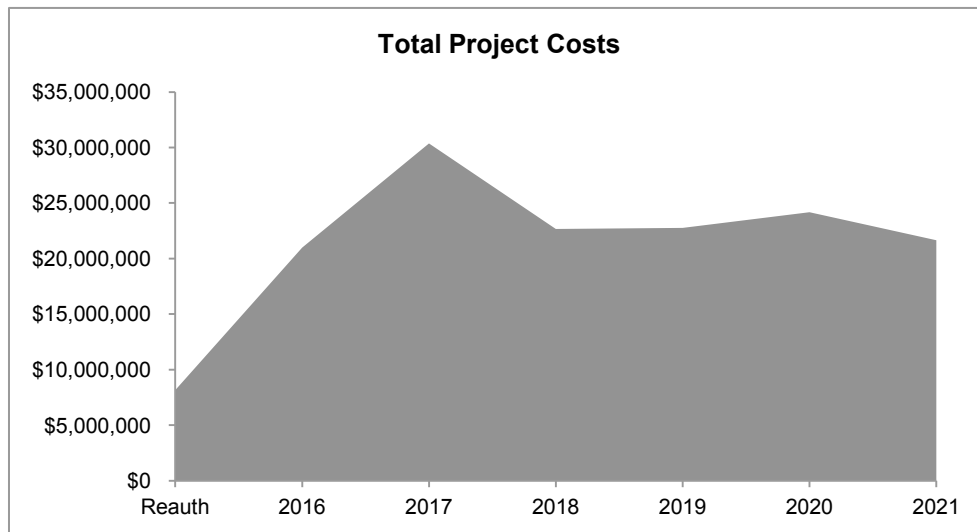


**2016  
Capital Budget  
Capital Improvement Program**

**Agency Name: Water Utility**

Project	Capital Budget						
	Reauth	2016	2017	2018	2019	2020	2021
1 Arbor Hills Fire Flow	\$ 642,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2 Asset Management System	0	200,000	0	0	0	0	0
3 Booster Stn. #106 Reconst.	0	981,000	0	0	1,429,000	0	0
4 Far West Elev. Reservoir	0	284,000	2,761,000	1,899,000	0	736,000	0
5 Lakeview Reservoir Reconst.	2,080,000	1,380,000	826,000	1,695,000	0	0	0
6 Paterson St. Remodel	4,444,000	1,795,000	2,845,000	400,000	0	0	0
7 Pump Station Improvements	0	448,000	862,000	561,000	967,000	616,000	168,000
8 Unit Well No. 8 Reconst.	20,000	50,000	5,000	110,000	55,000	758,000	2,770,000
9 Voc Air Stripper Well 18	0	0	10,000	260,000	1,660,000	2,400,000	0
10 Water Mains - New	0	1,350,000	1,451,000	1,560,000	1,677,000	1,803,000	1,803,000
11 Water Mains Repl. Rehab Imp	0	11,719,000	12,655,000	13,525,000	14,466,000	15,484,000	14,782,000
12 Water Utility Facility Imp.	0	1,307,000	1,496,000	1,605,000	1,722,000	1,838,000	1,028,800
13 Well 12 Conversion	631,000	919,000	0	0	0	0	0
14 Well 19 Iron/Manganese Filter	100,000	485,000	3,531,000	0	0	0	0
15 Well 29 Filter Capacity Exp.	0	0	0	504,000	0	0	0
16 Zone 4 Fire Flow Supply Aug.	250,000	70,000	3,925,000	550,000	744,000	0	0
17 Zones 7 & 8 Supply Whit Way	0	0	0	0	45,000	541,000	1,102,000
<b>Total</b>	<b>\$ 8,167,000</b>	<b>\$ 20,988,000</b>	<b>\$ 30,367,000</b>	<b>\$ 22,669,000</b>	<b>\$ 22,765,000</b>	<b>\$ 24,176,000</b>	<b>\$ 21,653,800</b>





**2016  
Capital Budget**

**Agency Name: Water Utility**

**Agency No.: 86**

**Arbor Hills Fire Flow Supply**

Project No. 10435

GO	\$	0	Booster pump station #118 was constructed and put into service in year 2012. Pipeline improvements also were constructed in 2012, and the last phase of the project, phase 4 of the cannonball pipeline, is budgeted to be constructed in 2016. The recommended GO borrowing is a reauthorization of 2015 appropriations.
Other		642,000	
		<hr/>	
	\$	<u>642,000</u>	

**Asset Management System**

Project No. 17097

GO	\$	0	This request will provide funding to develop a city-wide comprehensive asset management program which includes valuation of assets, maintenance, and replacement from a city-wide approach. This will include a software system where specific program area functions will be configured to meet the needs of Public Works including Engineering, Traffic Engineering, Water Utility and possibly other agencies. Other funding is from Water Utility reserves.
Other		200,000	
		<hr/>	
	\$	<u>200,000</u>	

**Booster Station #106 Reconstruction**

Project No. 10444

GO	\$	0	The rebuilding of outdated booster pump station 106 was finished in 2014. To fully benefit from the pump station upgrade, hydraulic capacity improvements to the distribution system have been budgeted and planned. Other funding is from revenue bonds.
Other		981,000	
		<hr/>	
	\$	<u>981,000</u>	

**Far West Elevated Reservoir**

Project No. 10445

GO	\$	0	This project combines 2014 capital projects #14 (zone 11 Blackhawk elevated reservoir) and #23 into one. The intent is to combine pressure zones 10 and 11, and construct a single far west side 1 million gallon elevated reservoir to hydraulically balance the two zones and supplement the storage at High Point Road. The 250,000 gallon High Point Road reservoir is reaching its capacity and does not provide sufficient emergency reserve capacity. Providing minimum fire flow requirements to this area of the distribution system is necessary to meet minimum utility standards. The project also provides a second feed to the area by using booster station 128, improving reliability. This 2006 Water Master Plan identified two elevated reservoirs for the far west side and this project will combine those two projects. Other funding is from revenue bonds.
Other		284,000	
		<hr/>	
	\$	<u>284,000</u>	

**Lakeview Reservoir Reconstruction**

Project No. 10439

GO	\$	0	Construction of the Lakeview Reservoir started in 2015. Reconstruction of the Lakeview Reservoir will replace an aging storage tank for pressure zone 5 and provide much needed additional gravity fed water storage in zone 6e on the north side of the city. Storage is needed in zone 6e to provide additional operational flexibility and emergency backup. The reservoir is being developed as a two zone facility to optimize the use of the site. This project is justified in the Water Master Plan, and will improve fire fighting capacity and reliability to both pressure zone 5 and pressure zone 6e. The foundation will be complete in the summer of 2015, the tank will be completed in the spring of 2016 and painting will be completed in the summer of 2016. The recommended funding includes \$2,080,000 in reauthorized revenue bonds from 2015 appropriations.
Other		3,460,000	
		<hr/>	
	\$	<u>3,460,000</u>	

		<b>Paterson Street Remodel</b>	Project No. 10442
GO	\$	0	This project funds rebuilding of the Utility's operations center at Paterson Street, currently scheduled to start in the fall of 2015, and to be finished and in service in early 2017. The vehicle maintenance area is too small for modern equipment and compromises employee safety. Building air quality and ventilation does not meet modern standards. The office space, locker rooms and other functional storage spaces do not meet current needs. The project also includes construction of a materials handling building that will free up space in the vehicle storage building and improve efficiency during winter operations. Utility staff have been working with the Planning Division on use of the property considering the long-term redevelopment of the area. The recommended funding includes \$4,444,000 in reauthorized revenue bonds from 2015 appropriations.
Other		6,239,000	
		<u>6,239,000</u>	
	\$	<u>6,239,000</u>	

		<b>Pump Station Improvements</b>	Project No. 10446
GO	\$	0	This project includes various pump station, pressure reducing valve (PRV) stations, well improvement and upgrade tasks recommended by the Water Utility Master Plan. Water Utility reserves will pay for 2016 improvements.
Other		448,000	
		<u>448,000</u>	
	\$	<u>448,000</u>	

		<b>Unit Well No. 8 Reconstruction</b>	Project No. 10944
GO	\$	0	The project will upgrade and replace well 8. The project will include installation of a filter for iron and manganese to address current water quality issues at well 8. Due to the colored water resulting from the iron and manganese, well operation is currently limited to summer only and a total production of approximately 100 million gallons per year. The recommended funding includes reauthorizing \$20,000 in revenue bonds from 2015 appropriations.
Other		70,000	
		<u>70,000</u>	
	\$	<u>70,000</u>	

		<b>Voc Air Stripper at Well 18</b>	Project No. 12016
GO	\$	0	Construction of a VOC air stripper at well 18 will address the pending water quality and regulatory issues due to increasing volatile organic compound (VOC) levels at the well. Recent water quality monitoring at the well has indicated an increasing trend in the VOC levels. Additionally, regulatory changes may result in lower VOC limits, dictating the need to treat the water at well 18. Well 18 provides an excellent source of water to the south side of Madison within pressure zone 6w. It is in the Water Utility's best interest to maintain the well. The proposed budget anticipates construction of an air stripper in well 18 in 2019, with the facility in full operation in 2020.
Other		0	
		<u>0</u>	
	\$	<u>0</u>	

		<b>Water Mains - New</b>	Project No. 10856
GO	\$	0	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. Mains installed within this project will implement recommended hydraulic improvements from the 2006 Water Utility Master Plan. The capital improvement program proposes to significantly increase pipeline investment for hydraulic needs beginning in 2016 and increase this portion of the budget over the succeeding 15 years to meet Master Plan recommendations. Other funding is from revenue bonds.
Other		1,350,000	
		<u>1,350,000</u>	
	\$	<u>1,350,000</u>	

		<b>Water Mains Replace Rehab Improve</b>	Project No. 10432
GO	\$	0	<p>Madison Water Utility has a planned system replacement and upgrade program that provides for annual main replacement and rehabilitation. Assessment of an aging infrastructure indicates the Utility must replace or rehabilitate over 400 miles of pipe in approximately a 40 year period to renew and maintain the system. A planned annual increase in spending to accomplish this goal by 2050 will be continued. Other funding is from revenue bonds.</p>
Other		11,719,000	
		<u>11,719,000</u>	
	\$	<u>11,719,000</u>	

		<b>Water Utility Facility Improvements</b>	Project No. 10440
GO	\$	0	<p>This is one project within the Utility's system-wide miscellaneous projects for 2016. These miscellaneous projects repair, rehabilitate and improve Utility facilities, as well as improve security and monitoring of facilities. These projects include but are not necessarily limited to lighting, roofing, painting, video camera surveillance, improved doors and hatches, fencing, alarm systems, online monitoring, and other upgrades to the Utility's 33 remote sites, the administration building, and operations center's vehicle storage building. Revenue bonds will pay for the following projects in 2016: meter program (\$208,000), Olin administration office maintenance (\$51,000), Paterson office and shop maintenance (\$25,000), Paterson vehicle storage building maintenance (\$58,000), safety additions and modifications to wells (\$72,000), Scada maintenance and six year upgrade (\$100,000), well video system upgrades (\$43,000), and other improvements.</p>
Other		1,307,000	
		<u>1,307,000</u>	
	\$	<u>1,307,000</u>	

		<b>Well 12 Conversion</b>	Project No. 10452
GO	\$	0	<p>The 2006 Water Utility Master Plan recommends that well 12 be converted to a two zone well. This conversion will provide operational flexibility and reliability to the west side supply system. Pumps and a pressure reducing valve will be added to the well 12 facility to move water from pressure zone 7 to pressure zone 8 and vice versa. The recommended funding includes reauthorizing \$631,000 in revenue bonds from 2015 appropriations.</p>
Other		1,550,000	
		<u>1,550,000</u>	
	\$	<u>1,550,000</u>	

		<b>Well 19 Iron/Manganese Filter</b>	Project No. 10448
GO	\$	0	<p>Construction of an iron and manganese filter at well 19 will address the water quality in the well 19 service area due to elevated levels of iron and manganese. The iron and manganese levels exceed Madison Water Utility water quality goals. Accumulation of iron and manganese solids in the distribution system results in a need for additional flushing to minimize the risk of colored water reaching customers. Removing the iron and manganese from the water using a filter improves water quality and reduces the need for frequent flushing. The project will benefit existing customers in the west UW-Madison campus area in pressure zone 6w. The recommended funding includes reauthorizing \$100,000 in revenue bonds from 2015 appropriations.</p>
Other		585,000	
		<u>585,000</u>	
	\$	<u>585,000</u>	

		<b>Well 29 Conversion</b>	10451
GO	\$	0	<p>The filter system at unit well 29 was originally constructed with 50% capacity of the well. The filters are rated at 1,100 gallons per minute (GPM) due to a concern with contaminants under the Sycamore Landfill. A sentry well was installed between the landfill and the well to monitor water quality. Current pumping and water quality data at the sentry well show no indication of a problem with the Sycamore Landfill with regard to well 29 operation. It is proposed to increase the capacity of the filtration system to 2,200 GPM to match the capacity of the well while maintaining the annual pumping at 560 million gallons per year.</p>
Other		0	
		<u>0</u>	
	\$	<u>0</u>	

**Zone 4 Fire Flow Supply Augment**

Project No. 10434

GO \$ 0  
Other 320,000  

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\$ 320,000

Unit well 31 will start in 2015 with the construction of the site ground reservoir. The well house, filter, and booster pump station will be constructed in 2017. The well 31 project will correct a significant system deficiency in the southeast corner of the system identified by the Water Utility Master Plan. Due to significant expansion of the system over the years to the south and east, the hydraulics of the system will not adequately serve this area for fire flow supply or system reliability and redundancy. Adding a second source of supply to the area will improve fire flow capacity and bring the water system level of service for the area up to Utility standards. Two test wells were constructed in 2012, and the production well was drilled in 2013. Unit well 31 was designed in 2014, and construction will start in mid 2015. The well is to be finished and in service in 2018. The recommended funding includes reauthorizing \$250,000 in revenue bonds from 2015 appropriations.

**Zones 7 and 8 Supply: Whitney Way**

Project No. 10438

GO \$ 0  
Other 0  

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\$ 0

The 2006 Water Master Plan recommends an additional well to serve pressure zones 7 and 8 to improve operational flexibility and system reliability to the west side. This recommendation was verified in 2009 in an analysis of the water demand in zone 7. This facility will provide significant operational flexibility to the Utility within this area of the system and ultimately benefit five different pressure zones across the entire west side. Projected development and growth on the west side and the Utility's stated policy of limiting average well pumpage to 50% of capacity for long-term groundwater management make this an important water supply project. The new well is projected to start in 2024.

**2016  
Capital Budget  
Summary**

**Agency Name: Water Utility**

**Agency Number: 86**

Project Name	Agency Request	Executive	Executive		
			G.O. Debt	Other Funding	Total
1 Arbor Hills Fire Flow Supply	\$ 642,000	\$ 642,000	\$ 0	\$ 642,000	\$ 642,000
2 Asset Management System	200,000	200,000	0	200,000	200,000
3 Booster Station #106 Reconstruction	981,000	981,000	0	981,000	981,000
4 Far West Elevated Reservoir	284,000	284,000	0	284,000	284,000
5 Lakeview Reservoir Reconstruction	3,460,000	3,460,000	0	3,460,000	3,460,000
6 Paterson St Remodel	6,239,000	6,239,000	0	6,239,000	6,239,000
7 Pump Station Improvements	448,000	448,000	0	448,000	448,000
8 Unit Well No. 8 Reconstruction	70,000	70,000	0	70,000	70,000
9 Voc Air Stripper At Well 18	0	0	0	0	0
10 Water Mains - New	1,350,000	1,350,000	0	1,350,000	1,350,000
11 Water Mains Replace Rehab Improve	11,719,000	11,719,000	0	11,719,000	11,719,000
12 Water Utility Facility Improvements	1,307,000	1,307,000	0	1,307,000	1,307,000
13 Well 12 Conversion	1,550,000	1,550,000	0	1,550,000	1,550,000
14 Well 19 Iron/Manganese Filter	585,000	585,000	0	585,000	585,000
15 Well 29 Filter Capacity Expansion	0	0	0	0	0
16 Zone 4 Fire Flow Supply Augment	320,000	320,000	0	320,000	320,000
17 Zones 7 & 8 Supply: Whitney Way	0	0	0	0	0
<b>Total</b>	<b>\$ 29,155,000</b>	<b>\$ 29,155,000</b>	<b>\$ 0</b>	<b>\$ 29,155,000</b>	<b>\$ 29,155,000</b>