

City of Madison 2018 Capital Improvement Plan
 Agency Request Summary

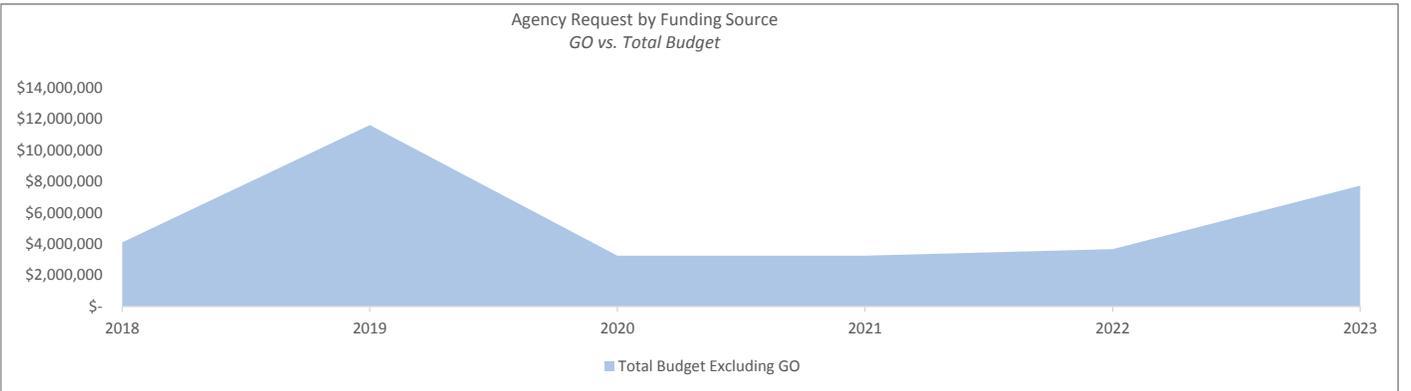
Agency : Stormwater Utility

Agency Request by Project (All Funds)

Project	2018	2019	2020	2021	2022	2023
Citywide Flood Mitigation	350,000	875,000	550,000	575,000	675,000	4,575,000
Starkweather Coagulant Treatment	900,000	5,000,000	100,000	-	-	-
Storm Sewer System Improvements	475,000	475,000	475,000	475,000	475,000	475,000
Stormwater Quality System Improvements	2,105,000	4,815,000	1,665,000	1,740,000	2,285,000	2,435,000
Street Cleaning Equipment - Streets	270,000	440,000	455,000	455,000	227,000	250,000
Total	\$ 4,100,000	\$ 11,605,000	\$ 3,245,000	\$ 3,245,000	\$ 3,662,000	\$ 7,735,000

Agency Request by Funding Source

Project	2018	2019	2020	2021	2022	2023
Non-GF GO Borrowing - Stormwater	2,800,000	8,940,000	1,900,000	2,000,000	2,500,000	6,400,000
County Sources	-	1,000,000	-	-	-	-
Trade In Allowance	-	40,000	45,000	45,000	22,000	25,000
Reserves Applied - Stormwater	1,300,000	1,625,000	1,300,000	1,200,000	1,140,000	1,310,000
Total	\$ 4,100,000	\$ 11,605,000	\$ 3,245,000	\$ 3,245,000	\$ 3,662,000	\$ 7,735,000





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Steven B. Danner-Rivers

Date: May 10, 2017

To: David Schmiedicke, Finance Director

From: Robert Phillips, P.E., City Engineer

**Re: 2018 Capital Budget Proposal
Stormwater Utility**

Introduction

The “Stormwater Utility” budget provides the infrastructure needed to construct and maintain the storm drainage system comprised of pipes, ponds and greenways and to construct and maintain various water quality projects that reduce pollutants entering the receiving waters. The 2018 Budget proposes to restructure the capital budget into five (5) major programs, Storm Water Quality, Storm Sewer System Improvements, Street Cleaning Equipment, Starkweather Coagulant Treatment and Flood Mitigation. The restructuring groups related projects together and provides more efficiency and flexibility within the major areas outlined above.

Storm sewer replacement funds related to “Engineering – Major Streets” have been removed from this budget proposal section and placed in the “Engineering – Major Streets” section. This was done to provide a full view of funding for City street projects.

Prioritized List

1. Stormwater Quality System Improvements
2. Storm Sewer System Improvements
3. Street Cleaning Equipment - Streets
4. Starkweather Coagulant Treatment
5. Citywide Flood Mitigation

Discussion of Criteria

The first priority is Stormwater Quality System Improvements as they reduce storm water pollution that reaches the receiving waters and meets DNR/EPA regulatory requirements. The next priority is Storm Sewer System improvements as this program funds basic infrastructure repair that is necessary to keep the system operational. Street Cleaning Equipment and the Starkweather Coagulant Treatment are also needed to reduce pollution entering the receiving waters and are mandated by the DNR/EPA. Citywide Flood Mitigation is a relatively new program that works to reduce flooding in areas that are known to be problematic during large rainfall events.

Capital Budget Proposals

Section 1: Identifying Information

Agency

Proposal Name

Munis

Proposal Description

This program improves the storm water network performance in City locations that flood during large snow melt and rain events. The goal of the program is to reduce flooding and protect property from damage. The program includes minor projects including backyard drainage problems, local and regional flood mitigation, and Willow Creek storm sewer.

Proposal Type

Section 2: Budget Information

Budget by Year

Funding Source	2018	2019	2020	2021	2022	2023
Reserves Applied - Stormwater <input type="text" value="v"/>	250,000	275,000	250,000	275,000	375,000	575,000
Non-GF GO Borrowing - Stormwater <input type="text" value="v"/>	100,000	600,000	300,000	300,000	300,000	4,000,000
Total	\$350,000	\$875,000	\$550,000	\$575,000	\$675,000	\$4,575,000

 Insert Funding Source

Expense Category	2018	2019	2020	2021	2022	2023
Stormwater Network <input type="text" value="v"/>	350,000	275,000	550,000	575,000	675,000	4,575,000
Land <input type="text" value="v"/>		600,000				
Total	\$350,000	\$875,000	\$550,000	\$575,000	\$675,000	\$4,575,000

 Insert Expense Category

Section 3: Proposal

Minor Projects

List the minor projects, estimated amounts and locations currently planned for 2017

Minor Project Name	Estimated Cost	Minor Project Location
Backyard Drainage Problems	\$25,000	various
Local Flood Mitigation	\$0	None in 2018
Regional Flood Mitigation: Hidden Hill @ Hawk's Landing	\$200,000	
Regional Flood Mitigation: Celia Court	\$125,000	
Willow Creek Storm Sewer	\$0	None in 2018, design year in 2022, construction year in 2023

 Insert Minor Project

Service Level

What are the end products (asset or infrastructure type) provided by this program?

End Product	Product Unit	# of Units Provided
Stormwater Network <input type="text" value="v"/>	Miles	.5

 Insert End Product

On average, what is the standard useful life for assets maintained by this program?

Is the City currently on track for meeting this standard?

Yes No

Program Goals

What is the program's desired outcome for the customer?

How is the outcome currently being measured?

Operating Costs

What are the ongoing operating costs associated with proposed projects within the program?

Minimal to overall maintenance of storm sewer system.

[Matching Funds](#)

Have matching funds been secured for any projects within the program?

Yes No

Re-Edit

Capital Budget Proposals

Section 1: Identifying Information

Agency

Proposal Name

Munis

Proposal Description

This project will divert stormwater runoff from the East Branch of Starkweather Creek to an existing reconfigured pond on lands north of Milwaukee Street and east of the Starkweather Creek in the Town of Blooming Grove. The diverted storm water will have coagulant added to it and mixed on the way to the pond. The additive allows dissolved phosphorous to move out of solution and into particulate form where it may settle out in the pond itself. This process is expected to remove approximately 85% of available phosphorous from the water stream and has side benefits of removing total suspended solids and bacteria. On an average year this system is expected to remove approximately 1600 LBS of phosphorous which is 12% of the City's required regulatory reduction of 13,000 LBS.

Proposal Type

Section 2: Budget Information

Total Project Budget

Budget by Year

Funding Source	2018	2019	2020	2021	2022	2023
Non-GF GO Borrowing - Stormwater <input type="text" value=""/>	600,000	3,540,000				
Reserves Applied - Stormwater <input type="text" value=""/>	300,000	460,000	100,000			
County Sources <input type="text" value=""/>		1,000,000				
Total	\$900,000	\$5,000,000	\$100,000	\$0	\$0	\$0
<input type="checkbox"/> Insert Funding Source						
Expense Category	2018	2019	2020	2021	2022	2023
Stormwater Network <input type="text" value=""/>		5,000,000	100,000			
Land <input type="text" value=""/>	900,000					
Total	\$900,000	\$5,000,000	\$100,000	\$0	\$0	\$0
<input type="checkbox"/> Insert Expense Category						

Section 3: Proposal

Project Status

What is the location of the proposed project?

Is the property currently owned by the City of Madison?

Yes No

What is the current status of the project?

What is the planned schedule for the project?

2018	2019	2020	2021	2022	2023
<input type="text" value="Planning"/>	<input type="text" value="Planning"/>	<input type="text" value="Construction"/>	<input type="text" value="Construction"/>	<input type="text" value=""/>	<input type="text" value=""/>

Project Justification

Is the proposed project the replacement of an existing asset or the construction of a new asset?

New Asset Existing Asset

Is this project called for in an approved master plan?

Yes No

What is the desired outcome of the proposed project?

How will this outcome be measured?

Operating Costs

Will the proposed project result in operational efficiencies and/or savings? Please Explain.

This project creates a new treatment system for the removal of phosphorous and total suspended solids from Starkweather Creek. Like all treatment systems: ponds, catchbasins, street sweeping, rain gardens... the process of removal and collection increases rather than reduces operational costs. The real question is does the project create an efficient operational cost or an inefficient one. To put this in perspective compare this to other treatment options. A modern catchbasin design captures about approximately 4 lbs of TP annually. A catchbasin has a capital cost of about \$35,000 with an annual maintenance cost of approximately \$1000. The maintenance cost per pound of TP removed is approximately \$250/lb/year. A traditional pond system has a capital cost of approximately \$1,000,000 (no land costs) and could be expected to capture approximately 200 lbs/year of TP. Dredging only (ignoring mowing and routine maintenance) and would be required approximately every 15 years at a cost of approximately \$300,000 giving an average cost of \$100/lb/year for operating costs. The treatment system proposed will capture approximately 1600 LBS of TP at an annual maintenance cost of \$300,000 for a O&M cost of \$187.5/lb/year. We believe the O&M estimated for this project is conservative and even at this estimate is reasonable.

What's the annual operating costs associated with the project?

Describe, by major, the operating costs associated with the project. Include the number of newly created positions required by the project.

The coagulant treatment will have significant operating costs that have been calculated into the cost per pound and will be further refined as design proceeds.

Matching Funds

Have matching funds been secured for the project?

Yes No

Are these funds formally committed?

Yes No

What is the name of the fund provider and the name of the grant? What are the match requirements of the external funding sources?

Dane County has awarded a Dane County Storm Water Quality grant for this project. Up to 50% of construction costs (\$1,000,000 limit).

Capital Budget Proposals

Section 1: Identifying Information

Agency

Stormwater Utility

Proposal Name

Storm Sewer System Improvements

Munis

11664

Proposal Description

This program improves the City-wide storm sewer network with repairs, rehabilitation and expansion. The program includes minor projects of CIPP lining of storm sewer, storm improvements in developing areas, and storm water conveyance improvements.

Proposal Type

Program

Section 2: Budget Information

Budget by Year

Funding Source	2018	2019	2020	2021	2022	2023
Non-GF GO Borrowing - Stormwater	200,000	200,000	200,000	200,000	200,000	200,000
Reserves Applied - Stormwater	275,000	275,000	275,000	275,000	275,000	275,000
Total	\$475,000	\$475,000	\$475,000	\$475,000	\$475,000	\$475,000

Insert Funding Source

Expense Category	2018	2019	2020	2021	2022	2023
Stormwater Network	475,000	475,000	475,000	475,000	475,000	475,000
Total	\$475,000	\$475,000	\$475,000	\$475,000	\$475,000	\$475,000

Insert Expense Category

Section 3: Proposal

Minor Projects

List the minor projects, estimated amounts and locations currently planned for 2017

Minor Project Name	Estimated Cost	Minor Project Location
CIPP Lining Storm Sewer	\$50,000	various
Citywide Stormwater Improvements	\$225,000	various
Stormwater Only Projects	\$200,000	Unallocated

Insert Minor Project

Service Level

What are the end products (asset or infrastructure type) provided by this program?

End Product	Product Unit	# of Units Provided
Stormwater Network	Miles	0.5

Insert End Product

On average, what is the standard useful life for assets maintained by this program?

The average life for a new storm sewer network is approximately 100 years. CIPP lining has an average life of 50 years.

Is the City currently on track for meeting this standard?

Yes No

Program Goals

What is the program's desired outcome for the customer?

The goal is to resolve drainage problems city wide on streets and other city property.

How is the outcome currently being measured?

Number of projects completed.

Operating Costs

What are the ongoing operating costs associated with proposed projects within the program?

The majority of these projects are pipe related so ongoing costs are minimal.

Matching Funds

Have matching funds been secured for any projects within the program?

Yes No

Re-Edit

Capital Budget Proposals

Section 1: Identifying Information

Agency

Proposal Name

Munis

Proposal Description

This program funds all aspects of storm water quality improvement projects including those associated with the City's WDNR/EPA storm water discharge permit. Project types included in this program are: greenway reconstructions; storm water pond (reconstructions/retrofits/new pond construction); shoreline restoration; major urban water quality projects; and the City's participation in the Adaptive Management Program with the Madison Metropolitan Sewerage District. Smaller projects include rain gardens with street reconstruction and maintenance dredging.

Proposal Type

Section 2: Budget Information

Budget by Year

<i>Funding Source</i>	2018	2019	2020	2021	2022	2023
Non-GF GO Borrowing - Stormwater <input type="text" value=""/>	1,900,000	4,600,000	1,400,000	1,500,000	2,000,000	2,200,000
Reserves Applied - Stormwater <input type="text" value=""/>	205,000	215,000	265,000	240,000	285,000	235,000
Total	\$2,105,000	\$4,815,000	\$1,665,000	\$1,740,000	\$2,285,000	\$2,435,000

 Insert Funding Source

<i>Expense Category</i>	2018	2019	2020	2021	2022	2023
Stormwater Network <input type="text" value=""/>	2,105,000	4,815,000	1,665,000	1,740,000	2,285,000	2,435,000
Total	\$2,105,000	\$4,815,000	\$1,665,000	\$1,740,000	\$2,285,000	\$2,435,000

 Insert Expense Category

Section 3: Proposal

Minor Projects

List the minor projects, estimated amounts and locations currently planned for 2017

<i>Minor Project Name</i>	<i>Estimated Cost</i>	<i>Minor Project Location</i>
Dredging Projects	\$160,000	various
Greenway Improvements: Restoration Landscaping	\$55,000	
Greenway Improvements: Spring Harbor Greenway @ Mas...	\$600,000	
Greenway Improvements: Tree Lane to High Point	\$400,000	
Inter-Municipal Stormwater Mgmt	\$0	no projects in 2018
Lower Badger Mill Creek Watershed	\$0	no projects in 2018
Raingardens	\$80,000	various
Shorelines: John Nolen Dr Shoreline Repairs	\$350,000	
Starkweather Creek Watershed	\$0	no projects in 2018
Stormwater Basins: Rimrock Road Retrofit	\$25,000	
TMDL Compliance: Continuation of Leaf Study/Salt Study	\$50,000	
Upper Badger Mill Creek Watershed	\$0	no projects in 2018
Urban Best Management Practices: Wingra Park	\$175,000	
Urban Best Management Practices: Darbo Webb	\$75,000	
Urban Best Management Practices: Cannonball @ Bowma...	\$75,000	
Urban Best Management Practices: Other	\$50,000	various
Wingra Creek Corridor	\$0	no projects in 2018
Madison Beaches Water Quality Management	\$10,000	design costs for Warner, no construction projects in 2018

 Insert Minor Project

Service Level

What are the end products (asset or infrastructure type) provided by this program?

End Product	Product Unit	# of Units Provided
Stormwater Network <input type="checkbox"/>	Miles	

Insert End Product

On average, what is the standard useful life for assets maintained by this program?

Normal operating life of the components are as follows: Basin-30 yrs, Storm Sewer- 75-100 yrs, Dredging - 5-10 yrs, Shorelines - 50 yrs, Rain Gardens - 20 yrs...

Is the City currently on track for meeting this standard?

Yes No

Program Goals

What is the program's desired outcome for the customer?

Higher storm water quality.

How is the outcome currently being measured?

Greenway ratings, Pond depth functional ratings, TSS/TP percent reduction target per City Engineer memo to MMSD on Adaptive Management to show compliance with biannual updates to TMDL reductions submitted to WDNR & MMSD.

Operating Costs

What are the ongoing operating costs associated with proposed projects within the program?

Operating costs vary depending on storm water quality improvement.

Matching Funds

Have matching funds been secured for any projects within the program?

Yes No

Capital Budget Proposals

Section 1: Identifying Information

Agency

Stormwater Utility

Proposal Name

Street Cleaning Equipment - Streets

Munis

11666

Proposal Description

This program is for the replacement of existing street sweeping machines operated by the Streets Department. The City's street sweeping equipment life cycle is five years with interim maintenance. The goal of this program is to reduce the discharge of gross pollutants, solids and other urban pollutants to the lakes by removing material from the streets surface before it is mixed in with storm water runoff.

Proposal Type

Program

Section 2: Budget Information

Budget by Year

Funding Source	2018	2019	2020	2021	2022	2023
Reserves Applied - Stormwater	270,000	400,000	410,000	410,000	205,000	225,000
Trade In Allowance		40,000	45,000	45,000	22,000	25,000
Total	\$270,000	\$440,000	\$455,000	\$455,000	\$227,000	\$250,000

Insert Funding Source

Expense Category	2018	2019	2020	2021	2022	2023
Machinery and Equipment	270,000	440,000	455,000	455,000	227,000	250,000
Total	\$270,000	\$440,000	\$455,000	\$455,000	\$227,000	\$250,000

Insert Expense Category

Section 3: Proposal

Minor Projects

List the minor projects, estimated amounts and locations currently planned for 2017

Minor Project Name	Estimated Cost	Minor Project Location

Insert Minor Project

Service Level

What are the end products (asset or infrastructure type) provided by this program?

End Product	Product Unit	# of Units Provided
Machinery and Equipment	Pieces of Machines/Equipment	1

Insert End Product

On average, what is the standard useful life for assets maintained by this program?

Machines (sweepers) are on a 5 year life cycle due to maintenance beyond increases significantly.

Is the City currently on track for meeting this standard?

Yes No

Program Goals

What is the program's desired outcome for the customer?

The City attempts to sweep all areas of the City on a 24 day cycle and downtown areas weekly during the spring, summer and fall months. Additionally, sweepers are used to sweep immediately (within a 24 hour period) after leaf collection.

How is the outcome currently being measured?

Percent TSS reduction City wide and pounds of materials collected from City streets.

Operating Costs

What are the ongoing operating costs associated with proposed projects within the program?

No change in operating costs as this is replacement equipment. Each machine is sent out for major maintenance every off season to allow for heavy and uninterrupted work during the main operational season. Maintenance work is completed and funded by fleet.

Matching Funds

Have matching funds been secured for any projects within the program?

Yes No