

Internal Monitoring Report

Policy #: EL-2G Infrastructure
Frequency: Annual

Date: March 23, 2021

Policy Language:

The General Manager shall not cause or allow conditions, procedures, or decisions that prevent Madison Water Utility from meeting its obligation to serve current and future generations of customers within the City of Madison and its authorized service areas.

Accordingly, the General Manager shall not cause or allow conditions, procedures, or decisions that:

1. Fail to assure that required rates fund all expenditures for timely and prudent capital improvements to existing utility systems, and that those capital improvements are driven by reliability, operational or regulatory requirements, replacement of aging infrastructure, utility relocations for public works and road projects, or extension of the life of existing systems.
2. Fail to identify and plan for resource and infrastructure needs for the provision of water service to customers within the City of Madison and the Madison Water Utility's service area consistent with a reasonable planning period for that service.
3. Fail to coordinate Madison Water Utility activities and policies with the City of Madison's Comprehensive Plan and other relevant guidelines for community development.
4. Fail to consider participation with other governmental or private entities on regional major water infrastructure or water supply planning projects.

General Manager's interpretation and its justification:

This Executive Limitations policy requires that the Utility budget for, fund, prioritize, plan for, and construct the necessary system improvements to replace and sustain the Utility infrastructure for current and future generations. This policy recognizes that any and all long term planning shall be consistent with and comply with any and all City and regional plans. The Utility has the responsibility to establish, manage, and plan for the necessary water rates to fund all expenditures to meet identified capital and operational requirements. The Utility shall administer and prepare long-term facility and system wide comprehensive plans to identify system needs and funding priorities. The Utility shall also maintain routine regular condition assessments of all facilities to allow for the planned upgrade and/or replacement of facilities to assure the long term capacity of the system to meet established levels of service. The Board has identified four specific areas: 1) utility financial planning, 2) asset management, 3) water system master planning, and 4) City and Regional planning as key components of this policy.

Data directly addressing the General Manager's interpretation:

1. *Assure that required water rates fund the full cost of utility system capital improvements, and that those capital improvements are prioritized by risk analysis, reliability, operational or*

regulatory requirements, replacement of aging infrastructure, utility relocations for public works and road projects, or extension of the life of existing systems.

Madison Water Utility actively updates and refines its long term Capital Improvement Program (CIP) to meet short and long-term utility goals for infrastructure renewal, system growth, and to sustain established levels of service. The Utility's Asset Management Program provides for asset condition assessment, evaluates the likelihood of failure (LoF) and the consequence of failure (CoF) to develop and prioritize projects to renew and upgrade system assets. The goal of asset management is to identify the right projects, at the right time, for the right reasons, for the right price.

Madison Water Utility prepared its first Water Master Plan in 1964 to guide the development and expansion of the water system with the goal of meeting established levels of service to all customers. Madison's Water Master Plan identifies and prioritizes projects to help ensure that system operations and growth meet customer needs. The Water Master Plan is updated every 5 to 10 years and reviewed for every budget cycle and major project evaluation. The current comprehensive update of the Master Plan is in the final stages of completion.

Madison Water Utility prepares and submits an annual Capital Budget to the Mayor of Madison for inclusion in the City budget. The CIP budget for 2021 is based on the Utility's Water Master Plan, identified water quality issues, water quality regulations, level of service policies, the Utility's Asset Management Program, other known capital improvement needs, itemized maintenance of the system, and the Utility's financial capacity to fund the CIP.

A utility Financial Improvement Plan was developed and submitted to the Wisconsin PSC in January 2019. Subsequent financial and operating progress updates to the Financial Improvement Plan have been submitted pursuant to the requirements of the Wisconsin PSC Order, with the most recent update submitted in February 2021. This plan lays out the projected capital budget through 2026. The approved 2021 Water Utility Capital budget conforms to the submitted financial plan. The 2021 CIP continues the reduced spending plan to make Utility debt manageable over the long term. The capital budget was developed by Utility staff and reviewed by the Water Utility Board in June 2020, the Common Council approved the 2021 capital budget in November 2020.

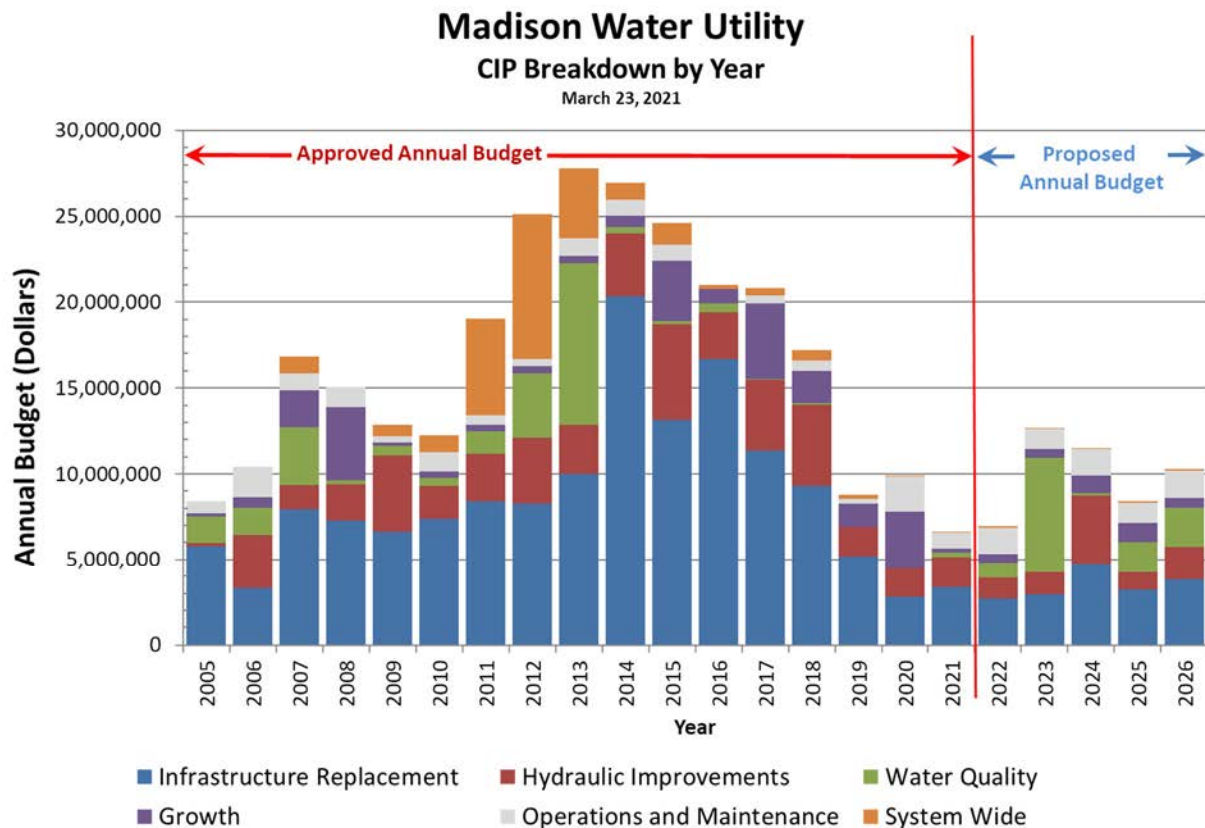
The 2021 CIP budget provides budget projections through the year 2026 for long term planning purposes. Internal Utility capital budget planning currently extends to the year 2030 and the Master Plan looked at capital needs through the year 2040.

Projects identified as required to meet minimum levels of service established by the Utility are included in the CIP. Projects include infrastructure renewal, hydraulic upgrades, water quality improvements, and facility projects identified and prioritized in the Water Master Plan and the Asset Management Program. Asset management techniques are continually refined to aide in the ranking and prioritization of identified projects.

As outlined in the Financial Improvement Plan, the Utility's total annual CIP budget capacity is based on the Utility's current water rate structure, the Utility's borrowing capacity and the debt load. Water rates and any projected rate increases are in compliance with Water Board policy

on the affordability of water and are reviewed and approved by the Wisconsin Public Service Commission. Water rate revenues cover anticipated capital expenditures and fund infrastructure renewal.

A copy of the approved Water Utility 2021 CIP Budget prepared in June 2020 and approved by the Madison Common Council in November 2020 is attached for your information and use. A graph illustrating the history of approved annual capital budgets from 2005 to 2021 and the projected annual budgets through the year 2026 is included below. The graph shows the total capital budget by year and also the breakdown by infrastructure replacement, hydraulic improvements, water quality improvements, growth, operations and maintenance, and system wide projects. This graph illustrates that the Utility has aggressively increased capital budget spending starting in 2006 as recommended by the Infrastructure Management Plan to replace and upgrade its aging system. This graph also illustrates that the Utility is making a significant investment in infrastructure replacement throughout the system. The need for investment in infrastructure renewal had outpaced the Utility’s debt financing system and a significant reduction in spending started in 2018/2019 and that condition remains in place. Major Capital MWU facility improvements were suspended in 2019 and remain suspended through 2021. The Financial Improvement Plan indicates a recovery in the years 2023 and 2024 with a projected 9% increase in water rates every two years. This is an effective rate increase of 4.5% per year.



Recommendations in the 2005 Infrastructure Management Plan indicated a need to significantly increase funding for infrastructure renewal. To meet infrastructure renewal needs identified in 2005, the Plan recommended that the CIP annual budget include \$2.5 million (2005 dollars) for facility projects and \$9.0 million (2005 dollars) for pipe replacement. That \$11.5 million recommendation combined with water quality and facility upgrade needs resulted in a total annual capital budget of up to \$20 to \$25 million. Reflecting that effort, funding of the CIP was increased from \$6 to \$8 million per year in 2004 and 2005 to a level over \$20 million per year from 2012 to 2017. With this increase in spending came an associated increase in debt. Total Utility debt grew to unacceptable levels. The current rate structure cannot sustain a \$20 million annual capital program without appropriate cash reserves in place. Significant rate increases or a change in the way projects are funded would be required to sustain a \$20 million annual CIP.

Planned 2021 CIP projects currently underway include approximately 1.6 miles of water main replacement and 0.5 miles of new main for hydraulic capacity improvements. The pipe lining program resumes in 2021 with the rehabilitation of 1.1 miles of existing water main. Some material purchase to improve the efficiency of future pipe lining projects has been included in the 2021 Capital Budget. It is noted that over the past decade only a small percentage of CIP spending has been for assets required to support growth or expansion of the system.

I report compliance.

- 2. Identify and plan for resource and infrastructure needs for the provision of water service to customers within the City of Madison and the Madison Water Utility's service areas consistent with a reasonable planning period for that service.*

Madison Water Utility has used a Water Master Plan for long term system planning since 1964. Routinely updated every 5 to 10 years, the Water Master Plan outlines the needed improvements to facilities and piping systems to support current demands and projected growth. The latest approved version of the full Master Plan is December 2006. A partial update of the plan, the East Side Water Supply Plan, was completed in 2012. The East Side Water Supply Project verified the need for several water supply projects and guided development of several water quality improvement projects.

Short Elliot and Hendrickson, a consultant hired to assist Engineering staff with the update of the Master Plan has recalibrated the model, incorporated AMI data, and updated water demand projections for the system. Using AMI data to update computer model demands, develop diurnal water demand curves, and evaluate seasonal peaking factors will be instrumental in improving system planning. Demand projections through the year 2040 include the latest water conservation trends. City Planning provided the Utility with population and employment projections to support future estimates of water needs. Extensive modeling on system reliability, impacts of water conservation, and asset criticality provides an excellent picture of long term capital needs. Information from the recently completed Utility Financial Improvement Plan will provide guidance for long term financial capacity based on the current rate structure. A 2020 and 2040 CIP will be developed as part of the Water Master Plan update,

currently in its final stages of completion. An executive overview of the updated Master Plan was presented to the Water Utility Board in November 2020.

To enhance distribution system analysis skills it would be a benefit to Madison Water to have distribution system modeling expertise on staff. This skillset would provide an excellent resource for system evaluation and project development. One potential option is to fill a currently vacant position, in late 2021 or 2022, to provide half-time computer modeling work to support long term planning and operational optimization.

The Infrastructure Management Plan completed in 2005 evaluated and documented the condition of the Utility's assets with the objective of planning and budgeting for infrastructure renewal. The information gathered during the preparation of the 2005 Infrastructure Management Plan is used to identify needs, prioritize maintenance and replacement, and assist in the development of the annual CIP budget.

Since completion of the 2005 Infrastructure Management Plan, the pipe replacement budget increased by over 350% as the Utility works to replace an aging water distribution system. Approximately 105 miles of pipe has been replaced since 2007 as a part of the program to update and renew the system infrastructure. The Asset Management Program replaced the Infrastructure Management Plan and will guide the infrastructure renewal program going forward.

The Asset Management Program (AMP) works to document the condition of all Utility assets and plan for maintenance or replacement. As a part of the AMP, Utility staff will be assessing the "business risk exposure" of each of the utility's assets. The business risk exposure (BRE) can best be understood as the probability an asset will fail (PoF) multiplied by the asset's consequence of failing (CoF). The BRE will then provide MWU with a way to A) rank potential capital improvements and B) prioritize maintenance strategies for existing facilities. All of this will assist the Utility in making data based decisions and maximize return on investment.

I report compliance.

- 3. Coordinate Madison Water Utility activities and policies with the City of Madison's Comprehensive Plan and other relevant guidelines for community development.*

Madison Water Utility works closely with the City Planning Department to ensure coordination and compliance with City long term planning efforts. Population estimates, development patterns and neighborhood plans are drawn from the City of Madison Planning Department's Comprehensive Plan and other planning documents. The Madison Planning Department recently updated the City Comprehensive Plan and is continually developing and updating neighborhood development plans. This coordination allows the Utility to support development throughout the City.

I report compliance.

4. *Participate with other governmental or private entities on regional major water infrastructure or water supply planning projects.*

During the past year, no major regional water infrastructure or water supply projects were developed or planned. Madison Water Utility participates on a working group with Madison Metropolitan Sewerage District and City of Madison Engineering Division to develop a comprehensive water sustainability plan. The Utility is dedicated to protecting the groundwater resource and promoting long term water conservation initiatives.

To address regional planning issues, Madison Water Utility participates in regional water groups as they develop and is an advocate of regional water supply planning. Utility management, water quality and engineering staff actively participate on Wisconsin Section of the American Water Works Association committees. WiAWWA committee participation facilitates the exchange of information and ideas with regard to drinking water industry issues and regulations.

I report compliance.

Attachments:

2021 Adopted Capital Budget

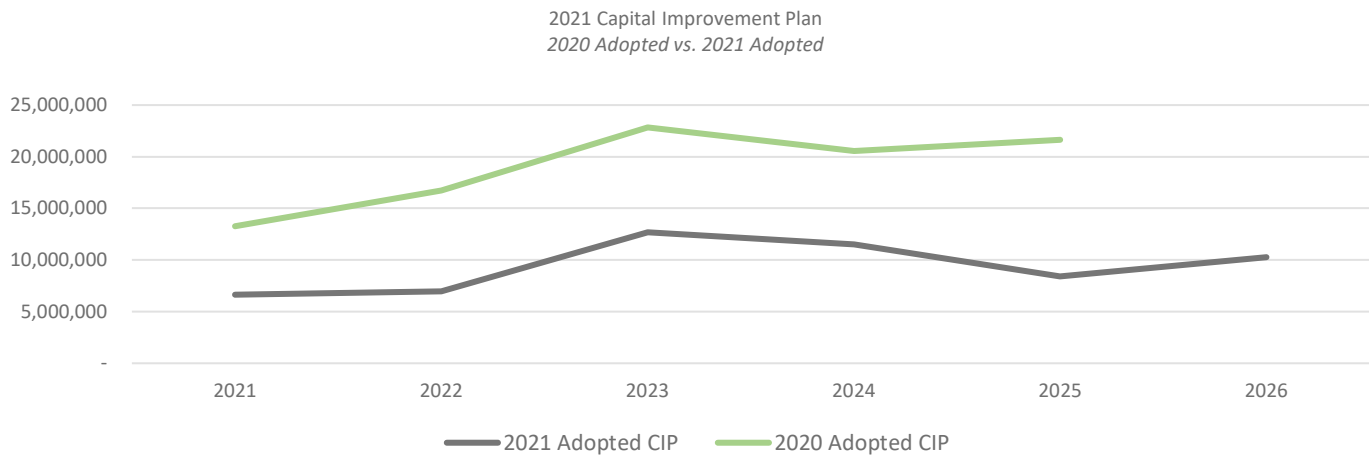
Water Utility

Capital Improvement Plan

Project Summary: Adopted Budget

	2021	2022	2023	2024	2025	2026
Booster Pump Station #213 Lakeview R	-	-	-	188,000	1,161,000	-
Chlorinators & Florinators Program	31,000	35,000	35,000	40,000	40,000	41,000
Unit Well #15	122,000	-	-	-	-	-
Unit Well #8 Reconstruction	120,000	-	-	88,000	1,778,000	2,292,000
Unit Well 12 Conversion to a Two Zone	-	-	263,000	3,754,000	41,000	-
Unit Well Rehab Program	240,000	330,000	247,000	340,000	254,000	350,000
UW#23 Abandonment	50,000	-	-	-	-	-
Water Hydrants Program	350,000	350,000	350,000	350,000	350,000	350,000
Water Mains - New	152,000	159,000	166,000	1,429,000	178,000	185,000
Water Mains Replace Rehab Improve -	1,208,000	1,586,000	1,286,000	335,000	362,000	378,000
Water Mains Replace Rehab Improve -	1,110,000	983,000	1,111,000	1,036,000	1,077,000	1,419,000
Water Mains Replace Rehab Improve -	1,848,000	392,000	593,000	1,662,000	1,169,000	2,917,000
Water Meter and Fixed Network Progr:	500,000	513,000	526,000	539,000	552,000	566,000
Water Utility Facility Improvements	467,000	1,167,000	1,152,000	1,119,000	1,153,000	1,187,000
Water Utility Vehicles & Equipment	344,000	521,000	246,000	539,000	256,000	557,000
Water Valve Cut-In Program	16,000	16,000	17,000	18,000	19,000	20,000
Well 14 Mitigation	82,000	-	-	-	-	-
Well 19 Iron and Manganese Filter	-	891,000	6,691,000	81,000	-	-
Total	\$ 6,640,000	\$ 6,943,000	\$ 12,683,000	\$ 11,518,000	\$ 8,390,000	\$ 10,262,000

Changes from 2020 CIP



Major Changes

- **Booster Pump Station #213 Lakeview Reconstruction**
Project moved from 2025/26 to 2024/25
- **Unit Well #15**
Project moved from 2021-2025 to 2021
- **Unit Well #8 Reconstruction**
Project budget increased to include full project scope in the CIP (\$4.2m)
Project moved from 2025 to 2021 and 2023-2026
- **UW#23 Abandonment**
Project added to CIP in 2021 (\$50k)
- **Water Utility Facility Improvements**
Program budget increased in 2022-2025 based on scheduled facility improvements (\$2.0m)
Common Council Amendment #9 added \$50,000 for Crawley Station Improvements (Unit Well 17) in 2021

- Well 14 Mitigation
Finance Committee Amendment #12 moved this project from 2021 to 2022
- Well 19 Iron and Manganese Filter
Project moved from 2021-2023 to 2022-2024
- Program Budget Reductions
Various program budgets reduced across CIP based on goals outlined in financial plan submitted to Public Service Commission
Program budgets reduced include: Water Hydrants (\$1.3m), New Water Mains (\$12.2m), Water Main Replacements (\$12.4m), Water Main Pipe Lining (\$4.3m), Fixed Network (\$873k), and Vehicle & Equipment Purchases (\$1.5m)

Water Utility

Budget Overview

2021 CIP by Expenditure Type

	2021	2022	2023	2024	2025	2026
Building	474,000	1,688,000	7,775,000	4,956,000	2,576,000	897,000
Land	-	-	-	-	200,000	-
Machinery and Equipment	1,432,000	1,769,000	1,385,000	1,732,000	2,459,000	1,804,000
Water Network	4,734,000	3,486,000	3,523,000	4,830,000	3,155,000	7,561,000
Total	\$ 6,640,000	\$ 6,943,000	\$ 12,683,000	\$ 11,518,000	\$ 8,390,000	\$ 10,262,000

2021 CIP by Funding Source

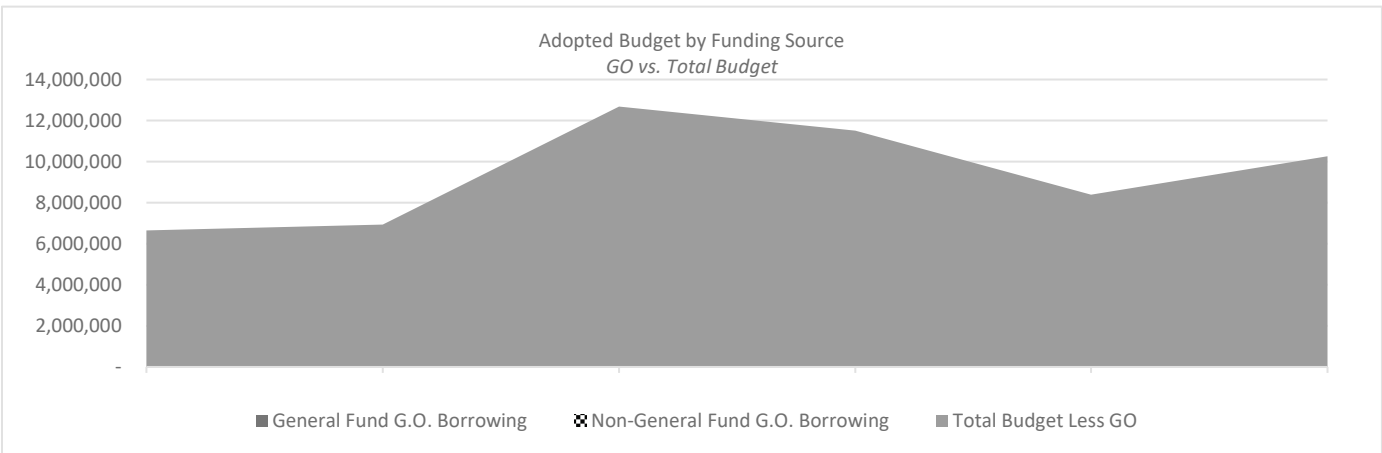
	2021	2022	2023	2024	2025	2026
Reserves Applied	1,998,000	2,932,000	2,573,000	2,945,000	2,624,000	3,071,000
Revenue Bonds	4,642,000	4,011,000	10,110,000	8,573,000	5,766,000	7,191,000
Total	\$ 6,640,000	\$ 6,943,000	\$ 12,683,000	\$ 11,518,000	\$ 8,390,000	\$ 10,262,000

Borrowing Summary

	2021	2022	2023	2024	2025	2026
Borrowing Schedule						
General Fund G.O. Borrowing	-	-	-	-	-	-
Non-General Fund G.O. Borrowing	-	-	-	-	-	-
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Annual Debt Service

General Fund G.O. Borrowing	-	-	-	-	-	-
Non-General Fund G.O. Borrowing	-	-	-	-	-	-



Water Utility

Project Overview

Project	Booster Pump Station #213 Lakeview Reconstruction	Project #	12441
Citywide Element	Green and Resilient	Project Type	Project

Project Description

This project is for reconstructing the Lake View Booster Pumping Station on Madison's north side. The goal of the project is to meet fire fighting requirements and expansion in Zone 5. The project's scope includes adding a generator to ensure reliability of the pumping station in the event of a power outage and increasing pump capacity to 1,200 gallons per minute. Design is scheduled for 2024; construction is planned for 2025.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	-	-	-	188,000	1,161,000	-
TOTAL	\$ -	\$ -	\$ -	\$ 188,000	\$ 1,161,000	\$ -

Project	Chlorinators & Florinators Program	Project #	12386
Citywide Element	Green and Resilient	Project Type	Program

Project Description

This program maintains the City's chlorinator and florinator equipment. The goal of this program is to reduce failures and service interruptions for safe and reliable water. Projects funded in this program rebuild and replace chlorinator and florinator equipment on a 10-year replacement cycle. Specific projects for 2021 have not been identified.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	31,000	35,000	35,000	40,000	40,000	41,000
TOTAL	\$ 31,000	\$ 35,000	\$ 35,000	\$ 40,000	\$ 40,000	\$ 41,000

Project	Unit Well #15	Project #	12443
Citywide Element	Green and Resilient	Project Type	Project

Project Description

This project is for evaluating options and identifying a cost-effective solution to address the east-side water supply issue caused by per- and polyfluoroalkyl substances (PFAS) at Unit Well #15. The goal of the project is to prepare the City to address an emerging water contaminate of public health concern and provide an adequate water supply that achieves water quality objectives. The project's scope includes public engagement, engineering work to evaluate treatment alternatives, and potential mitigation. The project is scheduled for 2021. This project is projected to result in net operating savings of \$22,000 from identifying more cost-effective treatment for PFAS contaminants.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	122,000	-	-	-	-	-
TOTAL	\$ 122,000	\$ -	\$ -	\$ -	\$ -	\$ -

Project	Unit Well #8 Reconstruction	Project #	12440
Citywide Element	Green and Resilient	Project Type	Project

Project Description

This project is for reconstructing Unit Well #8 on Madison's east side. The goal of the project is to reduce iron and manganese levels via filtration upgrades and to expand capacity to a three zone well. The project's scope includes public engagement, property acquisition, and pipeline improvements. A sentinel well will be constructed in 2021; public engagement and property acquisition are planned in 2025; pipeline improvements are planned for 2026.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	120,000	-	-	88,000	1,778,000	2,292,000
TOTAL	\$ 120,000	\$ -	\$ -	\$ 88,000	\$ 1,778,000	\$ 2,292,000

Project	Unit Well 12 Conversion to a Two Zone Well	Project #	10452
Citywide Element	Green and Resilient	Project Type	Project

Project Description

This project is for rebuilding and expanding Well #12 located on South Whitney Way. The goal of the project is to provide water supply capacity to five existing pressure zones that represent the majority of the City's west side. The project's scope will include adding system flexibility that improves service reliability and maximizes water supply. Funding in 2023 is for design; construction is planned for 2024. Ongoing operating costs are estimated to be \$21,000 to support electrical power.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	-	-	263,000	3,754,000	41,000	-
TOTAL	\$ -	\$ -	\$ 263,000	\$ 3,754,000	\$ 41,000	\$ -

Project	Unit Well Rehab Program	Project #	12341
Citywide Element	Green and Resilient	Project Type	Program

Project Description

This program is for the 10-year unit well upgrade projects as recommended by the Wisconsin Department of Natural Resources (WI DNR). The goal of this program is to ensure that all unit wells are functioning at an efficient level and to reduce annual maintenance costs. The project scope includes pulling and inspecting pumps every 10 years. The Water Utility maintains a list of all unit wells and their corresponding maintenance schedule. The unit wells selected for maintenance each year are taken from this list. Funding in 2021 is for unit wells 15, 20, and 24.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	240,000	330,000	247,000	340,000	254,000	350,000
TOTAL	\$ 240,000	\$ 330,000	\$ 247,000	\$ 340,000	\$ 254,000	\$ 350,000

Project
Citywide Element

**UW#23 Abandonment
Green and Resilient**

Project #
Project Type

**13063
Project**

Project Description

This project is for abandoning UW#23. The goal is to safely close an outdated and poorly performing well with poor water quality. The project's scope includes filling and sealing the municipal well in a safe manner while complying with state code. The project is scheduled for 2021.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	50,000	-	-	-	-	-
TOTAL	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -

Project
Citywide Element

**Water Hydrants Program
Neighborhoods and Housing**

Project #
Project Type

**12385
Program**

Project Description

This program is for maintaining the City's network of water hydrants. The goal of this program is to maintain reliable service for fire suppression. Projects funded in this program include replacing, raising, or relocating aging fire hydrants. Specific projects for 2021 are not yet identified.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	350,000	350,000	350,000	350,000	350,000	350,000
TOTAL	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000

Project
Citywide Element

**Water Mains - New
Green and Resilient**

Project #
Project Type

**12507
Program**

Project Description

This program is for installing new water mains throughout the City. The goal of the program is to strengthen and expand the existing distribution system, improve water pressure, improve fire protection, allow transfer of water between pressure zones, and to serve the growing areas of the City. Projects funded in this program include improving water system hydraulics, pressures, fire protection, and supporting ongoing development and water supply/facility improvements. Planned projects in 2021 include hydraulic improvements.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	152,000	159,000	166,000	1,429,000	178,000	185,000
TOTAL	\$ 152,000	\$ 159,000	\$ 166,000	\$ 1,429,000	\$ 178,000	\$ 185,000

Project **Water Mains Replace Rehab Improve - Pavement Manage** Project # **11894**
 Citywide Element **Green and Resilient** Project Type **Program**

Project Description

This program is for replacing existing water mains in conjunction with the repaving of roads as part of the City's Engineering-Major Streets Pavement Management program. The goal of the program is to update the water infrastructure and reduce the risk of pipe failure. Projects funded in this program replace or rehabilitate aging pipes to renew and maintain the system. Planned projects in 2021 include: Old Middleton Road/Craig Avenue, West Washington Avenue, Kroncke Drive/Lanett Circle/Tanager Trail, North Brooks Street/Fahrenbrook Court/College Court, and hydraulic improvements.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	1,208,000	1,586,000	1,286,000	335,000	362,000	378,000
TOTAL	\$ 1,208,000	\$ 1,586,000	\$ 1,286,000	\$ 335,000	\$ 362,000	\$ 378,000

Project **Water Mains Replace Rehab Improve - Pipe Lining** Project # **11892**
 Citywide Element **Green and Resilient** Project Type **Program**

Project Description

This program is for cured-in-place-pipe lining (CIPP) to improve the quality of existing pipes in the water network throughout the City. The goal of the program is to lengthen the useful life of pipes at a lower cost than replacing the pipe. Projects funded in this program include lining pipes to rehabilitate existing pipes, as well as funding temporary water service during projects and associated storage. Projects planned for 2021 include rehabilitating approximately 3,100 feet of existing deteriorated water mains.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	1,110,000	983,000	1,111,000	1,036,000	1,077,000	1,419,000
TOTAL	\$ 1,110,000	\$ 983,000	\$ 1,111,000	\$ 1,036,000	\$ 1,077,000	\$ 1,419,000

Project **Water Mains Replace Rehab Improve - Reconstruct Streets** Project # **11893**
 Citywide Element **Green and Resilient** Project Type **Program**

Project Description

This program is for replacing existing water mains in conjunction with the reconstruction of roads as part of the City's Engineering-Major Streets Reconstruct Streets program. The goal of the program is to update the water infrastructure and diminish the risk of pipe failure. Projects funded in this program rehabilitate or replace existing pipes under the City's streets. Planned projects in 2021 include: Helena/Russell/Jenifer Streets, Starkweather Drive, Hill Crest Drive/Standish Court/Alden Drive, Davies Street/Major Avenue/Dempsey Road/Maher Avenue, Pontiac Trail/Nokomis Court/Rosewood Circle/Boston Court, and hydraulic improvements.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	1,848,000	392,000	593,000	1,662,000	1,169,000	2,917,000
TOTAL	\$ 1,848,000	\$ 392,000	\$ 593,000	\$ 1,662,000	\$ 1,169,000	\$ 2,917,000

Project	Water Meter and Fixed Network Program	Project #	12340
Citywide Element	Green and Resilient	Project Type	Program

Project Description

This program is for the water meter and fixed network advanced metering infrastructure (AMI) improvements. The goal of the program is to maximize the accuracy of the municipal services statements issued to customers. This project funds testing and replacement of water meters on the Public Service Commission's prescribed 20-year schedule. Funding in 2021 is to replace a portion of meters based on the citywide replacement schedule.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	500,000	513,000	526,000	539,000	552,000	566,000
TOTAL	\$ 500,000	\$ 513,000	\$ 526,000	\$ 539,000	\$ 552,000	\$ 566,000

Project	Water Utility Facility Improvements	Project #	10440
Citywide Element	Green and Resilient	Project Type	Program

Project Description

This program is for repairing and upgrading Water Utility facilities. The goal of the program is to maintain the facilities for reliable service and reducing emergency repairs. Projects funded in this program include building, mechanical, and safety upgrades. Funding in 2021 is for SCADA system upgrades and expansion, fiber optic installation and upgrade, deep well variable frequency drive (VFD) installs, facility safety and security upgrades, and other miscellaneous upgrades.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	467,000	1,167,000	1,152,000	1,119,000	1,153,000	1,187,000
TOTAL	\$ 467,000	\$ 1,167,000	\$ 1,152,000	\$ 1,119,000	\$ 1,153,000	\$ 1,187,000

Project	Water Utility Vehicles & Equipment	Project #	12339
Citywide Element	Green and Resilient	Project Type	Program

Project Description

This program is for the Water Utility's annual vehicle and equipment replacements and additions. The goal of this program is to provide reliable vehicles and equipment for Water Utility's operations. Replacement schedules are based on age and mileage of the vehicles and equipment. Projects funded in this program range from upgrades of electrical vehicles to purchasing updated equipment to support Water Utility services. In 2021, funds will be used to purchase four new vehicles, a new towable lift, and other various tools and equipment, as well as to modernize mapping and service equipment.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	344,000	521,000	246,000	539,000	256,000	557,000
TOTAL	\$ 344,000	\$ 521,000	\$ 246,000	\$ 539,000	\$ 256,000	\$ 557,000

Project
Citywide Element

Water Valve Cut-In Program
Green and Resilient

Project #
Project Type

12387
Program

Project Description

This program is for installing new valve cut-ins to the existing water infrastructure. The goal of this program is to eliminate areas of the city where water service is negatively impacted during water system maintenance and repair. Specific projects for 2021 have not been identified.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Reserves Applied	16,000	16,000	17,000	18,000	19,000	20,000
TOTAL	\$ 16,000	\$ 16,000	\$ 17,000	\$ 18,000	\$ 19,000	\$ 20,000

Project
Citywide Element

Well 14 Mitigation
Green and Resilient

Project #
Project Type

11900
Project

Project Description

This project is for studying potential improvements to Well 14 on University Avenue near Spring Harbor on the City's west side. The goal of this project is to determine the source of increasing chloride concentration levels at Well 14 and improvements that may mitigate these increases. The project's scope includes public engagement and engineering costs to study the increasing salt levels in 2022. Ongoing operating costs are estimated to be \$250,000 annually for a 0.5 FTE and utility costs.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	82,000	-	-	-	-	-
TOTAL	\$ 82,000	\$ -	\$ -	\$ -	\$ -	\$ -

Project
Citywide Element

Well 19 Iron and Manganese Filter
Green and Resilient

Project #
Project Type

10448
Project

Project Description

This project is for a new iron, manganese, and radium treatment system at Well 19 located on Lake Mendota Drive on the City's west side. The goal of this project is to improve water quality in the area. The project's scope includes a full system replacement that can meet water quality standards. Funding in 2022 is for public engagement; construction is planned for 2023. Ongoing operating costs are projected to be \$31,000 for power and water treatment chemicals, as well as \$8,700 for an existing staff position.

Project Budget by Funding Source

	2021	2022	2023	2024	2025	2026
Revenue Bonds	-	891,000	6,691,000	81,000	-	-
TOTAL	\$ -	\$ 891,000	\$ 6,691,000	\$ 81,000	\$ -	\$ -

Water Utility

2021 Appropriation Schedule

2021 Appropriation

Adopted Budget

	Request	Executive	GO Borrowing	Other	Total
Chlorinators & Florinators Program	31,000	31,000	-	31,000	31,000
Unit Well #15	122,000	122,000	-	122,000	122,000
Unit Well #8 Reconstruction	120,000	120,000	-	120,000	120,000
Unit Well Rehab Program	240,000	240,000	-	240,000	240,000
UW#23 Abandonment	50,000	50,000	-	50,000	50,000
Water Hydrants Program	350,000	350,000	-	350,000	350,000
Water Mains - New	152,000	152,000	-	152,000	152,000
Water Mains Replace Rehab Improve - Pavement Management	1,208,000	1,208,000	-	1,208,000	1,208,000
Water Mains Replace Rehab Improve - Pipe Lining	1,110,000	1,110,000	-	1,110,000	1,110,000
Water Mains Replace Rehab Improve - Reconstruct Streets	1,848,000	1,848,000	-	1,848,000	1,848,000
Water Meter and Fixed Network Program	500,000	500,000	-	500,000	500,000
Water Utility Facility Improvements	417,000	417,000	-	467,000	467,000
Water Utility Vehicles & Equipment	344,000	344,000	-	344,000	344,000
Water Valve Cut-In Program	16,000	16,000	-	16,000	16,000
Well 14 Mitigation	-	-	-	82,000	82,000
Total 2021 Appropriation	\$ 6,508,000	\$ 6,508,000	\$ -	\$ 6,640,000	\$ 6,640,000