with water service repairs. Project funding and schedule is dependent on coordination with pavement rehabilitation projects, currently anticipated to be constructed biennially.



Project Contact: Michelle Fajardo, Public Works Administrative and Project Manager

Estimated Construction: Ongoing with pavement rehabilitation projects (see CIP #T-5)

Estimated Cumulative Prior Expenditures: Ongoing

Estimated 2020-21 Carryover: \$0

Total Project Funding: Ongoing project (see CIP #T-5 for related pavement rehabilitation work)

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$0	\$23,000	\$220,000	\$23,000	\$220,000	\$486,000
Total	\$0	\$23,000	\$220,000	\$23,000	\$220,000	\$486,000

Project Name: Urban Water Management Plan & Minor Water Master Plan Update
CIP Number: W-8

Project Description: An Urban Water Management Plan (UWMP) is required every five years. The 2025 UWMP will replace the City’s 2020 UWMP. The purpose of the UWMP is to evaluate whether the City can meet the water demands of its customers as projected over a 20- or 25-year planning horizon. Any municipal water supplier serving over 3,000 connections or 3,000 acre-feet per year is required to prepare a UWMP every five years under the California Urban Water Management Planning Act.

As part of a Water Master Plan Update, the City will need to incorporate water system projects that the City has completed since the current date, revise water supply and demand data consistent with the 2020 UWMP, and identify proposed water system improvement projects for inclusion in the City’s Capital Improvement Program (CIP).



Project Contact: TBD, Water Supervisor

Estimated Completion: 2021 (Ongoing)

Estimated Cumulative Prior Expenditures: N/A

Estimated 2020-21 Carryover: N/A

Total Project Funding: Ongoing

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$30,000	\$0	\$0	\$0	\$75,000	\$105,000
Total	\$30,000	\$0	\$0	\$0	\$75,000	\$105,000

Project Name: Water Meter System Upgrades
CIP Number: W-10

Project Description: Currently, the City uses mechanical meters, which are read once a month using a drive-by automatic meter reading system. The objectives for replacing the existing hybrid-mechanical system with Advanced Metering Infrastructure (AMI) are to: cost-effectively enhance customer service, improve water savings, and provide near real-time water usage data to the City’s water customers. AMI would improve water system operations and provide faster leak detection throughout the water distribution system.



An initial feasibility assessment and draft Request for Proposals has been developed. The AMI project needs long-term City water staff to be successful. After completion of the Water Supervisor recruitment process, the AMI project can move forward. Assuming a complete replacement, the total costs and benefits for a 15-year investment period are approximately \$2,493,000 in costs for \$5,357,000 in benefits, a benefit/cost ratio of over 2.



Project Contact: TBD, Water Supervisor

Estimated Construction: 2021-22

Estimated Cumulative Prior Expenditures: \$40,658

Estimated 2020-21 Carryover: \$59,342

Total Project Funding: \$2,100,000

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$2,000,000	\$0	\$0	\$0	\$0	\$2,000,000
Total	\$2,000,000	\$0	\$0	\$0	\$0	\$2,000,000

Project Name: Replacement of Valve Boxes with Caltrans Pavement Rehabilitation Project
CIP Number: W-12

Project Description: The City is responsible for 162 water valves in State Route 12. In 2021, Caltrans is constructing a pavement rehabilitation project on State Route 12 (Broadway and West Napa Street) through Sonoma. Caltrans' contractor will need to remove and replace the City's valve boxes at the City's expense to achieve pavement compaction at the water valve box locations. Compaction is critical for pavement longevity. The valve boxes to be installed by Caltrans' contractor must meet Federal Buy America requirements. Costs include contractor's unit price of \$850 each "Adjust Utility Cover to Grade" plus \$196.50 each for materials.



Project Contact: Michelle Fajardo, Public Works Administrative and Project Manager

Estimated Construction: 2021

Estimated Cumulative Prior Expenditures: \$0

Estimated 2020-21 Carryover: \$0

Total Project Funding: \$169,533.

Funding Source	Requested Funding 2021-22	Anticipated Request 2022-23	Anticipated Request 2023-24	Anticipated Request 2024-25	Anticipated Request 2025-26	5-year Total
Water Fund	\$169,533	\$0	\$0	\$0	\$0	\$169,533
Total	\$169,533	\$0	\$0	\$0	\$0	\$169,533