

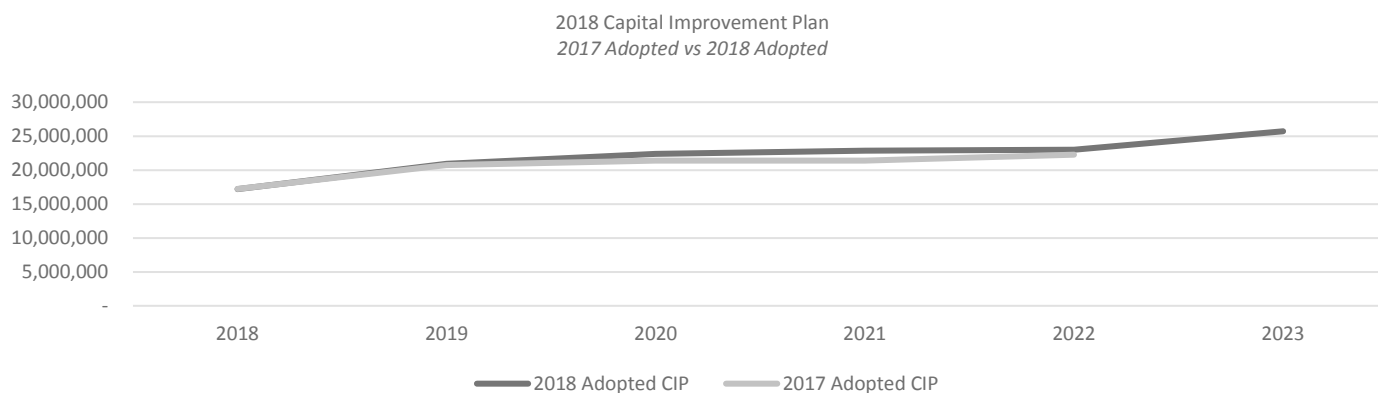
# Water Utility

## Capital Improvement Plan

### Project Summary

	2018	2019	2020	2021	2022	2023
Booster Pump Station 109	-	284,000	2,364,000	744,000	-	-
Booster Station 106 Reconstruction	-	-	842,000	-	-	-
Booster Pump Station 129 Reconstruct.	334,000	3,069,000	866,000	793,000	-	-
Far West Elevated Reservoir	780,000	-	-	1,240,000	-	-
Lakeview Reservoir Reconstruction	-	161,000	2,445,000	-	-	-
Unit Well 12 Conversion to a Two Zone Well	3,262,000	-	-	-	-	1,608,000
Unit Well No. 8 Reconstruction	110,000	-	-	-	-	-
Voc Air Stripper At Well 18	-	-	-	-	-	473,000
Water Mains - New	1,850,000	1,500,000	2,386,000	2,952,000	3,558,000	3,866,000
Water Mains - Pavement Management	4,400,000	4,576,000	4,759,000	4,949,000	5,147,000	5,353,000
Water Mains - Pipe Lining	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000	1,217,000
Water Mains - Reconstruct Streets	4,250,000	4,420,000	4,797,000	4,781,000	4,972,000	5,171,000
Water Utility Facility Improvements	1,207,000	1,277,000	1,403,000	1,239,000	2,258,000	1,577,000
Well 14 Mitigation	-	-	-	-	801,000	4,160,000
Well 19 Iron/Manganese Filter	-	4,081,000	-	-	-	-
Well 24 Iron and Manganese Filter	-	-	-	-	-	572,000
Well 28 Iron and Manganese Filter	-	-	577,000	4,408,000	-	-
Well 30 Iron and Manganese Filter	-	-	-	600,000	4,584,000	-
Well 7 Area Hydraulic Improvements	-	-	866,000	-	-	-
Zone 4 Fire Flow Supply Augment	-	511,000	-	-	-	575,000
Zones 7 & 8 Supply: Whitney Way	-	-	-	15,000	495,000	1,142,000
<b>Total</b>	<b>\$ 17,193,000</b>	<b>\$ 20,919,000</b>	<b>\$ 22,387,000</b>	<b>\$ 22,846,000</b>	<b>\$ 22,985,000</b>	<b>\$ 25,714,000</b>

### Changes from 2017 CIP



- Booster Pump Station 109 (Spaanem Ave): Project construction deferred from 2018 to 2020 (\$2.36m)
- Booster Station 106 Reconstruction: Project deferred from 2019 to 2020 (\$0.84m)
- BPS 129 Reconstruction: Project construction advanced from 2020 to 2019 (\$3.06m)
- Unit Well 12 Conversion to a Two Zone Well: Entire project budget moved into 2018 from 2019 (\$3.62m)
- Water Mains Program separated into three (Pavement Management, Reconstruct Streets, and Pipe-Lining)
- Well 30 Iron and Manganese Filter: Project budget increased (\$2.38m)

# Water Utility

## Budget Overview

### 2018 CIP by Expenditure Type

	2018	2019	2020	2021	2022	2023
Building	4,913,000	8,540,000	5,589,000	6,262,000	7,888,000	7,924,000
Land	-	-	-	-	250,000	-
Water Network	12,280,000	12,379,000	16,798,000	16,584,000	14,847,000	17,790,000
<b>Total</b>	<b>\$ 17,193,000</b>	<b>\$ 20,919,000</b>	<b>\$ 22,387,000</b>	<b>\$ 22,846,000</b>	<b>\$ 22,985,000</b>	<b>\$ 25,714,000</b>

### 2018 CIP by Funding Source

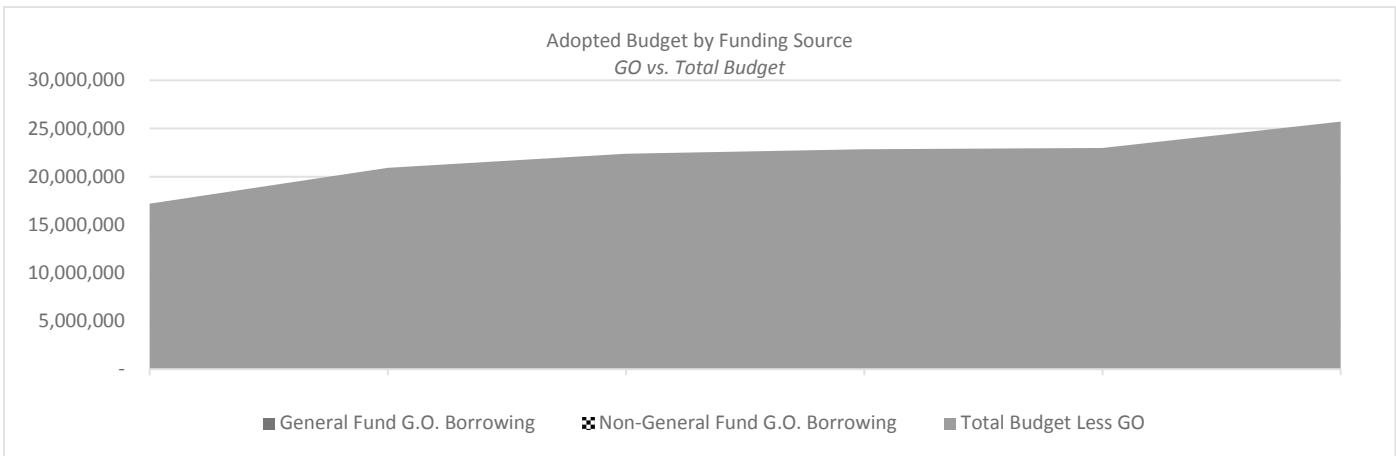
	2018	2019	2020	2021	2022	2023
Revenue Bonds	17,193,000	20,919,000	22,387,000	22,846,000	22,985,000	25,714,000
<b>Total</b>	<b>\$ 17,193,000</b>	<b>\$ 20,919,000</b>	<b>\$ 22,387,000</b>	<b>\$ 22,846,000</b>	<b>\$ 22,985,000</b>	<b>\$ 25,714,000</b>

### Borrowing Summary

	2018	2019	2020	2021	2022	2023
<b>Borrowing Schedule</b>						
General Fund G.O. Borrowing	-	-	-	-	-	-
Non-General Fund G.O. Borrowing	-	-	-	-	-	-
<b>Total</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

### Annual Debt Service

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



# Water Utility

## Project Overview

**Project** **Booster Pump Station 109 (Spaanem Ave)** **Project #** **11605**

*Project Description*

This project will construct a booster pumping station at Spaanem Avenue on the City's east side. The goal of the project is to facilitate the movement of water from an area with excess supply to an area that is undersupplied. The project will improve overall system reliability, increase operational flexibility, and improve service to system consumers in the service area. Construction is planned for 2020.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	284,000	2,364,000	744,000	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 284,000</b>	<b>\$ 2,364,000</b>	<b>\$ 744,000</b>	<b>\$ -</b>	<b>\$ -</b>

**Project** **Booster Station 106 Reconstruction** **Project #** **10444**

*Project Description*

This project improves the piping network at Booster Station #106 near Tokay Blvd and Midvale Blvd. The goal of the project is to enhance system reliability, improve fire protection, and improve the hydraulic capacity in the Sunset Hills area. Booster pumping station 106 was reconstructed in 2013 and provides a key water supply point to the west side. Construction of the piping network improvements is planned for 2020.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	-	842,000	-	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 842,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**Project** **Booster Pump Station 129 Reconstruction** **Project #** **17601**

*Project Description*

This project will reconstruct and upgrade booster pump station 129 on the City's northeast side. The goal of the project is to increase water transfer capacity from Zone 6E to Zone 3 in that area. This project will replace the temporary pump station constructed on the Well 29 site in 1990, and provide additional water supply needed on the far east side of Madison. Construction is planned to begin in 2019 and be completed in 2021.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	334,000	3,069,000	866,000	793,000	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 334,000</b>	<b>\$ 3,069,000</b>	<b>\$ 866,000</b>	<b>\$ 793,000</b>	<b>\$ -</b>	<b>\$ -</b>

**Project** **Far West Elevated Reservoir** **Project #** **10445**

*Project Description*

This project will construct a reservoir on Madison's far west side also known as the Blackhawk Reservoir. The goal of the project is to add one million gallons of elevated water storage capacity to the far west side of Madison allowing for development to occur, improve system reliability, increase firefighting capacity, and increase emergency water reserves to the area. Planning will begin in 2018; construction is anticipated in 2021.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	780,000	-	-	1,240,000	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 780,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,240,000</b>	<b>\$ -</b>	<b>\$ -</b>



**Project Water Mains - New Project # 10856**

*Project Description*

This program installs new water mains throughout the City. The goal of the program is to help 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. Newly installed mains include hydraulic improvements consistent with the Water Utility Master Plan. Projects planned for 2018 include Cottage Grove Road at Interstate 39/94, and CTH M near Mckee Road.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	450,000	1,850,000	1,500,000	2,386,000	2,952,000	3,558,000	3,866,000
<b>TOTAL</b>	<b>\$ 450,000</b>	<b>\$ 1,850,000</b>	<b>\$ 1,500,000</b>	<b>\$ 2,386,000</b>	<b>\$ 2,952,000</b>	<b>\$ 3,558,000</b>	<b>\$ 3,866,000</b>

**Project Water Mains Replace Rehab Improve - Pavement Project # 10432**

**Management**

*Project Description*

This program replaces and upgrades 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 to reduce the risk of pipe failure. The program aligns with the Water Utility's goal to replace or rehabilitate over 400 miles of aging pipe within the City over a 40-year period to renew and maintain the system.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	4,400,000	4,576,000	4,759,000	4,949,000	5,147,000	5,353,000
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 4,400,000</b>	<b>\$ 4,576,000</b>	<b>\$ 4,759,000</b>	<b>\$ 4,949,000</b>	<b>\$ 5,147,000</b>	<b>\$ 5,353,000</b>

**Project Water Mains Replace Rehab Improve - Pipe Lining Project # 12999**

*Project Description*

This program provides 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 the pipes at a lower cost than replacing the pipe. The program measures the miles of pipe that are rehabilitated using the lining method. Locations for CIPP lining are evaluated on an annual basis.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000	1,217,000
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 1,000,000</b>	<b>\$ 1,040,000</b>	<b>\$ 1,082,000</b>	<b>\$ 1,125,000</b>	<b>\$ 1,170,000</b>	<b>\$ 1,217,000</b>

**Project Water Mains Replace Rehab Improve - Reconstruct Project # 12998**

**Streets**

*Project Description*

This program replaces and upgrades 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 to diminish the risk of pipe failure. The program aligns with the Water Utility's goal to replace or rehabilitate over 400 miles of aging pipe within the City over a 40-year period to renew and maintain the system.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	4,250,000	4,420,000	4,797,000	4,781,000	4,972,000	5,171,000
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 4,250,000</b>	<b>\$ 4,420,000</b>	<b>\$ 4,797,000</b>	<b>\$ 4,781,000</b>	<b>\$ 4,972,000</b>	<b>\$ 5,171,000</b>



**Project Well 28 Iron and Manganese Filter Project # 17604**

*Project Description*

This project will construct an iron and manganese filter at Well 28 at Old Sauk Road on the City’s west side. The goal of the project is to align iron and manganese levels with Water Utility standards as well as reduce the colored water and customer complaints in the area. The project will be measured by monitoring water quality and tracking the frequency of system flushing. Planning will begin in 2020; construction is anticipated in 2021.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	-	577,000	4,408,000	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 577,000</b>	<b>\$ 4,408,000</b>	<b>\$ -</b>	<b>\$ -</b>

**Project Well 30 Iron and Manganese Filter Project # 17603**

*Project Description*

This project will construct an iron and manganese filter at Well 30 at Moorland Road on the City’s southeast side. The goal of the project is to align iron and manganese levels with Water Utility standards as well as reduce the colored water and customer complaints in the area. Progress will be measured by monitoring water quality and tracking the frequency of system flushing. Planning will begin in 2021, construction is anticipated in 2022.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	-	-	600,000	4,584,000	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 600,000</b>	<b>\$ 4,584,000</b>	<b>\$ -</b>

**Project Well 7 Area Hydraulic Improvements Project # 17602**

*Project Description*

This project will provide for hydraulic capacity improvements to the distribution system at Well 7 near Schlimgen Avenue on the City’s north side. Improvements include hydraulic capacity expansion and piping enhancements. The goal of the project is to improved water quality, water distributions, and fire protection in the N. Sherman Avenue and Schlimgen area. Construction is planned for 2020.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	-	866,000	-	-	-
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 866,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**Project Zone 4 Fire Flow Supply Augment Project # 10434**

*Project Description*

This project will continue the construction of Unit Well 31 at Tradewinds Parkway on the City’s southeast side. The project will improve fire protection capacity to the far southeast corner of the Utility’s current service area. Construction of the first phase of this project began in 2015 to build a ground storage reservoir. Improvements to the distribution system are planned with pipe installation at Dutch Mill Road in 2019 and Voges Road in 2023.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	511,000	-	-	-	575,000
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 511,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 575,000</b>

**Project Zones 7 & 8 Supply: Whitney Way Project # 10438**

*Project Description*

This project will construct an additional well to serve Madison’s west side near the Whitney Way at Mineral Point Road area. The goal of the project is to provide the necessary capacity to the area to accommodate the growth in demand for water supply that has occurred. The well will provide the opportunity to supply five different pressure zones which encompasses the majority of west side of the City. Construction is planned for 2022 and 2023.

*Project Budget by Funding Source*

	Reauth	2018	2019	2020	2021	2022	2023
Revenue Bonds	-	-	-	-	15,000	495,000	1,142,000
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 15,000</b>	<b>\$ 495,000</b>	<b>\$ 1,142,000</b>

# Water Utility

## 2018 Appropriation Schedule

### 2018 Appropriation

### Adopted Budget

	Request	Executive	GO Borrowing	Other	Total
BPS 129 Reconstruction	334,000	334,000	-	334,000	334,000
Far West Elevated Reservoir	780,000	780,000	-	780,000	780,000
Unit Well 12 Conversion to a Two Zone Well	3,262,000	3,262,000	-	3,262,000	3,262,000
Unit Well No. 8 Reconstruction	110,000	110,000	-	110,000	110,000
Water Mains - New	1,850,000	2,390,000	-	1,850,000	1,850,000
Water Mains Replace Rehab Improve - Pavement Management	4,400,000	4,400,000	-	4,400,000	4,400,000
Water Mains Replace Rehab Improve - Pipe Lining	1,000,000	1,000,000	-	1,000,000	1,000,000
Water Mains Replace Rehab Improve - Reconstruct Streets	4,250,000	4,250,000	-	4,250,000	4,250,000
Water Utility Facility Improvements	1,207,000	1,207,000	-	1,207,000	1,207,000
<b>Total</b>	<b>\$ 17,193,000</b>	<b>\$ 17,733,000</b>	<b>\$ -</b>	<b>\$ 17,193,000</b>	<b>\$ 17,193,000</b>

### Reauthorized Appropriation

	GO Borrowing	Other	Total
Unit Well No. 8 Reconstruction	-	155,000	155,000
Water Mains - New	-	450,000	450,000
<b>Total</b>	<b>\$ -</b>	<b>\$ 605,000</b>	<b>\$ 605,000</b>

### Total 2018 Appropriation

	<b>\$ -</b>	<b>\$ 17,798,000</b>	<b>\$ 17,798,000</b>
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