City of Madison 2020 Capital Improvement Plan

Agency Request Summary

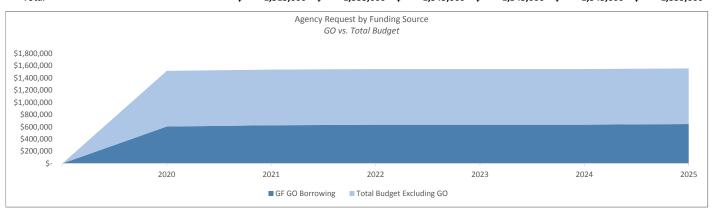
Agency: Traffic Engineering

Agency Request by Item (All Funds)

		2020	2021	2022	2023	2024	2025
Street Light Installation		595,000	610,000	615,000	615,000	615,000	620,000
Public Safety Radio System		50,000	50,000	50,000	50,000	50,000	50,000
Traffic Signal Installation		820,000	825,000	830,000	830,000	830,000	835,000
Traffic Safety Infrastructure		50,000	50,000	50,000	50,000	50,000	50,000
-	Ś	1 515 000 \$	1 535 000 \$	1 545 000 \$	1 545 000 \$	1 545 000 \$	1 555 000

Agency Request by Funding Source

Project	2020	2021	2022	2023	2024	2025
GF GO Borrowing	605,000	625,000	635,000	635,000	635,000	645,000
State Sources	100,000	100,000	100,000	100,000	100,000	100,000
County Sources	45,000	45,000	45,000	45,000	45,000	45,000
Other Govt Pmt For Services	80,000	80,000	80,000	80,000	80,000	80,000
Special Assessment	275,000	275,000	275,000	275,000	275,000	275,000
Developer Capital Funding	410,000	410,000	410,000	410,000	410,000	410,000
Total	\$ 1,515,000	\$ 1,535,000	\$ 1,545,000	\$ 1,545,000	\$ 1,545,000	\$ 1,555,000



OF MAD SO

Traffic Engineering Division

Yang Tao, PhD, PE, City Traffic Engineer

Madison Municipal Building 215 Martin Luther King Jr Blvd Suite 109 P.O. Box 2986 Madison, Wisconsin 53701-2986

Phone: (608) 266-4761 Fax: (608) 267-1158 www.cityofmadison.com

Date: May 17, 2019

To: Mayor Satya Rhodes-Conway

David Schmiedicke, Finance Director

From: Yang Tao, City Traffic Engineer

Subject: Traffic Engineering Division 2019 Capital Budget

Traffic Engineering Division's 2020 capital budget reflects careful consideration of the City's fiscal situation in the face of growing infrastructure needs. The primary goal of our 2020 proposal is to upgrade our existing facilities that result where maintenance and repairs have become too costly to continue.

We have included requests for city funding to install new infrastructure in locations where public safety improvements are vital and where the city could leverage other funding sources: assessment districts, funding from private developers, federal and state grants, and funding from other municipalities for new signals and lighting. We have also included requests for funding for new projects such as transit signal priority pilot (within the existing Traffic Signals Installation Program) to help improve bus on-time performance and public safety radio tower relocation (Black Hawk Water Tower) to maintain reliable radio communication for critical public safety needs in a more cost-effectively manner.

Our agency developed the capital projects through the lenses of the Citywide Elements and have included measures to be used to understand the problems we are seeking to resolve and the way capital investment helps resolve these problems.

- 1. Street Light Installation
- 2. Traffic Signals Installation
- 3. Public Safety Radio System
- 4. Traffic Safety Infrastructure
- 5. Black Hawk Water Tower Relocation

I look forward to further discussing our capital proposal in the coming weeks.

Sincerely,

Yang Tao, PhD, PE City Traffic Engineer

Submitted

2020 Capital Improvement Plan **Program Budget Proposal**

Identifying Information

Agency Traffic Engineering **Project Name** Street Light Installation ▼ Project Number 10418 **Project Type** Program **Project Category** Transportation Priority

2020 Munis Project Number 45035

Description

This program funds upgrades or replacements to outdated street lighting systems, including computer support; replacement or painting/refurbishing of older poles, fixtures, cable and other major street light equipment; and installation of new street lights. The goal of the program is to provide adequate lighting on streets for motorists, pedestrians and bicyclists. Progress will be measured by the number of street light outages and emergency repairs. Funding in 2019 is for converting lighting fixtures on Mineral Point Road from Grand Canyon Drive to High Point Road, knockdown repair and replacement, and fixtures for street reconstruction and new development.

Budget Information

Prior Appropriation* \$987,856 Prior Year Actual* \$185,523 *Based on Fiscal Years 2015-2018

Budget by Funding Source

Funding Source		2020	2021	2022	2023	2024	2025
GF GO Borrowing	•	155,000	170,000	175,000	175,000	175,000	180,000
Developer Capital Funding	•	300,000	300,000	300,000	300,000	300,000	300,000
State Sources	•	20,000	20,000	20,000	20,000	20,000	20,000
Other Govt Pmt For Services	▼	30,000	30,000	30,000	30,000	30,000	30,000
County Sources	•	15,000	15,000	15,000	15,000	15,000	15,000
Special Assessment	•	75,000	75,000	75,000	75,000	75,000	75,000
	Total	\$595,000	\$610,000	\$615,000	\$615,000	\$615,000	\$620,000

Budget by Expenditure Type

Expense Type		2020	2021	2022	2023	2024	2025
Streetlighting	•	595,000	610,000	615,000	615,000	615,000	620,000
	Total	\$595,000	\$610,000	\$615,000	\$615,000	\$615,000	\$620,000

■ Insert Expense Type

■ Insert Funding Source

Performance

Metric number of LEDs, new and converted **Data Source** asset inventory records

Baseline Data

	2017 Actual	2018 Actual	2019 Projected	Target
ĺ	374	521	500	550

Priority

Citywide Element Neighborhoods and Housing

Strategy Create complete neighborhoods across the city where residents have access to transportation options and resources needed for daily living

Describe how this project advances the Citywide Element:

Insert item

The purposes of street lighting are to assist drivers, pedestrians, and cyclists in avoiding trafffic hazards. Many business and residents believe that lighting helps prevent crime and helps resident feel safer. MPD has requested new lighting in high pedestrian use area to aid in crowd control.

Project Schedule & Location 2020 Projects Project name Est Cost Location 2020 LED lighting conversion \$75,000 E. Washington, High Point, Bike path lighing 2020 State Street Streetlighting Replacement \$30,000 State Street/ Capitol Square Insert item Explain the justification for selecting projects planned for 2020: These projects will improve public safety for neighborhoods and business areas and reduce energy use. 2021 Proiects Project Name Est Cost 2021 LED lighting conversion \$80,000 Packers Ave (First St to Northport), International Lane, Anderson Road Insert item Explain the justification for selecting projects planned for 2021: These projects will improve public safety for neighborhoods and business areas and reduce energy use. 2022 Projects Est Cost Proiect Name Location 2022 LED lighting conversion \$80,000 Old Sauk Road (from west of Pleasant View to Westfield), High Point Rd north of Old Sauk Rd, Junction Road (Old Sa... Explain the justification for selecting projects planned for 2022: These projects will improve public safety for neighborhoods and business areas and reduce energy use. 2023 Projects Est Cost Location Project name Insert item Explain the justification for selecting projects planned for 2023: 2024 Projects Est Cost Location Insert item Explain the justification for selecting projects planned for 2024: 2025 Projects Project name Est Cost Location Explain the justification for selecting projects planned for 2025: **Operating Costs** What are the estimated annual operating costs associated with the projects planned within this program? Personnel # of Annual Cost Description **FTEs** N/A Non-Personnel Major Amount Description 45200 LED lights are more energy efficient than traditional streetlights and as more LEDs are added the City's electrical expenses per street light are reduced, however the addition of new streetlights in City offsets these LED savings making it difficult to predict citywide annual electrical expenses.

Submit

-0/-010	
Notes	
Notes:	
Save and Close	v. 5-22-201

Submitted 2020 Capital Improvement Plan **Program Budget Proposal Identifying Information** Agency Traffic Engineering **Project Name** Public Safety Radio System ▼ Project Number 10420 **Project Type** Program **Project Category** Transportation Priority 2020 Munis Project Number Description This program funds the purchase of digital emergency communication equipment. The goal of the program is to be compliant with the Dane County Emergency communication system and improve the satisfaction of 911 users. Progress will be measured by feedback from public safety officials and the public. Funding is for routine upgrades of digital emergency communication equipment. **Budget Information Prior Appropriation*** \$12,600,381 Prior Year Actual* \$11,963,012 *Based on Fiscal Years 2015-2018 **Budget by Funding Source** Funding Source 2020 2021 2022 2023 2024 2025 GF GO Borrowing 50,000 50,000 50,000 50,000 50,000 50,000 Total \$50,000 \$50,000 \$50,000 \$50,000 \$50,000 \$50,000 ■ Insert Funding Source **Budget by Expenditure Type** Expense Type 2020 2021 2022 2023 2024 2025 Machinery and Equipment 50,000 50,000 50,000 50,000 50,000 50,000 Total \$50,000 \$50,000 \$50,000 \$50,000 \$50,000 \$50,000 ■ Insert Expense Type Performance Metric **Data Source Baseline Data** 2018 Actual 2017 Actual 2019 Projected Target Priority Citywide Element Effective Government Co-locate community facilities to provide a high level of service to all neighborhoods Describe how this project advances the Citywide Element: **Project Schedule & Location**

in constru	Pi	roject name		
in constru	rniture for new Na	koosa Facility- funding not included	Est Cost	Location
	uction project	Roosa Facility-Turiumg flot included	\$50,000	4141 Nakoosa Trail, Madison WI
Insert i		n for selecting projects planned	for 2020:	
				luding in the project. TE will forgo replacement of conflict monitor this year (budgeted in CIP) in order to fund this
project.				
2021 Pro				
	Pi	oject Name	Est Cost	Location
☑ Insert i Explain t		n for selecting projects planned	for 2021:	
2022 Pro	niacts			
:022 F10		oject Name	Est Cost	Location
Insert i				
Explain t	the justification	n for selecting projects planned	for 2022:	
2023 Pro	niacts			
:023 F10		roject name	Est Cost	Location
Insert i				
Explain t	the justification	n for selecting projects planned	for 2023:	
2024 D				
2024 Pro		roject name	Est Cost	Location
		oject name	Est cost	Location
Insert i	item			
2025 Pro		roject name	Est Cost	Location
■ Insert i	Pi			Location
■ Insert i	Pi	roject name n for selecting projects planned		Location
■ Insert i	Pi			Location
■ Insert i	Pi			Location
■ Inserti Explain t	Pi			Location
■ Inserti Explain t	P.iitem			Location
Insert i Explain t	ng Costs		for 2025:	
Insert i	ng Costs	n for selecting projects planned	for 2025:	
Insert i	Printer Printe	n for selecting projects planned	for 2025:	
Insert in Explain to operation that are the thin this exponnel	the justification ing Costs the estimated as program?	n for selecting projects planned	for 2025:	
Insert in Explain to operation that are the thin this exponnel	Printer Printe	n for selecting projects planned	for 2025:	
Insert in Explain to operation the control of the c	the justification ing Costs the estimated as program?	n for selecting projects planned	for 2025:	
Insert in Explain to operation the control of the c	the justification ing Costs the estimated as program?	n for selecting projects planned nnual operating costs associate Description	for 2025:	
Insert in Explain to operation the control of the c	item the justification ing Costs the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description	for 2025:	
Insert in Explain to Deration that are the second in the s	item the justification ing Costs the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description	for 2025:	
Insert in Explain to Deration at are to the thin this exponned # of ETTEs	item the justification ing COSTS the estimated a program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a	for 2025:	
Insert in Explain to Deration at are to the thin this exponned # of ETTEs	item the justification ing COSTS the estimated a program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	
Insert in Explain to Deration at are to the thin this exponned # of ETTEs	the justification Ing Costs The estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	
Insert item	item the justification ing COSTS the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	ects planned
Insert item	the justification Ing Costs The estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	
Insert item	item the justification ing COSTS the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	ects planned
Insert item	item the justification ing COSTS the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	ects planned
Insert item	item the justification ing COSTS the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	ects planned
Insert item	item the justification ing COSTS the estimated as program? Annual Cost	n for selecting projects planned nnual operating costs associate Description n/a Description	for 2025:	ects planned

v. 5-22-2019 Save and Close

Submitted

2020 Capital Improvement Plan **Program Budget Proposal**

Identifying Information

Agency Traffic Engineering **Project Name** Traffic Signal Installation ▼ Project Number 10427 Project Type Program

Project Category Transportation Priority

2020 Munis Project Number 45029

Description

This program funds replacing and modernizing the City's traffic signal network. The goal of the program is to provide energy efficient dynamic traffic signals that are readily adaptable to provide for safe, efficient traffic flow for vehicles, bicycles, and pedestrians. Progress is measured by analyzing traffic and crash data using industry standards and best practices. In 2019, the funding is for repairs for signal knockdowns and upgrades to pedestrian and traffic signals.

Budget Information

Prior Appropriation*

*Based on Fiscal Years 2015-2018

\$3,584,114 Prior Year Actual*

\$2,615,701

Budget by Funding Source

Funding Source		2020	2021	2022	2023	2024	2025
GF GO Borrowing	•	350,000	355,000	360,000	360,000	360,000	365,000
County Sources	•	30,000	30,000	30,000	30,000	30,000	30,000
Developer Capital Funding	•	110,000	110,000	110,000	110,000	110,000	110,000
Other Govt Pmt For Services	•	50,000	50,000	50,000	50,000	50,000	50,000
State Sources	•	80,000	80,000	80,000	80,000	80,000	80,000
Special Assessment	•	200,000	200,000	200,000	200,000	200,000	200,000
	Total	\$820,000	\$825,000	\$830,000	\$830,000	\$830,000	\$835,000

■ Insert Funding Source

Budget by Expenditure Type

Expense Type		2020	2021	2022	2023	2024	2025
Machinery and Equipment	•	820,000	825,000	830,000	830,000	830,000	835,000
	Total	\$820,000	\$825,000	\$830,000	\$830,000	\$830,000	\$835,000

■ Insert Expense Type

Performance

Metric number of traffic signals installed or upgraded anually

Data Source Asset inventory

Baseline Data

2017 Actual	2018 Actual	2019 Projected	Target
5.4	7.25	7	6

Priority

Citywide Element Land Use and Transportation

Strategy Implement new technologies to more efficiently use existing transportation infrastructure.

Describe how this project advances the Citywide Element:

Modernizing signal infrastructure and management system helps maintian/improve mobility of existing transportation infrastructure. Equipment upgrades are also necessary for compatibility with the City's traffic signal management system.

oject Schedule			
020 Projects			
	roject name	Est Cost	Location
Fransit signal priority pilot		\$120,000	Critical intersections along major transit corridors such as University Ave, E Washington Ave and Park St
Dedicated traffic signals fo	r transit use	\$24,000	Bus Queue Jumps at critical intersections along major transit corridors such as University Ave, E Washington Ave an
2020 Upgrade traffic contr	ol cabinets	\$70,000	Various
	n for selecting projects pla		ng traffic signal gabinate to be gampatible with the City's traffic signal approximant system.
	ny minimizing delay at signalized	intersections, and upgraun	ng traffic signal cabinets to be compatible with the City's traffic signal management system
021 Projects	roject Name	Est Cost	Location
<u> </u>	roject Nume	251 0051	Location
Insert item (plain the justificatio	n for selecting projects pla	nned for 2021:	
022 Projects			
P	roject Name	Est Cost	Location
Insert item (plain the justificatio	n for selecting projects pla	nned for 2022:	
023 Projects			
P	roject name	Est Cost	Location
plain the justificatio	n for selecting projects pla	nned for 2023:	
	roject name	Est Cost	Location
Insert item xplain the justificatio	n for selecting projects pla	nned for 2024:	
025 Projects			
	Project name	Est Cost	Location
Insert item (plain the justificatio	n for selecting projects pla	nned for 2025:	
	annual operating costs asso	ociated with the proje	ects planned
hin this program?			
of Annual Cost	Description		
TEs	Description		
n-Personnel			
gior Amount	Description		
ajor Amount	Description Additional traffic signal e	guipment does slightly	r increase our electrical usage, however our past years experience has shown that the new upgrad
			a net zero to near zero energy cost increase.
insert item			
Save			Submit

Save and Close

Submitted

2020 Capital Improvement Plan **Program Budget Proposal**

Identifying Information

2020 Munis Project Number 45035

Agency Traffic Engineering **Project Name** Traffic Safety Infrastructure ▼ Project Number 10428 **Project Type** Program **Project Category** Transportation Priority

Description

This program funds traffic control devices and the design of the local share of the State Highway Hazard Elimination program, signs, and traffic safety studies. The goal of the program is to improve traffic safety and accessibility for pedestrians, bicyclists, motorists and transit users. Progress is measured by analyzing crash and traffic data using federal standards and professional expertise to determine if improvements are successful and/or if other improvements are required. This program was increased by \$150,000 in GO Borrowing in 2019 by Finance Committee amendment 13. A portion of the funds budgeted in 2019 will be used to purchase two mobile speed boards as identified by Finance Committee amendment 14.

Budget Information

Prior Appropriation*

\$315,456 Prior Year Actual* *Based on Fiscal Years 2015-2018

\$194,915

Budget by Funding Source

Funding Source		2020	2021	2022	2023	2024	2025
GF GO Borrowing	▼	50,000	50,000	50,000	50,000	50,000	50,000
	Total	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

■ Insert Funding Source

Budget by Expenditure Type

Expense Type		2020	2021	2022	2023	2024	2025
Land Improvements	▼	50,000	50,000	50,000	50,000	50,000	50,000
	Total	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

■ Insert Expense Type

Performance

number safety project funded **Data Source** Asset inventory

Baseline Data

2017 Actual	2018 Actual	2019 Projected	Target

Priority

Citywide Element Effective Government

Strategy Ensure all neighborhoods are clean and safe through the provision of quality non-emergency services. Describe how this project advances the Citywide Element:

to effectively respond to traffic safety issues.

	rojects Pi	roject name	Est Cost	Location
Insert		n for selecting projects p	planned for 2020:	
	,	o. oc.ocig p. ojecio p		
021 Pr				
	Pi	oject Name	Est Cost	Location
Insert		- f	-l	
xpıaın	the justification	n for selecting projects p	Dianned for 2021:	
022 Pr	rojects			
	Pi	oject Name	Est Cost	Location
Insert				
xplain	the justification	n for selecting projects p	planned for 2022:	
023 Pr	rojects			
	Pi	roject name	Est Cost	Location
Insert	t item			
xplain	the justification	n for selecting projects p	planned for 2023:	
024 Pr	rojects			
		roject name	Est Cost	Location
Insert xplain		n for selecting projects p	planned for 2024:	
	,	. ro. se.eeg p. ejee.e p		
025 Pr	rojects			
	P	roject name	Est Cost	Location
Insert	t item			
xplain	the justification	n for selecting projects p	planned for 2025:	
erat	ing Costs			
	the estimated a s program?	innual operating costs a	ssociated with the pro	ojects planned
onnel		I		
of	Annual Cost	Description		
IES				
IES				
7ES				
	onnel			
-Perso	onnel Amount	Description		
n-Perso		Description		
n-Perso	Amount	Description		
n-Perso	Amount	Description		
n-Perso	Amount	Description		Submit
n-Perso	Amount	Description		Submit
n-Perso	Amount	Description		Submit

v. 5-22-2019 Save and Close

Submitted 2020 Capital Improvement Plan Project Budget Proposal **Identifying Information** Agency Traffic Engineering **Project Name** Blackhawk Water Tower Relocation ▼ Project Number 12477 **Project Type** Project Priority Project Category Other Description This project funds the relocation of equipment (generator, antennas, and coax) and the construction of a new shelter for the equipment at the Blackhawk Water Tank. With pending lease agreement changes with the University of Wisconsin it is cost effective to move the equipment to a City owned facility. Construction is planned for 2024. Is this project currently included in the 2019 CIP? No **Budget Information Total Project Budget Prior Appropriation** \$350,000 **Budget by Funding Source Funding Source** 2020 2021 2022 2023 2024 2025 350,000 Total \$0 \$0 \$0 \$0 \$350,000 \$0 ■ Insert Funding Source **Budget by Expenditure Type** Expense Type 2023 2024 2020 2021 2022 2025 350.000 Total \$0 Ġ0 \$0 \$0 \$350,000 \$0 ■ Insert Expense Type Performance Metric Is this project completed, resulting in the City no longer have to costly tower rent to UW Physical observation Baseline Target Priority Citywide Element Effective Government Strategy Co-locate community facilities to provide a high level of service to all neighborhoods. Describe how this project advances the Citywide Element: A radio tower location located on the City's far westside is an essential link for citywide coverage of City's Emergency Radio Communications System. The city currently leases tower space from the University of Wisconsin (near West Towne Mall). The City had pre-paid UW \$250,000 for a 25 years lease for this location. This lease expires in Oct. 2020 and in discussions with the UW, they have indicated that annual lease fee would like be from \$40,000 to \$50,000 annually. For the long run, it will be more cost effective for the City to relocate its tower to the City-owned Blackhawk water What is the justification for this project? The relocation of the Tower to Blackhawk would be a more cost effective option than continuing to pay rent to the UW. The UW has not been able to inform the city what it plans to charge the city in the long or short term. The construction costs would be offset in about 8 to 9 years. Also, the relocation would provide the City control as there have been much discussion of relocation of the UW tower due to development. This location meets the technical requirements to replace the UW tower.

Project Schedule & Location

	rt Date: 1/1/202	24	End Date:	12/31/2025					
	202	0	2021	2022	2023	2024	2025		
roject tatus		•	▼	▼	▼	Construction ▼	•		
an this	project be mapp	ed?		Yes ○ No					
Vhat is t	he location of th	ne project?		Blackhawk Water Tower					
Is this project on the Project's Portal?				⊚ Yes ● No					
Vhat are		annual operatin	g costs associated w	ith the project?					
# of FTEs	Annual Cost	Description							
lon-Pers	onnel								
		Description							
Major	Amount								
Major	Amount		of this tower would	reduce rental costs paid to	the UW. The specific ren	tal charges are unknown a	t this time.		
			of this tower would	reduce rental costs paid to	the UW. The specific ren	tal charges are unknown a	t this time.		
Major Insert it			of this tower would	reduce rental costs paid to		tal charges are unknown a	t this time.		
Insert it	em		of this tower would			tal charges are unknown a	t this time.		
Insert it	em		of this tower would			tal charges are unknown a	t this time.		
Insert it	em		of this tower would			tal charges are unknown a	t this time.		