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**Mapping Section Manager**  
Eric T. Pederson, P.S.  
**Financial Manager**  
Steven B. Danner-Rivers

July 11, 2018

To: Dave Schmiedicke, Finance Director

From: Robert F. Phillips, City Engineer

Subject: Engineering Division's 2019 General Fund Budget

The Engineering Division is pleased to submit our 2019 operating budget for the General Fund portion of our City Engineering budget.

The General Fund portion of the budget covers the transportation programming and design functions within the Engineering Division, the City's Facilities and Design agency services, Facilities Operations and Maintenance, the Mapping services, and the Environmental services not related to landfills.

The Transportation Section within the Engineering Division works to build and maintain a well balanced and equitable transportation system consisting of roadways, bridges, sidewalks, and bike paths. The goals are to meet the condition standards for streets that have been established, to maintain the entire network of city sidewalks over a ten-year time frame, build high quality projects through good design and public involvement, and position Madison as a leader in bicycle and pedestrian friendly travel.

The Facilities staff works to provide a high quality work environment and preserve the City's investments in public buildings. Project management and architectural / design services are provided to agencies to insure buildings are constructed to City standards with energy efficient equipment and renewable energy where applicable. Maintenance and custodial staff help to assure that buildings operate at peak efficiency as they were intended. Specific initiatives include our *GreenPower* Program which hires individuals as Solar Installer Trainees to earn while they learn to install Photovoltaic (PV) systems at City sites. Recruitment is targeted to neighborhoods where City Neighborhood Resource Teams are working. The Solar Training Program plays a major role in helping the City work towards its goal of generating 1 Megawatt of renewable energy by 2020. The Engineering Division also plans to hire a HVAC Trainee in 2019.

The Mapping Section maintains comprehensive mapping, data and records including the Official Map, Assessor Parcel / Ownership Maps, Fire Department Run Maps, Police Sector Maps, public land survey system monuments and various utility maps. The Mapping Section protects the land interests of the City as they currently exist and as will be needed in the future. Specific initiatives include working toward completion of the conversion from Microstation to AutoCAD/ArcGIS design and mapping software.

The Engineering Division has submitted three supplemental requests that are partially funded by the general fund.

1. Computer Aided Design (CAD) Licensing – City agencies are undergoing a conversion from Microstation to AutoCAD and ArcGIS for our design and mapping needs. This conversion started in 2018. Yearly

July 11, 2018

Page 2

maintenance fees are required for 2019. Most design software is going to a licensing arrangement rather than the purchase option that was once available.

2. Public Information Officer (PIO) – The Engineering Division currently has no PIO. With over \$90 million in Public Works Construction, a PIO will help the Engineering Division to better communicate with the public. This position will also assist the Storm Utility and the Sewer Utility and is partially funded by those entities as well.
3. Surveyor 2 – The Engineering Division relies on private sector surveyors for our preconstruction land survey needs. This position would allow the Engineering Division to provide this service in house, increasing the quality of the information that is provided to our designers.

If you have any questions, please feel free to contact Steve Danner-Rivers or myself.

Sincerely,

A handwritten signature in dark ink, appearing to read 'R. Phillips', written over a horizontal line.

Robert F. Phillips, P.E.  
City Engineer

RFP:

cc: Travis Martin

**Agency: Engineering**

**Proposed Budget**

	Cost to Continue	Proposed	Change
Revenue	-\$382,530	-\$403,870	-\$21,340
Expenditures	\$5,071,475	\$4,886,173	-\$185,302
Net	\$4,688,945	\$4,482,303	-\$206,642
	2018	Proposed	Change
FTEs	115.1	115.1	0

**Request Analysis**

*2017 Budget*

Overbudget	Yes
2017 Analysis	In 2017 the allocated salary costs realized during the year exceeded the budgeted allocations to Engineering Division.

*2018 Projection*

Deficit	No
Projection Analysis	

*2019 Request*

Budget Request Changes	In Engineering & Admin service 401 the miscellaneous revenue was increased by \$21,000 to reflect the updated maintenance agreement for the Dutch Mill park and ride lot. Position #4100 Custodial Worker 3 is intended to be reclassified to a Program Assistant 1 in 2019. Engineering & Admin Service is expected to be reduced when the position reclassification occurs and position allocation is updated to assign the majority of cost to Stormwater/Sewer/Landfill budgets. No other budgetary changes were made aside from minor realignment of line item amounts with historical spending patterns.
Change in Service	No
Service Impact	
Staffing Levels & Payroll Allocations	

**Engineering Division**

**Function: Public Works & Transportation**

*Position Summary*

	2018			Request		2019		Adopted	
	CG	FTEs	Amount	FTEs	Amount	FTEs	Amount	FTEs	Amount
ACCOUNTANT	18	2.00	119,511	2.00	148,898	-	-	-	-
ADMIN ASST	20	1.00	55,530	1.00	55,743	-	-	-	-
ARCHITECT	18	4.00	354,262	4.00	360,108	-	-	-	-
ARCHITECT AIDE	16	1.00	50,000	1.00	51,509	-	-	-	-
ASST CITY ENGINEER	18	2.00	238,364	2.00	249,291	-	-	-	-
CCTV INSPEC TECH	15	3.00	189,511	3.00	190,848	-	-	-	-
CIVIL TECH	16	1.00	62,743	1.00	62,985	-	-	-	-
COMP MAP/GIS COORD	18	1.00	103,886	1.00	104,285	-	-	-	-
CONSTRUCT INSP	15	12.00	805,749	12.00	801,525	-	-	-	-
CONSTRUCTION MGR	18	3.00	239,441	3.00	241,279	-	-	-	-
CUSTODIAL SERV COORD	16	1.00	49,912	1.00	50,104	-	-	-	-
CUSTODIAL WKR	16	12.50	609,518	12.50	595,661	-	-	-	-
ELECTRICIAN	71	2.00	140,411	2.00	143,172	-	-	-	-
ELECTRICIAN FOREPERS	71	1.00	75,297	1.00	76,018	-	-	-	-
ENGINEER	18	20.00	1,632,529	20.00	1,691,138	-	-	-	-
ENGINEERING FINANCIAL MAN	18	1.00	105,078	1.00	105,395	-	-	-	-
ENGR CITY	21	1.00	146,585	1.00	165,150	-	-	-	-
ENGR FIELD AIDE	15	2.00	118,805	2.00	120,672	-	-	-	-
ENGR OPER LDWKR	15	2.00	127,846	2.00	123,737	-	-	-	-
ENGR PROG SPEC	16	3.00	208,855	3.00	210,111	-	-	-	-
SUSTAIN PROG COORD	18	1.00	66,527	1.00	67,450	-	-	-	-
FAC/SUS MGR	18	1.00	116,583	1.00	116,933	-	-	-	-
HYDROGEOLOGIST	18	0.60	51,081	0.60	51,556	-	-	-	-
IT SPEC	18	1.00	83,175	1.00	83,495	-	-	-	-
LANDSCAPE ARCHITECT	18	1.00	63,193	1.00	66,679	-	-	-	-
MAINT MECH	15	1.00	64,758	1.00	65,007	-	-	-	-
MAINT MECH	16	4.00	255,352	4.00	258,488	-	-	-	-
PLUMBER	71	1.00	70,428	1.00	71,386	-	-	-	-
PRINCIPAL ARCHITECT	18	1.00	91,338	1.00	105,590	-	-	-	-
PRINCIPAL ENGR	18	2.00	216,987	2.00	224,856	-	-	-	-
PRINICPAL ENGR	18	3.00	344,929	3.00	322,897	-	-	-	-
PROG ASST	17	1.00	49,644	1.00	48,739	-	-	-	-
PROG ASST	20	4.00	217,272	4.00	219,261	-	-	-	-
PW DEV MGR	18	2.00	160,520	2.00	177,045	-	-	-	-
S/D MAINT TECH	15	2.00	121,895	2.00	122,364	-	-	-	-
SIDEWALK PROG SUPERV	18	1.00	80,960	1.00	82,316	-	-	-	-
SSMO	15	11.00	544,766	11.00	529,820	-	-	-	-
SURVEYOR	18	2.00	155,606	2.00	157,439	-	-	-	-
<b>TOTAL</b>		<b>115.10</b>	<b>\$ 8,188,848</b>	<b>115.10</b>	<b>\$ 8,318,948</b>	-	\$ -	-	\$ -

## 2019 Operating Budget: Service Proposals

### SERVICE IDENTIFYING INFORMATION

SELECT YOUR AGENCY:

Engineering

SELECT YOUR AGENCY'S SERVICE:

Engineering and Administration

SERVICE DESCRIPTION:

This service is responsible for overall management, contract administration, and administrative support to the Engineering Division. The service is responsible for the design and construction of various transportation and pedestrian infrastructure projects. This service oversees projects pertaining to: 1) Streets and Bridges, 2) Sidewalks, 3) Bike Paths, and 4) Environmental improvements for remediating soil and groundwater contamination.

### SERVICE BUDGET - ALL FUNDS

	2017 Budget	2018 Budget	2019 Cost to Continue	2019 Request	Change
Revenue	-120,240	-130,530	-130,530	-151,870	-21,340
Expense	3,183,905	3,181,550	3,220,311	3,169,380	-50,931
Net Budget	3,063,665	3,051,020	3,089,781	3,017,510	-72,271

### 2019 PROPOSAL

1. Explain the budgetary changes proposed from 2019 Cost to Continue to the 2019 Request.

Revenue: Update of Dutch Mill revenue based on current bus company agreements

Expense: Update of various line items to reflect current projected activity, including reallocation amongst services

2. Explain the operational impact of the proposed changes from 2019 Cost to Continue to 2019 Request.

No operational impacts are anticipated

### SERVICE GOALS

1. Who is the recipient of this service?

- Residents
- Businesses and their employees and customers
- Visitors to our City
- Private developers and contractors

2. What activities are you responsible for providing under this service?

- Plan, design, construct and inspect transportation infrastructure (new development, redevelopment, reconstruction, etc.)
- Land management and plan review services.
- Project estimating, budgeting and reporting.
- Project management, construction inspection and contract administration services.
- Public information process.
- Asset inventory and financial reporting.
- 5 Year Capital Improvement Program
- Inter-agency planning and coordination
- Pavement condition assessment, rating and scheduled preventive maintenance.
- Sidewalk inspection, condition assessment and replacement.
- Bridge inspection, maintenance, repair and replacement.
- Regulatory reporting.
- Excavation in the ROW permitting
- Survey – preliminary, construction staking and as-built
- Construction inspection – public works, private development and redevelopment, excavation in the right-of-way
- Maintenance - snow removal, mowing, median maintenance, pavement and bridge repairs
- Respond to customer complaints and concerns.
- Soil/groundwater remediation

3. How do you define success within this service?

- Provide a safe and efficient transportation network for motorists, bicyclists and pedestrians.
- Comply with regulatory requirements.
- Design, construct and inspect infrastructure to meet our City's transportation needs.
- Build high quality projects through good design and public involvement.
- Meet established condition standards for streets.
- Maintain the entire network of city sidewalks.
- Position Madison as a leader in bicycle and pedestrian friendly travel.
- Protect municipal investment by increasing the useful life and capacities of the system and parts.
- Use operating funds efficiently.
- Perform all activities safely and avoid injury.

4. What strategies are planned for 2019?

- Perform scheduled preventive maintenance activities (crack sealing and chip sealing) to extend the useful life of pavement.
- Assess and rate pavement conditions every two years; resurface based on condition ratings.
- Upgrade facilities as needed to meet capacity demands and support economic development.
- Incorporate bicycle facilities into new and reconstruction projects.
- Inspect, assess condition and replace sidewalks on a district basis on a 10-year cycle.
- Inspect bridges every 2 years; perform maintenance and repairs to extend the useful life of these assets.

## 2019 Operating Budget: Service Proposals

### SERVICE IDENTIFYING INFORMATION

SELECT YOUR AGENCY:

Engineering

SELECT YOUR AGENCY'S SERVICE:

Facilities Management

SERVICE DESCRIPTION:

This service is responsible for the design, project management, and construction supervision of remodeling and construction projects for City-owned facilities. The goal of this service is to implement projects that decrease energy use, conserve water, use renewable sources of energy, and provide high quality facilities.

### SERVICE BUDGET - ALL FUNDS

	2017 Budget	2018 Budget	2019 Cost to Continue	2019 Request	Change
Revenue	0	0	0	0	0
Expense	401,456	632,886	567,269	576,618	9,349
Net Budget	401,456	632,886	567,269	576,618	9,349

### 2019 PROPOSAL

1. Explain the budgetary changes proposed from 2019 Cost to Continue to the 2019 Request.

Update of various line items to reflect current projected activity, including reallocation amongst services

2. Explain the operational impact of the proposed changes from 2019 Cost to Continue to 2019 Request.

No operational impact is anticipated

### SERVICE GOALS

1. Who is the recipient of this service?

- Taxpayers
- Community Members
- City agencies
- Contractors
- Building occupants and users
- Elected officials
- Custodial and maintenance staff

2. What activities are you responsible for providing under this service?

- Space needs assessment and planning
- Cost estimating
- In-house design services
- Procure and oversee consultant design services
- Public informational process
- Plan and specification development, review and approval
- Energy modeling
- Bidding and procurement
- Contract administration
- Quality management observation (QMO) process during construction
- Commissioning and retrocommissioning
- Project warranty administration
- Manage building automation system
- Sustainability Policy development
- Energy Planning/ Reduction of Greenhouse Gases

3. How do you define success within this service?

- Projects result in high quality public spaces and work environments that meet the needs of the user, increase productivity, and provide engaging public space.
- Projects delivered on time and within budget.
- Cost savings and emissions reduction through energy conservation and incorporation of renewable energy systems.

4. What strategies are planned for 2019?

- Continue managing a number of construction projects.
- Develop designs for new building projects
- Implement the 100% Renewable/Zero Net Carbon plan



## 2019 Operating Budget: Service Proposals

### SERVICE IDENTIFYING INFORMATION

SELECT YOUR AGENCY:

Engineering

SELECT YOUR AGENCY'S SERVICE:

Facilities Operations and Maintenance (FOM)

SERVICE DESCRIPTION:

This service is responsible for the maintenance and operational oversight of City-owned facilities including: Madison Municipal Building (MMB), Fairchild Building, 5 district police stations and police training center, 14 fire stations, 7 Public Works facilities, Madison Senior Center, 6 parking ramps, 1 leased facilities, and various storage buildings. The goals of this service are to: 1) improve the operational efficiency of the facilities by implementing energy savings components to the scheduled facility improvements, and 2) optimize municipal investment by increasing the useful life of the City's facilities.

### SERVICE BUDGET - ALL FUNDS

	2017 Budget	2018 Budget	2019 Cost to Continue	2019 Request	Change
Revenue	-321,220	-252,000	-252,000	-252,000	0
Expense	854,194	1,030,911	849,909	698,538	-151,371
Net Budget	532,974	778,911	597,909	446,538	-151,371

### 2019 PROPOSAL

1. Explain the budgetary changes proposed from 2019 Cost to Continue to the 2019 Request.

Administrative correction of Inter-D Billing amounts in CTC to match updated agency budgets for Maint/Custodial. Updates were also made to reflect having MMB back on line again.

2. Explain the operational impact of the proposed changes from 2019 Cost to Continue to 2019 Request.

No operational impacts are anticipated

### SERVICE GOALS

1. Who is the recipient of this service?

- City agencies and their employees occupying the facilities
- Residents
- Businesses and their employees and customers
- Visitors to our City

2. What activities are you responsible for providing under this service?

- Preventive maintenance program for existing equipment and systems.
- Proactive and reactive repairs.
- After-hours emergency response.
- In-house design and installation of mechanical, electrical and plumbing systems replacements and upgrades.
- GreenPower Solar Training Program.
- Custodial services.
- Grounds maintenance – landscaping and snow removal.
- Maintain accurate and current asset inventory.
- Administer CMMS.

3. How do you define success within this service?

- Provide safe and healthy work environments to facilitate the efficient and cost-effective provision of City services.
- Comply with regulatory requirements.
- Reduce use of fossil fuels and associated carbon footprint.
- Minimize building system outages/down time.
- Reduce inconvenience and damage by responsibly handling service interruptions.
- Protect municipal investment by increasing the useful life and capacities of the system and parts.
- Use operating funds efficiently.
- Perform all activities safely and avoid injury.

4. What strategies are planned for 2019?

- Continue preventive maintenance program for existing equipment and systems; expand to incorporate new facilities.
- Continue GreenPower Program to achieve goal of 1 Megawatt of self-generated renewable energy by 2020.
- Continue in-house design and installation of mechanical, electrical and plumbing systems replacements and upgrades.
- Enhance functionality and reporting capability of CMMS.
- Mentor youth apprentice and HVAC/R Technician trainee.

## 2019 Operating Budget: Service Proposals

### SERVICE IDENTIFYING INFORMATION

SELECT YOUR AGENCY:

Engineering

SELECT YOUR AGENCY'S SERVICE:

Mapping and Records

SERVICE DESCRIPTION:

This service provides land management support services to City agencies and private developers and develops and maintains geographic information systems for the City's landbase, streets, shared paths, sidewalks, sanitary sewer and stormwater infrastructure.

### SERVICE BUDGET - ALL FUNDS

	2017 Budget	2018 Budget	2019 Cost to Continue	2019 Request	Change
Revenue	0	0	0	0	0
Expense	392,314	457,174	433,986	440,801	6,815
Net Budget	392,314	457,174	433,986	440,801	6,815

### 2019 PROPOSAL

1. Explain the budgetary changes proposed from 2019 Cost to Continue to the 2019 Request.

Update of various line items to reflect current projected activity, including reallocation amongst services

2. Explain the operational impact of the proposed changes from 2019 Cost to Continue to 2019 Request.

No operational impacts are anticipated

### SERVICE GOALS

1. Who is the recipient of this service?

- Private developers
- Internal City staff

2. What activities are you responsible for providing under this service?

- Land rights acquisitions coordination via eminent domain.
- Street discontinuances and vacations.
- Corporate boundaries, annexations, attachments and detachments.
- Base map and official map maintenance.
- Support service for Office of Real Estate Services (e.g. easements acquisitions and releases; encroachment agreements; title, mapping, land disposal, land acquisition and surveying issues; etc.).
- Plan review (plats, CSM's, site development, condominium, etc.)
- Street naming and addressing.
- Public Land Survey System (PLSS) maintenance
- Base station maintenance
- As-built surveys for sanitary and stormwater infrastructure
- GIS for City parcels, right-of-way, sanitary and stormwater assets.
- Maintain City wide GIS Viewer system – GViewer
- Maintain Engineering data on open data portal
- Manage Orthophotography and LiDAR needs for the City Mapping support for City agencies.
- Hardware and software support for the Mapping/GIS system network.
- Fulfill internal/external requests for data, analysis, and maps

3. How do you define success within this service?

- Comprehensive mapping, data and records – accurate and up-to-date
- Protection of the land interests of the City as they currently exist and as will be needed in the future.
- Valid addresses to facilitate emergency response.

4. What strategies are planned for 2019?

- Complete conversion to AutoCAD/ArcGIS
- Implement automated processes to create GIS features from CAD data.
- Tie address points to street center lines to facilitate 911 dispatching and emergency response.
- Work with IT and Assessor's Office to develop GIS to prepare for Town of Madison annexation.

# Supplemental Request

Agency:

Engineering Division

Enter Your Agency's Service:

Engineering & Administration

Supplement Title:

Annual CAD Licensing

Amount: \$134,000.00

FTE: 0.00

- Expansion to Existing Service  
 New Initiative

Provide an overview of the supplemental request.

In 2018 Engineering, Parks, Traffic Engineering and Water Utility began migrating from Microstation to AutoCAD for design purposes. This change was due to Windows 7 expiring in January 2020. The City's existing design software is not supported on Windows 10. IT will start migrating over to Windows 10 desktop mid 2019.

This supplemental request is for ongoing licensing which is provided on a subscription basis and includes maintenance, upgrades and technical support for all Public Works agencies.

What is the desired outcome of the request?

- Upgrade to software compatible with Windows 10.
- Ability to design in 3D.
- Decreased learning curve for new engineers who are trained in AutoCAD products .
- Better integration with ESRI and Cityworks.
- Automation of some elements of infrastructure mapping from CAD
- No need to convert outside consultant files from AutoCAD to Bentley.
- Better integration with WisDOT projects.

How will the desired outcome be measured?

- Standardized and streamlined design work flows among user agencies.
- Increased accuracy of infrastructure mapping; decreased lag from time of construction to availability in GIS.

# Supplemental Request

Agency:

Engineering Division

Enter Your Agency's Service:

Engineering & Administration

Supplement Title:

Add Public Information Officer Position

Amount: \$64,926.74

FTE: 1.00

- Expansion to Existing Service  
 New Initiative

Provide an overview of the supplemental request.

This position would be responsible for:

- Coordinate public information process for \$90+ million in Public Works construction.
- Communicate information before, during, and after severe weather events that could lead to flooding.
- Conduct public education programs to educate citizens (e.g. proper use of sanitary system; potential impact of climate change on flash flooding events and increasing lake levels; public verses private responsibilities, options for protecting against loss, etc.).
- Develop and maintain relationships with citizens who are trusted in their respective communities; develop and implement of public information processes based on the needs of the specific communities; and foster on-going communication and education.

What is the desired outcome of the request?

- Providing accurate, understandable information to the public in a timely manner so people can take action to minimize damage to property.
- Assure that elected officials remain in the loop with respect to issues impacting their constituents.
- Assure that communication activities are inclusive.

How will the desired outcome be measured?

- Number and type of public participation opportunities
- Number of participants
- Demographics of participants
- Participant satisfaction with participation opportunities

# Supplemental Request

Agency:

Engineering Division

Enter Your Agency's Service:

Engineering & Administration

Supplement Title:

Surveyor 2

Amount:

FTE:

- Expansion to Existing Service
- New Initiative

Provide an overview of the supplemental request.

Add Surveyor 2 to perform preliminary surveys for infrastructure design in-house. This work is currently performed by private surveying companies. With economic recovery becoming problematic to rely on private surveyors. Fewer firms are responding to the RFQ and prices are higher. Increasingly difficult to get these firms to perform this work in a timely manner.

What is the desired outcome of the request?

- Enable Engineering Division to control the schedule, quality and cost of this service.
- Better meet project schedules, improve design quality and reduce the number and cost of change orders.

How will the desired outcome be measured?

- # and % of projects bid per original schedule
- # and cost of change orders