### **Capital Improvement Plan**

Executive Budget

Agency: Water Utility

### **Project Summary**

	2017	2018	2019	2020	2021	2022
Booster Pump Station 109 (Spaanem Ave	81,000	1,725,960	617,000	-	-	-
Booster Station #106 Reconstruction	-	-	818,000	-	-	-
BPS 129 Reconstruction	-	-	131,000	2,484,840	574,000	-
Far West Elevated Reservoir	4,011,000	-	-	-	1,309,000	-
Lakeview Reservoir Reconstruction	858,000	-	60,000	1,759,800	-	-
Paterson St Remodel	4,325,000	-	-	-	-	-
Pump Station Improvements	877,000	1,000,300	1,070,600	1,196,900	1,010,200	1,061,600
Unit Well 12 Conversion to a Two Zone W	102,000	2,373,280	1,017,120	-	-	-
Unit Well No. 8 Reconstruction	50,000	110,000	-	-	-	-
Voc Air Stripper At Well 18	-	-	-	-	5,000	255,000
Water Mains - New	1,000,000	1,100,000	1,924,000	2,067,000	2,222,000	2,391,000
Water Mains Replace Rehab Improve	8,500,000	10,000,000	10,730,000	11,522,000	12,129,000	12,776,000
Water Utility Facility Improvements	168,000	235,000	1,120,000	660,000	617,000	1,341,000
Well 19 Iron/Manganese Filter	-	678,800	2,974,400	-	-	-
Well 28 Iron and Manganese Filter	-	-	-	107,660	2,632,320	1,107,660
Well 30 Iron and Manganese Filter	-	=	-	-	330,000	2,200,000
Well 7 Area Hydraulic Improvements	-	-	-	842,000	-	-
Zone 4 Fire Flow Supply Augment	5,512,500	=	271,000	697,000	-	-
Zones 7 & 8 Supply: Whitney Way	-	-	-	65,000	555,000	1,134,000
otal \$	25,484,500 \$	17,223,340 \$	20,733,120 \$	21,402,200 \$	21,383,520 \$	22,266,260

### Changes from 2016 CIP

### Project

Booster Pump Station 109 (Spaanem Ave) Booster Station #106 Reconstruction BPS 129 Reconstruction Far West Elevated Reservoir Lakeview Reservoir Reconstruction **Pump Station Improvements** Unit Well No. 8 Reconstruction Water Mains Replace Rehab Improve Water Utility Facility Improvements Well 19 Iron/Manganese Filter Well 28 Iron and Manganese Filter Well 29 Filter Capacity Expansion Well 30 Iron and Mangnaese Filter Well 7 Area Hydraulic Improvements Zone 4 Fire Flow Supply Augment Zones 7 & 8 Supply: Whitney Way

### Change

Project added to CIP
Project budget decreased
Project added to CIP
Project completion deferred 1 year
Project construction deferred 2 years
Project deferred 2 years;
Program budget increased
Program budget decreased
Program budget decreased
Project deferred 2 years
Project added to CIP
Project deferred 1 year and total cost increased

Project deferred 1 year and total cost reduced

## **Expense & Funding Schedule**

Executive Budget

Agency: Water Utility

2017 CIP by Expenditure Type

Water Network	25,484,500	17,223,340	20,733,120	21,402,200	21,383,520	22,266,260
Total	\$ 25,484,500 \$	17,223,340 \$	20,733,120 \$	21,402,200 \$	21,383,520 \$	22,266,260
2017 CIP by Funding Source						
	2017	2018	2019	2020	2021	2022
Municipal Capital Participate	-	-	131,000	2,484,840	574,000	-
Revenue Bonds - Capitalized	16,984,500	7,223,340	9,872,120	7,395,360	8,680,520	9,490,260
Sale Property/Capital Asset	8,500,000	10,000,000	10,730,000	11,522,000	12,129,000	12,776,000

17,223,340 \$

2019

20,733,120 \$

2020

21,402,200 \$

2021

21,383,520 \$

2022

22,266,260

2018

2017

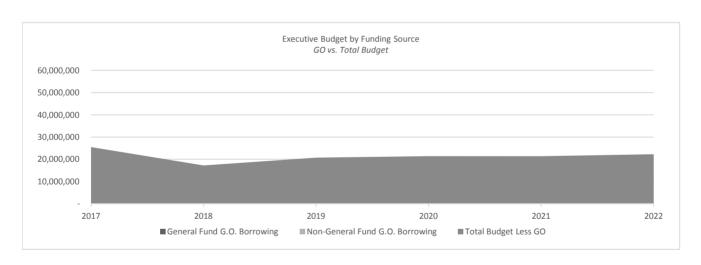
25,484,500 \$

\$

### **Borrowing Summary**

Total

Borrowing Schedule							
	20	017	2018	2019	2020	2021	2022
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		_	_	_	_	_	_



**Project Summary** 

**Executive Budget** 

Agency: Water Utility

Project: Arbor Hills Fire Flow Supply Project #: 10435

**Project Description:** 

This project is for the final phase of construction for booster pump station #118. The project will construct pipeline that will allow for full functionality of the booster pump station.

### **Project Budget by Funding Source**

	R	leauth	2017		2018		2019	2	020	2	2021	2022	
Revenue Bonds - Capitalized		642,000		-		-	-		-		-	_	
Total	\$	642,000 \$		- \$		\$		\$	-	\$	-	\$ -	_

Project: Asset Management System Project #: 17097

#### **Project Description:**

This project is for developing a city-wide asset management program. The project includes a software system where specific program area functions will be configured to meet the needs of Public Works agencies.

### **Project Budget by Funding Source**

	Reauth	2017	2018	201	19	2020	2021	2022
Revenue Bonds - Capitalized	200,000	-	-		-	-	-	-
Total	\$ 200,000 \$	_	\$ -	\$	- \$		\$ -	\$ -

Project: Booster Pump Station 109 (Spaanem Ave) Project #: 28

### **Project Description:**

This project will provide a booster pumping station for Madison's east side to improve operational functionality and reliability to the water supply system.

#### **Project Budget by Funding Source**

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	-	81,000	1,725,960	617,000	-	-	
Total	٠	81,000	1 725 960	617,000 \$		\$ -	\$ -

Project: Booster Station #106 Reconstruction Project #: 10444

### **Project Description:**

This project will provide hydraulic capacity improvements at booster pump station 106.

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	880,000	-	-	818,000	-	-	
Total	\$ 880,000 \$		\$ -	\$ 818,000 \$		\$ -	\$ -

Project: BPS 129 Reconstruction

### **Project Description:**

This project constructs a new booster pump station. The goal of the project is to increase water transfer capacity from Zone 6E to Zone 3. Construction is planned for 2020.

Project #:

30

**Project Budget by Funding Source** 

	Reau	th	2017	2018		2019	2020	2021	2022
Municipal Capital Participate		-	-		-	131,000	2,484,840	574,000	
Total	Ś	- <b>\$</b>	-	\$	. <b>Ś</b>	131,000 \$	2.484.840 \$	574.000	-

Project: Far West Elevated Reservoir Project #: 10445

### **Project Description:**

This project will construct a reservoir on Madison's far west side. The goal of the project is to reduce pressure on the High Point Reservoir to ensure adequate supply for regular usage and to meet minimum fire flow needs. The project was called for in the 2006 Water Master Plan.

#### **Project Budget by Funding Source**

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	194,000	4,011,000	-	-	-	1,309,000	
Total	\$ 194,000 \$	4.011.000 S	-	\$ -	\$ -	\$ 1.309.000 \$	-

Project:Lakeview Reservoir ReconstructionProject #:10439

### **Project Description:**

This project will continue reconstruction efforts at Lakeview Reservoir.

### **Project Budget by Funding Source**

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	1,121,000	858,000	-	60,000	1,759,800	-	-
Total	\$ 1.121.000 \$	858.000 Ś	_	\$ 60,000	\$ 1.759.800	<b>5</b> -	\$ -

Project: Paterson St Remodel Project #: 10442

### **Project Description:**

This project funds a renovation of the Water Utility Operations Center at Paterson Street. Construction began in 2015 and will be completed in 2017. The reconstructed space will address existing space limitations and improve employee safety.

### **Project Budget by Funding Source**

	Reau	ıth	2017	2018	2	2019	2020	)	2021	2022	
Revenue Bonds - Capitalized		-	4,325,000	-		-		-	-	-	
Total	\$	- \$	4,325,000	-	\$	-	\$	- ;	\$ -	\$ -	

Project:Pump Station ImprovementsProject #:10446

#### **Project Description:**

This project includes improvements to pump stations, pressure reducing valve (PRV) stations, well improvements, and tasks recommended by the Water Utility Master Plan.

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	148,000	877,000	1,000,300	1,070,600	1,196,900	1,010,200	1,061,600
Total	\$ 148,000 \$	877,000 \$	1,000,300 \$	1,070,600 \$	1,196,900 \$	1,010,200 \$	1,061,600

Project:

Unit Well 12 Conversion to a Two Zone Well

Project #:

32

### **Project Description:**

This project will convert Well 12 to a two zone well. The goal of the project is to maximize operational flexibility and reliability to the west side supply system. Construction is planned for 2018 and 2019.

**Project Budget by Funding Source** 

	Reau	uth	2017	2018	2019	2020		2021	20	022
Revenue Bonds - Capitalized	7:	19,000	102,000	2,373,280	1,017,120		-	-		
Total	\$ 71	19.000 \$	102.000	\$ 2.373.280	\$ 1.017.120	\$ -	Ś	-	Ś	-

Project: Unit Well No. 8 Reconstruction Project #: 10944

#### **Project Description:**

The project upgrades and replaces Well 8. The project scope includes installation of a filter for iron and manganese to address current water quality issues at Well 8. Construction is scheduled for 2018.

**Project Budget by Funding Source** 

	F	Reauth	2017	2018	2019	2020		2021	2022	
Revenue Bonds - Capitalized		25,000	50,000	110,000	-		-	-		
Total	\$	25,000	\$ 50,000	\$ 110,000	\$ -	\$ -		\$ -	\$ -	

Project: Voc Air Stripper At Well 18 Project #: 12016

### **Project Description:**

This project will construct a volatile organic compound (VOC) air stripper at Well 18. Recent water quality analysis has shown increasing VOC levels in the water supply in the well area. Construction is planned in 2022, with the location being fully operational in 2022.

**Project Budget by Funding Source** 

	Reau	ıth	2017	2018	2019		2020	2021	2022
Revenue Bonds - Capitalized		-	-	-		-	-	5,000	255,000
Total	Ś	- Ś	- 9	-	Ś	- Ś	- Ś	5.000 Ś	255.000

Project: Water Mains - New Project #: 10856

### **Project Description:**

This project installs new water mains to help strengthen the existing distribution system, improve pressures, improve fire protection, allow transfer of water from pressure zone to pressure zone, and serve the growing Madison area. Newly installed mains will include hydraulic improvements consistent with the Water Utility Master Plan.

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	200,000	1,000,000	1,100,000	1,924,000	2,067,000	2,222,000	2,391,000
Total	\$ 200,000 \$	1,000,000 \$	1,100,000 \$	1,924,000 \$	2,067,000 \$	2,222,000 \$	2,391,000

Project:

Water Mains Replace Rehab Improvements

Project #:

10432

### **Project Description:**

This program replaces and upgrades existing water mains. Assessment of an aging infrastructure indicates the Utility must replace or rehabilitate over 400 miles of pipe in over a 40 year period to renew and maintain the system. This program works in conjunction with the timing of several Engineering - Major Streets Reconstruction Streets projects.

**Project Budget by Funding Source** 

	Reauth	2017	2018	2019	2020	2021	2022
Sale Property/Capital Asset	-	8,500,000	10,000,000	10,730,000	11,522,000	12,129,000	12,776,000
Total	\$ - \$	8,500,000	\$ 10,000,000	\$ 10,730,000	\$ 11,522,000	\$ 12,129,000	\$ 12,776,000

Project: Water Utility Facility Improvements Project #: 10440

#### **Project Description:**

This project provides for miscellaneous project repair, improvements to Utility facilities, and security improvements.

**Project Budget by Funding Source** 

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	200,000	168,000	235,000	1,120,000	660,000	617,000	1,341,000
Total	\$ 200,000 \$	168.000 S	235.000	\$ 1.120.000 \$	660.000 \$	617.000 S	1.341.000

Project: Well 19 Iron/Manganese Filter Project #: 10448

#### **Project Description:**

This project constructs an iron and manganese filter at Well 19 to address existing water quality issues. This well is located in the west UW-Madison campus area. Construction is planned for 2019.

**Project Budget by Funding Source** 

	Re	auth	2017		2018	2019	2020	2021		2022	
Revenue Bonds - Capitalized		115,000		-	678,800	2,974,400			-		
Total	\$	115,000	\$ -		\$ 678,800	\$ 2,974,400	\$ -	\$	-	\$ -	

**Project:** Well 28 Iron and Manganese Filter **Project #:** 33

#### **Project Description:**

This project constructs an iron and manganese filter at Well 28. The goal of the project is to address existing water quality standards. Construction is planned for 2021 and 2022.

**Project Budget by Funding Source** 

	Rea	uth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized		-	-	-	-	107,660	2,632,320	1,107,660
Total	\$	- \$	-	\$ -	\$ - \$	107,660 \$	2,632,320 \$	1,107,660

Project: Well 30 Iron and Manganese Filter Project #: 34

### **Project Description:**

This project constructs an iron and manganese filter at Well 30. The goal of the project is to address existing water quality standards. Planning will begin in 2021; construction is planned for 2022.

	Reau	ıth	2017	2018	2019	2	2020	2021	2022
Revenue Bonds - Capitalized		-	-	-	-		-	330,000	2,200,000
Total	Ś	- \$	-	\$ -	\$ -	Ś	- Ś	330.000 Ś	2,200,000

Project:

Well 7 Area Hydraulic Improvements

Project #:

31

### **Project Description:**

This project will provide for hydraulic capacity improvements to the distribution system at Well 7. The goal of the project is to provide for the full capacity of the updated well which was constructed in 2015. Construction is planned for 2020.

**Project Budget by Funding Source** 

	Reau	ıth	2017	:	2018	2	2019	2020	2	2021	2022
Revenue Bonds - Capitalized		-	-		-		-	842,000		-	-
Total	\$	- \$	-	\$	-	\$	-	\$ 842,000	\$	-	\$ -

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

### **Project Description:**

This project will construct unit Well 31 to correct a significant system deficiency in the southeast corner of the system identified by the Water Utility Master Plan. The well house, filter, and booster pump station will be constructed in 2017. The well will be finished and fully operational in 2018.

**Project Budget by Funding Source** 

	Reauth	2017	2018	2019	2020	2021	2022
Revenue Bonds - Capitalized	-	5,512,500	-	271,000	697,000	-	
Total	\$ - :	5 5,512,500 \$	-	\$ 271,000 \$	697,000 \$	-	\$ -

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

#### **Project Description:**

This project constructs an additional well to serve Madison's west side. Construction of the new location is in anticipation of continued growth to Madison's west side. Planning and design is scheduled to begin in 2020, with the new well being functional in 2024.

	Reauth	:	2017	2018	2	019		2020	2021	2022
Revenue Bonds - Capitalized	-		-	-		-		65,000	555,000	1,134,000
Total	Ś	- Ś	-	\$ -	Ś		Ś	65.000 \$	555.000 S	1.134.000

# 2017 Appropriation

Executive Budget

Agency: Water Utility

2017 Appropriation Executive Budget

		Request	Executive	GO Borrowing	Other	Total
Booster Pump Station 109 (Spaanem Ave)	_	81,000	81,000	-	81,000	81,000
Unit Well 12 Conversion to a Two Zone Well		102,000	102,000	-	102,000	102,000
Water Mains Replace Rehab Improve		8,500,000	8,500,000	-	8,500,000	8,500,000
Zone 4 Fire Flow Supply Augment		4,212,500	5,512,500	-	5,512,500	5,512,500
Lakeview Reservoir Reconstruction		858,000	858,000	-	858,000	858,000
Water Utility Facility Improvements		168,000	168,000	-	168,000	168,000
Paterson St Remodel		2,235,000	4,325,000	-	4,325,000	4,325,000
Far West Elevated Reservoir		2,732,000	4,011,000	-	4,011,000	4,011,000
Pump Station Improvements		877,000	877,000	-	877,000	877,000
Water Mains - New		1,000,000	1,000,000	-	1,000,000	1,000,000
Unit Well No. 8 Reconstruction		50,000	50,000	-	50,000	50,000
Total	\$	20,815,500	\$ 25,484,500	\$	- \$ 25,484,500	\$ 25,484,500

### Reauthorized Appropriation

	GO Borrowing	Other	Total
Arbor Hills Fire Flow Supply	-	642,000	642,000
Asset Management System	-	200,000	200,000
Booster Station #106 Reconstruction	-	880,000	880,000
Far West Elevated Reservoir	-	194,000	194,000
Lakeview Reservoir Reconstruction	-	1,121,000	1,121,000
Pump Station Improvements	-	148,000	148,000
Unit Well 12 Conversion to a Two Zone Well	-	719,000	719,000
Unit Well No. 8 Reconstruction	-	25,000	25,000
Water Mains - New	-	200,000	200,000
Water Utility Facility Improvements	-	200,000	200,000
Well 19 Iron/Manganese Filter	-	115,000	115,000
Total	\$ -	\$ 4,444,000	\$ 4,444,000
Total	\$ -	\$ 4,44	14,000

TOTAL 2017 APPROPRIATION \$ - \$ 29,928,500 \$ 29,928,500