Submittal of Annual Reports and Other Compliance Documents for Municipal Separate Storm Sewer System (MS4) Permits

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. After 120 days your draft is **deleted.**

Form 3400-224(R8/2021)

Reporting Information :

Will you be completing the Annual Report or other submittal type? (•) **Annual Report** ( ) **Other**

Project Name:	2022 Annual Report
County:	Milwaukee
Municipality:	Wauwatosa, City
Permit Number:	S065404
Facility Number:	31319
Reporting Year:	2022

Is this submittal also satisfying an Urban Nonpoint Source Grant funded deliverable? (•) **Yes** ( ) **No**

Please submit grant funded deliverables separately from the annual report.

Required Attachments and Supplemental Information

Please complete the contents of each tab to submit your MS4 permit compliance document. The information included in this checklist is necessary for a complete submittal. A complete and detailed submittal will help us review about your MS4 permit document. To help us make a decision in the shortest amount of time possible, the following information must be submitted:

Annual Report

- Review related web site and instructions for Municipal storm water permit eReporting [Exit Form]
- Complete all required fields on the annual report form and upload required attachments
- Attach the following other supporting documents as appropriate using the attachments tab above
  - Public Education and Outreach Annual Report Summary
  - Public Involvement and Participation Annual Report Summary
  - Illicit Discharge Detection and Elimination Annual Report Summary
  - Construction Site Pollution Control Annual Report Summary
  - Post-Construction Storm Water Management Annual Report Summary
  - Pollution Prevention Annual Report Summary
    - Leaf and Yard Waste Management

        - Municipal Facility (BMP) Inspection Report
        - Municipal Property SWPPP
        - Municipally Property Inspection Report
        - Winter Road Maintenance
    - Storm Sewer Map Annual Report Attachment
    - Storm Water Quality Management Annual Report Attachment
    - TMDL Attachment
    - Storm Water Consortium/Group Report
    - Municipal Cooperation Attachment
    - Other Annual Report Attachment

- Attach the following permit compliance documents as appropriate using the attachments tab above

    - Storm Water Management Program
        - Public Education and Outreach Program
        - Public Involvement and Participation Program
        - Illicit Discharge Detection and Elimination Program
        - Construction Site Pollutant Control Program
        - Post-Construction Storm Water Management Program
        - Pollution Prevention Program
            - Municipal Storm Water Management Facility (BMP) Inventory
            - Municipal Storm Water Management Facility (BMP) Inspection and Maintenance Plan
    - Total Maximum Daily Load documents *(*If applicable, see permit for due dates.)*
        - TMDL Mapping*
        - TMDL Modeling*
        - TMDL Implementation Plan*
        - Fecal Coliform Screening Parameter *
        - Fecal Coliform Inventory and Map *(S050075-03 general permittees Appendix B B.5.2 – document due to the department by March 31, 2022)*
        - Fecal Coliform Source Elimination Plan *(S050075-03 general permittees Appendix B - document due to the department by October 31,2023)*

- Sign and Submit form

Municipal Contact Information- Complete

Notice: Pursuant to s. NR 216.07(8), Wis. Adm. Code, an owner or operator of a Municipal Separate Storm Sewer System (MS4) is required to submit an annual report to the Department of Natural Resources (Department) by March 31 of each year to report on activities for the previous calendar year ("reporting year"). This form is being provided by the Department for the user's convenience for reporting on activities undertaken in each reporting year of the permit term. Personal information collected will be used for administrative purposes and may be provided to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].
Note: Compliance items must be submitted using the Attachments tab.

Municipality Information

Name of Municipality	Wauwatosa, City
Facility ID # or (FIN):	31319
Updated Information:	☐ Check to update mailing address information
Mailing Address:	7725 W. North Ave
Mailing Address 2:	
City:	Wauwatosa, City
State:	WI
Zip Code:	53213 xxxxx or xxxxx-xxxx

Primary Municipal Contact Person (Authorized Representative for MS4 Permit)

The "Authorized Representative" or "Authorized Municipal Contact" includes the municipal official that was charged with compliance and oversight of the permit conditions, and has signature authority for submitting permit documents to the Department (i.e., Mayor, Municipal Administrator, Director of Public Works, City Engineer).

☐ Select to ***create new*** primary contact

First Name:	Maggie
Last Name:	Anderson, P.E.

☑ Select to ***update*** current contact information

Title:	Senior Civil Engineer
Mailing Address:	7725 W. North Ave
Mailing Address 2:	
City:	Wauwatosa
State:	WI
Zip Code:	53213 xxxxx or xxxxx-xxxx
Phone Number:	414-479-3444 Ext: xxx-xxx-xxxx
Email:	manderson@wauwatosa.net

Additional Contacts Information (Optional)

☐ I&E Program
☐ IDDE Program

Individual with responsibility for: (Check all that apply)	☐ IDDE Response Procedure Manual ☐ Municipal-wide Water Quality Plan ☐ Ordinances ☐ Pollution Prevention Program ☐ Post-Construction Program ☑ Winter roadway maintenance
First Name:	Jason
Last Name:	Blasiola
Title:	Ops Superintendent
Mailing Address:	11100 W Walnut Rd
Mailing Address 2:	
City:	Wauwatosa
State:	WI
Zip Code:	53226 xxxxx or xxxxx-xxxx
Phone Number:	414-471-8427 Ext: xxx-xxx-xxxx
Email:	jblasiola@wauwatosa.net
Individual with responsibility for: (Check all that apply)	☑ I&E Program ☐ IDDE Program ☐ IDDE Response Procedure Manual ☐ Municipal-wide Water Quality Plan ☐ Ordinances ☐ Pollution Prevention Program ☐ Post-Construction Program ☐ Winter roadway maintenance
First Name:	Jacob
Last Name:	Fincher
Title:	Executive Director
Mailing Address:	Southeastern Wisconsin Watershed Trust, Inc.
Mailing Address 2:	600 East Greenfield Avenue
City:	Milwaukee
State:	WI
Zip Code:	53204 xxxxx or xxxxx-xxxx
Phone Number:	262-716-2211 Ext: xxx-xxx-xxxx
Email:	fincher@swwtwater.org
	☑ I&E Program ☐ IDDE Program

Individual with responsibility for: (Check all that apply)

- ☐ IDDE Response Procedure Manual
- ☐ Municipal-wide Water Quality Plan
- ☐ Ordinances
- ☐ Pollution Prevention Program
- ☐ Post-Construction Program
- ☐ Winter roadway maintenance

First Name:	Eva
Last Name:	Ennamorato
Title:	Communications Manag
Mailing Address:	7725 W North Ave
Mailing Address 2:	
City:	Wauwatosa
State:	WI
Zip Code:	53213 xxxxx or xxxxx-xxxx
Phone Number:	414-479-8916 Ext: xxx-xxx-xxxx
Email:	eennamorato@wauwatosa.net

Individual with responsibility for: (Check all that apply)

- ☐ I&E Program
- ☐ IDDE Program
- ☐ IDDE Response Procedure Manual
- ☐ Municipal-wide Water Quality Plan
- ☐ Ordinances
- ☐ Pollution Prevention Program
- ☑ Post-Construction Program
- ☐ Winter roadway maintenance

First Name:	Jessica
Last Name:	Henderson
Title:	Civil Engineer
Mailing Address:	7725 W North Ave
Mailing Address 2:	
City:	Wauwatosa
State:	WI
Zip Code:	53213 xxxxx or xxxxx-xxxx
Phone Number:	414-479-8978 Ext: xxx-xxx-xxxx
Email:	jhenderson@wauwatosa.net

- ☐ I&E Program
- ☐ IDDE Program

Individual with responsibility for: (Check all that apply)

- ☐ IDDE Response Procedure Manual
- ☑ Municipal-wide Water Quality Plan
- ☐ Ordinances
- ☐ Pollution Prevention Program
- ☐ Post-Construction Program
- ☐ Winter roadway maintenance

First Name:	Chuck
Last Name:	Boehm
Title:	Brown & Caldwell
Mailing Address:	250 East Wisconsin Avenue
Mailing Address 2:	Suite 1600
City:	Milwaukee
State:	WI
Zip Code:	53202 xxxxx or xxxxx-xxxx
Phone Number:	414-203-2899 Ext: xxx-xxx-xxxx
Email:	CBoehm@BrwnCald.com

Municipal Billing Contact Person (Authorized Representative for MS4 Permit)

☐ Select to ***create new*** Billing contact

First Name:	Maggie
Last Name:	Anderson

☑ Select to ***update*** current contact information

Title:	Senior Civil Engineer
Mailing Address:	7725 W North Ave
Mailing Address 2:	
City:	Wauwatosa
State:	WI
Zip Code:	53213 xxxxx or xxxxx-xxxx
Phone Number:	414-479-3444 Ext: xxx-xxx-xxxx
Email:	manderson@wauwatosa.net

1. Does the municipality rely on another entity to satisfy some of the permit requirements?

◉ Yes ○ No

- ☑ Public Education and Outreach SWWT
- ☑ Public Involvement and Participation SWWT
- ☐ Illicit Discharge Detection and Elimination
- ☐ Construction Site Pollutant Control

☐ Post-Construction Storm Water Management

☐ Pollution Prevention

2. Has there been any changes to the municipality's participation in group efforts towards permit compliances (i.e., the municipality has added or dropped consortium membership)?

○ Yes ◉ No

Minimum Control Measures- Section 1 : Complete

1. Public Education and Outreach

a. Does MS4 conduct any educational efforts or events independently (not with a group) ◉ Yes ○ No

b. How many total educational events were held during the reporting year: 32

c. The permit requires that both passive and interactive mechanisms are utilized. How many interactive mechanisms were used during the reporting year? 7

Topics Covered	Target Audience
☑ Illicit discharge detection and elimination ☑ Household hazardous waste disposal/pet waste management/vehicle washing ☑ Yard waste management/pesticide and fertilizer application ☑ Stream and shoreline management ☑ Residential infiltration ☑ Construction sites and post-construction storm water management ☑ Pollution prevention ☑ Green infrastructure/low impact development ☑ Other: General Watershed Education	☑ General Public ☑ Public Employees ☑ Residents ☑ Businesses ☑ Contractors ☑ Developers ☑ Industries ☐ Public Officials ☑ Other

d. Will additional information/summary of education events be attached to the annual report? ◉ Yes ○ No

If no, please provide additional comment in the brief explanation box below. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See Attachments I and II for more information about the activities performed in partnership with SWWT and by the City of Wauwatosa.

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 2 : Complete

2. Public Involvement and Participation

a. Permit Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how the permit activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	3/21/2023		
Project/Event Name	Common Council Meeting		
Delivery Mechanism	Government Event (Public Hearing, Council Meeting, etc)		
		Estimated People	**Regional Effort**

Topics Covered	Target Audience	Reached (Optional)	(Optional)
☑ MS4 Annual Report ☐ Storm Water Management Program ☐ Storm Water related ordinance ☐ Other:	☑ General Public ☑ Public Employees ☐ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries ☐ Public Officials ☐ Other	11-50	○ Yes ◉ No

b. Volunteer Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how volunteer activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	9/17/2022 ☐ NA (Individual Permittee).
Project/Event Name	Tosa Green Summit
Delivery Mechanism	Presentation of Storm Water Information

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☑ General Public ☐ Public Employees ☑ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries ☐ Public Officials ☐ Other	51-100	○ Yes ◉ No

Event Start Date	4/30/2022 ☐ NA (Individual Permittee).
Project/Event Name	Tosa Takes out the Trash Event
Delivery Mechanism	Clean up event

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	☑ General Public ☐ Public Employees ☑ Residents ☐ Businesses ☐ Contractors ☐ Developers ☐ Industries	11-50	○ Yes ◉ No

	☐ Public Officials ☐ Other		

c. Brief explanation on Public Involvement and Participation reporting. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See Attachment II for more information on the Tosa Green Summit and other efforts made by the City of Wauwatosa

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 3 : Complete

3. Illicit Discharge Detection and Elimination

a.	How many total outfalls does the municipality have?	41	☐ Unsure
b.	How many outfalls did the municipality evaluate as part of their routine ongoing field screening program?	36	☐ Unsure
c.	From the municipality's routine screening, how many were confirmed illicit discharges?	0	☐ Unsure
d.	How many illicit discharge complaints did the municipality receive?	0	☐ Unsure
e.	From the complaints received, how many were confirmed illicit discharges?	0	☐ Unsure
f.	How many of the identified illicit discharges did the municipality eliminate in the reporting year (from both routine screening and complaints)? (If the sum of 3.c. and 3.e. does not equal 3.f., please explain below.)	0	☐ Unsure

g. How many of the following enforcement mechanisms did the municipality use to enforce its illicit discharge ordinance? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

☑ Verbal Warning	1
☑ Written Warning (including email)	1
☐ Notice of Violation	
☐ Civil Penalty/ Citation	

Additional Information:

h. Brief explanation on Illicit Discharge Detection and Elimination reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

Supplemental information on the IDDE reporting is included in Appendix IV and V. IN the 2022 reporting year, we continued to work with Riverkeeper on Bacteria Testing.

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Minimum Control Measures - Section 4 : Complete

4. Construction Site Pollutant Control

a. How many total construction sites with one acre or more of land disturbing construction activity were active at any point in the reporting year? 11 ☐ Unsure

b. How many construction sites with one acre or more of land disturbing construction activity did the municipality issue permits for in the reporting year? 8 ☐ Unsure

c. How many erosion control inspections did the municipality complete in the reporting year (at sites with one acre or more of land disturbing construction activity)? 42 ☐ Unsure

d. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

☐ No Authority	
☑ Verbal Warning	3
☑ Written Warning (including email)	27
☑ Notice of Violation	0
☐ Civil Penalty/ Citation	
☑ Stop Work Order	0
☑ Forfeiture of Deposit	0
☐ Other - Describe below	

e. Brief explanation on Construction Site Pollutant Control reporting . *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

See Attachment VI for supplemental information for Construction Site Pollutant Control.

Minimum Control Measures - Section 5 : Complete

5. Post-Construction Storm Water Management

a. How many sites with new structural storm water management Best Management Practice (BMP) have received local approval ? 5 ☐ Unsure

*Engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins, grassed swales, permeable pavement,

b. Does the MS4 have procedures for inspecting and maintaining private storm water facilities? ◉ Yes ○ No ☐ Unsure

c. If Yes, how many privately owned storm water management facilities were inspected in the reporting year ? 15 ☐ Unsure

Inspections completed by private landowners should be included in the reported number.

d. Does the municipality utilize privately owned storm water management BMP in its pollutant reduction analysis? ◉ Yes ○ No ☐ Unsure

e. If yes, does MS4 have maintenance authority on these privately owned BMPs? 34 ☐ Unsure

f. How many municipally owned storm water management BMPs were inspected in the reporting year? 25 ☐ Unsure

g. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. ☐ Unsure

☐ No Authority	
☑ Verbal Warning	0
☑ Written Warning (including email)	1
☑ Notice of Violation	1
☐ Civil Penalty/ Citation	
☑ Forfeiture of Deposit	0
☑ Complete Maintenance	0
☑ Bill Responsible Party	0
☐ Other - Describe below	

e. Brief explanation on Post-Construction Storm Water Management reporting . *If marked 'Unsure' on any questions above, justify your reasoning. Limit your response to 250 characters and/or attach supplemental information on the attachments page*.

See attachment VII for supplemental information for Post-Construction Storm Water Management.

Minimum Control Measures - Section 6 : Complete

6. Pollution Prevention

Storm Water Management Best Management Practice Inspections ☐ Not Applicable

a. Enter the total number of municipally owned or operated structural storm water management best management practices. 33 ☐ Unsure

b. How many new municipally owned storm water management best management practices were installed in the reporting year ? 0 ☐ Unsure

c. How many municipally owned storm water management best management practices were inspected in the reporting year? 25 ☐ Unsure

d. What elements are looked at during inspections (250 character limit)?

Joints are checked for clogging, pavers are checked for defects.

e. How many of these facilities required maintenance? 9 ☐ Unsure

f. Brief explanation on Storm Water Management Best Management Practice inspection reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

Public Works Yards & Other Municipally Owned Properties (SWPPP Plan Review) ☐ Not Applicable

g. How many municipal properties require a SWPPP? 1 ☐ Unsure

h. How many inspections of municipal properties have been conducted in the reporting year? 4 ☐ Unsure

i. Have amendments to the SWPPPs been made?
○ Yes ◉ No ○ Unsure

j. If yes, describe what changes have been made. Limit response to 250 characters and/or attach supplemental information on the attachment page:

k. Brief explanation on Storm Water Pollution Prevention Plan reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

In 2022, the City contracted with Sigma Engineering to complete an updated SWPP for the DPW Site. The report is due in 2023

Collection Services - *Street Sweeping / Cleaning Program* ☐ Not Applicable

l. Did the municipality conduct street sweeping/cleaning during the reporting year?
◉ Yes ○ No ○ Unsure

m. If known, how many tons of material was removed? 718 ☐ Unsure

n. Does the municipality have a low hazard exemption for this material? ○ Yes ○ No

o. If street cleaning is identified as a storm water best management practice in the pollutant loading analysis, was street cleaning completed at the assumed frequency?

◉ Yes - Explain frequency Every 4 weeks

○ No - Explain _____

○ Not Applicable

Collection Services - *Catch Basin Sump Cleaning Program* ☐ Not Applicable

p. Did the municipality conduct catch basin sump cleaning during the reporting year? ◉ Yes ○ No ○ Unsure

q. How many catch basin sumps were cleaned in the reporting year? 635 ☐ Unsure

r. If known, how many tons of material was collected? 104 ☐ Unsure

s. Does the municipality have a low hazard exemption for this material? ○ Yes ○ No

t.

If catch basin sump cleaning is identified as a storm water best management practice in the pollutant loading analysis, was cleaning completed at the assumed frequency?

- ◉ Yes- Explain frequency: Every other year.
- ○ No - Explain: _____
- ○ Not Applicable

Collection Services - *Leaf Collection Program* ☐ Not Applicable

u. Does the municipality conduct curbside leaf collection? ◉ Yes ○ No ○ Unsure

v. Does the municipality notify homeowners about pickup? ◉ Yes ○ No ○ Unsure

w. Where are the residents directed to store the leaves for collection?

☐ Pile on terrace ☑ Pile in street ☐ Bags on terrace ☐ Unsure

☐ Other - Describe _____

x. What is the frequency of collection?

4 collections from Oct 15 - Nov 30, weather dependent

y. Is collection followed by street sweeping/cleaning? ◉ Yes ○ No ○ Unsure

z. Brief explanation on Collection Services reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*

See Appendix XI

Winter Road Management ☐ Not Applicable

*Note: We are requesting information that goes beyond the reporting year, answer the best you can.

aa. How many lane-miles of roadway is the municipality responsible for doing snow and ice control? (*One mile of a two-way road equals two lane miles*.) 200 ☐ Unsure

ab. Provide amount of de-icing products used by month last winter season?

Solids (tons) (ex. sand, or salt-sand)

Product	Oct	Nov	Dec	Jan	Feb	Mar
Salt	0	401	1024	1197	1733	152

Liquids (gallons) (ex. brine)

	Oct	Nov	Dec	Jan	Feb	Mar
Brine	0	800	12311	20160	23272	5785

ac. Was salt applying machinery calibrated in the reporting year? ◉ Yes ○ No ○ Unsure

ad. Have municipal personnel attended salt reduction strategy training in the reporting year? ◉ Yes ○ No ○ Unsure

Training Date	Training Name	# Attendance
8/23/2022	SaltWise	1

ae.

Brief explanation on Winter Road Management reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*

See Appendix XII

Internal (Staff) Education & Communication

af. Has the municipality provided an opportunity for internal training or education to staff implementing the municipality's procedures for each of the pollution prevention program element ? ◉ Yes ○ No ○ Unsure

If yes, describe what training was provided (250 character limit):

Prior to the winter season and in advance of each snow event, the staff is directed on correct usage of salt and/or brine.

When: October, 2022

How many attended: 9

ag. Describe how the municipality has kept the following local officials and municipal staff aware of the municipal storm water discharge permit programs, procedures and pollution prevention program requirements.

Elected Officials

Common Council presentation on 03-21-23 of 2022 MS4 annual report

Municipal Officials

Board of Public Works presentation on 03-20-23 of 2022 MS4 annual report

Appropriate Staff (such as operators, Department heads, and those that interact with public)

Meetings with Southeastern Wisconsin Watershed Trust, Inc.

ah. Brief explanation on Internal Education reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See Attachment I for more information about the activities performed in partnership with Sweet Water.

Minimum Control Measures - Section 7 : Complete

7. Storm Sewer System Map

a. Did the municipality update their storm sewer map this year?

◉ Yes ○ No ○ Unsure

If yes, check the areas the map items that got updated or changed:

- ☑ Storm water treatment facilities
- ☑ Storm pipes
- ☑ Vegetated swales
- ☑ Outfalls

☐ Other - Describe below

b. Brief explanation on Storm Sewer System Map reporting. *If you marked Unsure for an question for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*.

See Appendix XIII

Final Evaluation - Complete

Fiscal Analysis

Complete the fiscal analysis table provided below. For municipalities that do not break out funding into permit program elements, please enter the monetary amount to your best estimate of what funding may be going towards these programs.

Annual Expenditure Reporting Year	**Budget** Reporting Year	**Budget** Upcoming Year	**Source of Funds**
Element: Public Education and Outreach			
0	0	0	Storm water utility
Element: Public Involvement and Participation			
0	0	0	Storm water utility
Element: Illicit Discharge Detection and Elimination			
0	0	0	Storm water utility
Element: Construction Site Pollutant Control			
0	0	0	Storm water utility
Element: Post-Construction Storm Water Management			
0	0	0	Storm water utility
Element: Pollution Prevention			
0	0	0	Storm water utility
Other (describe)			
			Select...

Please provide a justification for a "0" entered in the Fiscal Analysis. *Limit response to 250 characters*.

See budget summary of Stormwater Management Reserve in Appendix XII

Water Quality

a: Were there any known water quality improvements in the receiving waters to which the municipality's storm sewer system directly discharges to?

○ Yes ◉ No ○ Unsure If Yes, explain below:

b : Were there any known water quality degradation in the receiving waters to which the municipality's storm sewer system directly discharges to?

○ Yes ◉ No ○ Unsure If Yes, explain below:

c: Have any of the receiving waters that the municipality discharges to been added to the impaired waters list during the reporting year?

○ Yes ◉ No ○ Unsure

d: Has the municipality evaluated their storm water practices to reduce the pollutants of concern?

◉ Yes ○ No ○ Unsure

Storm Water Quality Management

a. Has the municipality completed or updated modeling in the reporting year (relating to developed urban area performance standards of s. NR 151.13(2)(b)1., Wis. Adm. Code)? ◉ Yes ○ No

b. If yes, enter percent reduction in the annual average mass discharging from the entire MS4 to surface waters of the state as compared to implementing no storm water management controls:

Total suspended solids (TSS) 17.3

Total phosphorus (TP) 11.9

Additional Information

Based on the municipality's storm water program evaluation, describe any proposed changes to the municipality's storm water program. *If your response exceeds the 250 character limit, attach supplemental information on the attachments page.*

Based on the evaluation in our Stormwater Management Plan, the City is proposing updates to our storm water program. These updates are include in detail in the plan.

Requests for Assistance on Understanding Permit Programs

Would the municipality like the Department to contact them about providing more information on understanding any of the Municipal Separate Storm Sewer Permit programs?

Please select all that apply:

- ☐ Public Education and Outreach
- ☐ Public Involvement and Participation
- ☐ Illicit Discharge Detection and Elimination
- ☐ Construction Site Pollutant Control
- ☐ Post-Construction Storm Water Management
- ☐ Pollution Prevention
- ☐ Storm Water Quality Management
- ☐ Storm Sewer System Map
- ☐ Water Quality Concerns
- ☐ Compliance Schedule Items Due
- ☐ MS4 Program Evaluation

Form 3400-224(R8/2021)

Required Attachments and Supplemental Information

Any other MS4 program information for inclusion in the Annual Report may be attached on here. Use the Add Additional Attachments to add multiple documents.

Upload Required Attachments (15 MB per file limit) - Help reduce file size and trouble shoot file uploads
*Required Item

Note: To replace an existing file, use the 'Click here to attach file ' link or press the to delete an item.

Storm Sewer System Map

File Attachment — XIII_STORMSEWERSYSTEMMAP.pdf

Attach - Other Supporting Documents

AR_SWMap

File Attachment — XIII_STORMSEWERSYSTEMMAP.pdf

AR_IDDE

File Attachment — IV_2022OutfallTesting.pdf

AR_WintRdMain

File Attachment — XII_WINTERROADWAYMAINTENANCEGUIDE.pdf

AR_LeafYardMgmt

File Attachment — XVIII_LeafManagement.pdf

AR_BMPInspSum

File Attachment — IX_GreenAlleyCleaningRecords.pdf

AR_MuniSWPPP

File Attachment — Tosa2008SWPP.pdf

AR_MuniFacInsp

File Attachment — VIII_PublicWorksYardInspections.pdf

AR_SWQM

File Attachment — NoControlsPollutantLoadingResults.xlsx

AR_SWQM

File Attachment

WithControlsPollutantLoadingResults.xlsx

AR_Other

File Attachment

WauwatosaIDDEEnforcementResponsePlan-Revised.pdf

AR_Other

File Attachment

WauwatosaBacteriaSourceMap.pdf

AR_Other

File Attachment

XII_BUDGET.pdf

AR_BMPInspSum

File Attachment

X_SEWERCLEANING.pdf

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Attach - Permit Compliance Documents

CS_Program

File Attachment

VI_ConstructionSitePollutantControl.pdf

PCSSW_Program

File Attachment

VII_Post-ConstructionStormWaterManagement.pdf

EO_Program

File Attachment

I_Wauwatosa2022SWWTReport.pdf

IP_Program

File Attachment

II_WauwatosaStormwaterEducationandPublicInvolvementEfforts.pdf

SWQM_TMDLMap

File Attachment

TMDLMAPPING.pdf

SWQM_TMDLModel

File Attachment

BaseNoControlsConditions.zip

SWQM_TMDLModel

File Attachment

ExistingWithControlsConditions.zip

PP_BMPInsp

File Attachment

VIII_PublicWorksYardInspections.pdf

PP_BMPInventory

File Attachment

DPWFacilityInventory.pdf

SWQM_TMDLBacInv

File Attachment

BACTERIATESTING.pdf

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Sign and Submit Your Application

Steps to Complete the signature process

1. Read and Accept the Terms and Conditions
2. Press the Submit and Send to the DNR button

NOTE: For security purposes all email correspondence will be sent to the address you used when registering your WAMS ID. This may be a different email than that provided in the application. For information on your WAMS account click HERE .

Terms and Conditions

Certification: I hereby certify that I am an authorized representative of the municipality covered under Wauwatosa, City MS4 Permit for which this annual report or other compliance document is being submitted, and that the information contained in this submittal and all attachments were gathered and prepared under my direction or supervision. Based on my inquiry of the person or persons under my direction or supervision involved in the preparation of this document, to the best of my knowledge, the information is true, accurate, and complete. I further certify that the municipality's governing body or delegated representatives have reviewed or been apprised of the contents of this annual report. I understand that Wisconsin law provides severe penalties for submitting false information.

Signee (must check current role prior to accepting terms and conditions)

- (•) Authorized municipal contact using WAMS ID.
- ( ) Delegation of Signature Authority (Form 3400-220) for agent signing on the behalf of the authorized municipal contact.
- ( ) Agent seeking to share this item with authorized municipal contact (authorized municipal contact must get WAMS id and complete signature).

Name:	Maggie Anderson
Title:	Senior Civil Engineer

Authorized Signature.

☑ I accept the above terms and conditions.

Signed by : i:0#.f|wamsmembership|manderson78 on 2023-03-15T16:09:45

You have already signed and submitted this application to the DNR. Please contact the Wisconsin DNR for assistance.

After providing the final authorized signature, the system will send an email to the authorized party and any agents. This email will include a copy to the final read only version of this application.

2022 Sweet Water Public Education Report

City of Wauwatosa

February 2023

sweet water
SOUTHEASTERN WISCONSIN WATERSHEDS TRUST, INC.

Prepared by:
Southeastern WI Watersheds Trust Inc (Sweet Water)
Great Lakes Research Facility
600 E Greenfield Ave
Milwaukee, WI 53204

Prepared for:
City of Wauwatosa
7725 W. North Ave
Wauwatosa, WI 53213

Table of Contents

1. Public Education + Outreach 2022 Programs Summary

The following document was prepared for the City of Wauwatosa to include in their 2022 annual MS4 eReport. It includes a summary of activities conducted to engage in effective public education as mandated by Wisconsin's administrative code - NR216. If you have any questions or would like more information, please contact Brigid Meyers, Watershed Program Manager of Southeastern Wisconsin Watersheds Trust, Inc. (meyers@swwtwater.org).

The Respect Our Waters program identifies a target pollutant of concern, the target audience, delivery mechanism and the entity responsible for implementation (*II.A.1*). In 2022, the program focused on developing materials and implementing mechanisms to educate residents, riparian land owners, those in charge of installation of construction site erosion control, those in charge of stormwater management facilities, developers, and designers in the City of Wauwatosa about sediment pollution. Education and outreach mechanisms include but are not limited to the distribution of print materials, website development, a regional social media campaign, and attending in-person community events. The Respect Our Waters campaign addressed more than three permit topics in 2022 (*II.A.2)* which are outlined in the Respect Our Waters 2022 completed plan. In addition, the program provided a mechanism to track and report the results of this cooperative program (*II.A.*)

The Technical Education Program focused on collaborating with municipalities to identify opportunities to make individual and group education and outreach programs more effective in the City of Wauwatosa. Opportunities to meet and discuss relevant topics were provided, including speakers and moderated meetings. Access to training and additional materials for personalization were developed on an ongoing basis and provided for use. Sweet Water also assessed potential high priority targeted education activities (*II.B.1)* The efficacy of potential activities in the City of Wauwatosa was evaluated in terms of severity of the problem, target audience, pollutants of concern and the ability to achieve a measurable outcome. This was in preparation for implementing an individual educational activity in 2023-24 *(II.B.2)*.

2. Respect Our Waters (*Permit Section II.A)*

Respect Our Waters 2022 Completed Plan			
Audience		General Permit Topic	Activity Completed
Residents	1	Illicit Discharge Detection & Elimination	*Social Media- Section 2.E*
	5	Residential Infiltration	*Webpage Developed- Section 2.A*
			Outreach Templates and Print/Promotional Materials Developed- Section 2.B and 2.C
			Social Media- Section 2.E
	9	Snow and Ice Control	*Social Media- Section 2.E*
Riparian Land Owners	4	Stream and Shoreline Management	*Outreach Templates and Print/Promotional Materials Developed- Section 2.B and 2.C*
			Outreach Templates and Print/Promotional Materials Developed- Section 2.B and 2.C
			Fact Page Developed- Section 2.D
			Social Media- Section 2.E
			Mailing Campaign Implemented - Section 2.F
Groups & Individuals responsible for the design & installation of construction site erosion control practices & SW management facilities	6	Construction Sites and Post-Construction SW Management	*Webpage Developed- Section 2.A*
			Fact Page Developed- Section 2.D
Developers and Designers	8	Green Infrastructure/Low Impact Development	*Outreach Templates and Print/Promotional Materials Developed- Section 2.B and 2.C*
			Fact Page Developed- Section 2.D

2.A. Website

In 2022, Sweet Water staff continued to develop Respect Our Waters website pages for residential, commercial, and construction audiences. This continued campaign intends to raise awareness of stormwater pollution prevention in multiple sectors.

New web pages developed in 2022 include:

- Stream Banks and Shorelines: Erosion Control for a Residential Audience
- Residential Infiltration for a Residential Audience
- Sediment and Erosion Control for Construction Sites for a Construction Audience

Existing web pages for residential audiences include the following topics:

- Illicit Discharge Detection and Elimination
- Watersheds and Stormwater
- The Impacts of Pet Waste, Vehicle Fluids, and Leaves on Stormwater Pollution
- Winter Driveway and Sidewalk Care
- Tips for Residential Green Infrastructure including Rain Gardens, Rain Barrels, Stormwater Trees
- Managing Lawns and Gardens

Existing web pages for non-residential audiences include the following topics:

- Turf Management and Landscaping Pollution Prevention
- Stormwater BMP Management
- Low Impact Development and Green Infrastructure

In 2022, the Respect Our Waters website had a total of 2,900 visitors and 6,000 page views, The newly developed stream banks and shorelines, residential infiltration, and sediment and erosion control pages had 163, 339, and 88 views respectively.

Total visitors: Tracked by visit with a browser cookie that expires after 30 minutes. Any hits within that 30-minute browsing session count as one visit.

Page views: The total number of views (page requests) across all of your pages.

2.B. Outreach Templates

In 2022, Sweet Water staff used Outreach Templates, standardized in 2021, to develop customizable messaging that spanned a variety of the year's stormwater education priority topics. The intention was to allow the City of Wauwatosa and other partners to use outreach mechanisms most utilized by their residents, such as municipal newsletters, social media accounts, and other platforms, to disseminate education. These topics included:

- Erosion Control + Sediment Pollution
- Earth and Arbor Day
- Lawn Maintenance + Infiltration

- Residential Infiltration Techniques
- Green Infrastructure
- Riparian Land Management
- Lakeshore and Streamline Erosion

See Appendix A for examples of the outreach templates.

2.C. Materials

In 2022, Sweet Water staff created flyers and graphics for in-person and virtual forms of outreach. In 2021, a webpage was created to serve as a clearinghouse for all of these materials so that the Village of Grafton and other partners could also access and use these materials. The webpage is accessible at https://www.swwtwater.org/request-support.

New materials that were developed in 2022 and are available on this page include:

- Sediment Pollution Red Flags #1-5 Graphics
- Earth Day Graphics- Research, Storm Drain, Sweep, Downspouts, Native Plant
- Arbor Day Graphics
- Turf Tips Graphics- Native Plants, Long grass, Mowing, Pesticides + Herbicides, Water Use
- Rain Recommendation Graphics- Stormwater Trees, Native Plants, Redirect your downspout, Pavers Permeable Pavement
- Causes of Shoreline Erosion Graphics
- Shoreline Erosion Mitigation Graphic
- Lakeshore Erosion and Sediment Deposition Graphic
- Rivers and Streams Shore Erosion and Sediment Deposition Graphic

See examples of these graphics in Appendix B.

2.D. Fact Sheets

In 2022, Sweet Water staff created fact sheets to provide more detailed information on stormwater pollutants such as the causes, environmental impacts, human health implications, and best management practices for pollutant reduction. Fact sheets were made in conjunction and promoted with outreach templates as well as social media posts. The intention was to direct interested individuals to more in-depth information. Fact sheets addressed the following permit topics in 2022:

- Erosion and Sediment Control
- Green Infrastructure and Low Impact Development
- Riparian Shoreline Erosion and Sediment Pollution

Fact pages are available at swwtwater.org/request-support and respectourwater.org. See examples of the fact sheets in Appendix C.

2.E. Social Media

The Respect Our Waters Facebook page is used to directly reach the general public of Southeastern Wisconsin municipalities and counties. The Facebook page also serves as a depository of posts for the City of Wauwatosa and other partners to share directly with their residents. The following posts were published in 2022, by permit topic:

Table 1: 2022 Respect Our Waters Regional Social Media Campaign Metrics

Illicit Discharge Detection Elimination				
Date	Subtopic	Link Number	Reach	Engagements
1-Jun	Yard maintenance	5672572942770033	146	19
8-Jun	No Dumping	5735427546484572	2,000	155
15-Jun	Detection	5754048901289103	2,500	239
22-Jun	Prevention	5776140559079937	961	114
Residential Infiltration /Green Infrastructure				
29-Apr	Trees	5618540191506642	63	3
11-May	Permeable pavers/ Native Plants/ Rain Garden/ Rain Barrel/ Trees	5651489448211716	518	18
18-May	Rain Gardens/ Rain Barrels	5671853689508625	7,400	98
25-May	Trees	5693582560669071	6,700	381
6-Jul	Native plants	5756038061090187	14,067	1387
Residential Pollution Prevention/ Snow + Ice Control				
18-Jan	Salt	5311429485551049	47	2
22-Apr	Rain Gardens/ Native Plants/Leaf Management	5598390450188283	68	6
4-May	Sediment Pollution Prevention	5631816403512354	85	16
29-Jun	Pet Waste	5756019634425363	287	24
13-Jul	Native plants, erosion control	5756097041084289	94	8
20-Jul	Native plants, fertilizer	5756134014413925	113	3
Stream and Shoreline Management				
27-Jul	Overview	5874902435870415	44	3
3-Aug	Causes	5894237327270259	488	31

10-Aug	Stream vs shore	5913775758649749	2400	114
17-Aug	Mitigation	5933620603331931	1200	150

Link Number: The unique post number. Access the post by typing www.facebook.com/RespectOurWaters/posts/ and then the unique post number after the back-slash.
Reach: The number of people who saw the post at least once. Reach is different from impressions, which may include multiple views of your post by the same people. This metric is estimated by Facebook.
Engagements: The number of reactions, comments, shares and clicks on your post.

2.F. Mailing Campaign

Respect Our Waters sent out a direct mailer to 6,426 addresses in October of 2022. These addresses were selected based on their proximity to water, including riparian land owners and adjacent properties. The mailer graphic was about shoreline erosion, focusing on the effects and solutions of sediment pollution. See a copy of this mailer and a breakdown of the community metrics in Appendix D.

2.G. Events

2.G.1. General Public Events

In 2022, Respect Our Waters attended multiple regional and community events. In 2020 and 2021 the ability of program staff to attend in-person community events was limited by the pandemic. In 2022, we increased the number of events attended which totaled over 10 events reaching 600+ booth visitors. See a list of events attended in 2022 below and more information about reach, topics covered and more in Appendix E.

2.G.2. Professional Event

On September 8th, 2022, Sweet Water hosted the Clean Rivers, Clean Lake Virtual Conference at Milwaukee Area Technical College Mequon Campus. Presentations at this event covered the following permit topics- TMDL Implementation Plans, Wetlands for Stormwater Management, Green Infrastructure as Natural Habitat, and Climate Change impacts on Green Infrastructure. Presentations and presenters included:

- Leveraging Stakeholders for Fox River Restoration: Mark O'Learly, Resource Environmental Solutions, LLC
- Using Green Infrastructure to Create Habitat: Neal O'Reily, University of Wisconsin-Milwaukee and Jennifer Phelps-Vanderberg, Western Great Lakes Bird and Bat Observatory
- TMDL Implementation Planning for Municipal StormWater Permittees: Pete Wood, Wisconsin Department of Natural Resources
- Data Solutions for an Adaptive Management Approach: Brent Brown, Jacobs Engineering

- Streamlining BMP Inspections: Kaley DucOeur, Ruekert & Mielke
- Using Iron-Enhanced Sand Filters to Remove Dissolved Phosphorus from Stormwater: Joe Boxhorn, Southeastern Wisconsin Regional Planning Commission
- Grant Funding for Your Water Quality Improvement Projects: Todd Brieby, Wisconsin Coastal Management Program; Emily Rau, Wisconsin Coastal Management Program, and Casey Eggleston, Fund For Lake Michigan
- Stormwater Wetlands at Ozaukee County Parks: Andrew Struck, Ozaukee County
- Use of Tech Standard 1100 for Large Greenspaces: Dough Soldat, University of Wisconsin-Madison
- Impacts of Residual Road Salt from Groundwater to River Water in Southeastern Wisconsin: Charles Paradis, University of Wisconsin-Milwaukee and Leah Dechant,University of Wisconsin-Milwaukee
- Impacts of Climate Change on Stormwater Infrastructure Design: Rob Montgomery, University of Wisconsin-Madison
- Improving Soil Heath to Reduce Nutrient Loadings: Mike Paulus, Clean Farm Families

Members of City staff who attended this event included:

- Jessica Henderson, Civil Engineer
- Maggie Anderson, Senior Civil Engineer

2.G.3. Menomonee Group Meeting

On October 4, 2022 the Menomonee Permit Group met at the Common Council Chambers in Brookfield, WI. The purpose of the meeting was to bring together the group permittees to talk about updates, upcoming due dates, and permittee progress sharing, the full agenda is included in Appendix F. The following MS4 employee(s) and/or consultants participated:

- Maggie Anderson, Senior Civil Engineer

3.Technical Education Mechanisms *(Permit Section II.B)*

3.A. Meetings

Sweet Water hosted meetings for Technical Education partners for the purpose of addressing relevant topics of concern. Maggie Anderson and Jennifer Stilling, Senior Civil Engineers attended one or more of the following meetings:

I. MS4 Quarterly Meeting #1- 3/23/22
   - Location: Virtual
   - Topics include: Changes to annual reporting form, Toolbox resources, Preparing for an audit, and Educating elected officials.

II. MS4 Quarterly Meeting #2- 6/9/22
   - Location: Virtual

- Topics include: Successful use of native plants and flowers in urban and suburban communities, Budgeting for green infrastructure maintenance, and preparing for a permit audit.

III. MS4 Quarterly Meeting #3- 12/7/22
- Location: Fox Point Village Hall or Virtual
- Topics include: Clean Watersheds Needs Survey, New Tool to Assist MS4 education, Additions to One-stop-shop, Bacteria testing methods in stormwater, and Winter Road Management methods at Jefferson County.

3.B. Permit Group Specific

As a member of the Menomonee Group MS4 consortium, the City of Wauwatosa submitted their StormWater Education Needs by September 30th, 2021 per *Permit Section II.B.1* . This included a list of prioritized stormwater education needs tailored to their communities. In 2022, Sweet Water staff further developed an activity and mechanism to accomplish targeted education in the community with guidance as necessary from the WDNR.The implementation of the individualized activity will be accomplished by September 30, 2023 per *Permit Section II.B.2*.

Appendix A: Outreach Templates and Reports

JANUARY / FEBRUARY 2022 Outreach Template

RESPECT OUR WATERS

INSTRUCTIONS

1) Copy text from the Template
2) Paste text and municipal info into a newsletter, social media post, or on a webpage
3) Include series of five graphics.
4) Send to target audience / the public
5) Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.

Template

Appropriate for websites, newsletters + social media

Sediment is loose sand, soil, or other select types of debris that can be carried by runoff into a stream, river, or lake. Too much sediment makes water murkier, which harms wildlife and aquatic plants. It also affects our ability to use the water for recreational activities.

Help **[MUNICIPALITY]** prevent sediment pollution that may be occurring in our community by keeping your eye out for these *Sediment Pollution Red Flags.*

There are other ways that you can identify and prevent sediment pollution in our community! Visit https://bit.ly/Sediment-Pollution to learn more about sediment pollution, its sources, and how to prevent it!

More Respect Our Waters Resources to Share

Stormwater Pollution Fact Page:
https://www.respectourwaters.org/what-is-stormwater-pollution-swwt or https://bit.ly/Sediment-Pollution
Download the graphics above at the following link: www.swwtwater.org/request-support *
**You can also find un-numbered graphics at this link if you wish to use a sub-set of the five.*

Other Resources to Share

January 24th–28th is Wisconsin SaltWise's Wisconsin Salt Awareness Week. Each day at 12:30 pm they will be broadcasting a 30 minute webinar about the true cost of salt on their YouTube Channel. Topics include:

- *Monday, Jan 24th: The Environmental Toll of Salt and Deicers*
- *Tuesday, Jan 25th: We're Salting our Drinking Water*
- *Wednesday, Jan 26th: Water Softener Salt Goes Where?*
- *Thursday, Jan 27th: Let's Teach about Salt*
- *Friday, Jan 28th: Salt Reduction Efforts across Wisconsin*

WI Salt Awareness Week Registration Page: https://www.wisaltwise.com/Take-Action/Salt-Awareness-Week
WI Salt Awareness Week Facebook Posts to Share: https://www.facebook.com/WISaltWise/
Other SaltWise Public Education Resources: https://www.wisaltwise.com/Partner-Resources

MARCH / APRIL 2022 Outreach Template

RESPECT OUR WATERS

This month's template is slightly different than past templates. Resources included can be used to educate construction contractors. Follow the instructions to learn how!

INSTRUCTIONS

1) Download the Erosion Control + Sediment Pollution Fact Sheet

2a) ***IF*** **you have an erosion control permit**, an **erosion control plan application**, or a similar document, insert the Fact Sheet in this document on an existing blank page or as a new page

2b) ***IF*** **you have a webpage for the erosion control permitting process**, add a section on this page with language from the Web Page Template and the image of the fact sheet

2c) ***IF*** **you have a newsletter or email list that goes to contractors**, send them an email with language from the Email Template and the fact sheet as an attachment

3) Fill out reporting form at https://bit.ly/track-22

Web Page Template

Contractors working in **[MUNICIPALITY]** are responsible for controlling erosion and sediment onsite to prevent sediment pollution. Construction activities can lead to erosion; where possible erosion should be mitigated and where impractical eroded sediment must be managed and contained.

Construction activities that disturb **[ONE ACRE]** or more of land are required to apply for **[AN EROSION CONTROL PERMIT/EROSION CONTROL IMPLEMENTATION PLAN/ETC.]** in **[MUNICIPALITY]**. It is the responsibility of the contractor to properly maintain erosion and sediment control devices that will prevent pollutants from leaving the site.

In addition to a **[FINE/OTHER REPERCUSSION]**, sites with failing or missing erosion and sediment control mechanisms can negatively impact our community. Sediment pollution can lead to water conditions that are unsafe for swimming and fishing, localized flooding, harm to wildlife, and other issues that negatively affect our community's health and quality of life.

To learn more about erosion and sediment control, visit www.RespectOurWaters.org/erosion-control.

Email Template

You are receiving this email because you have been or currently are involved in a construction activity that requires an **[EROSION CONTROL PERMIT/EROSION CONTROL IMPLEMENTATION PLAN/ETC.]**. This is a reminder that the work you do to prevent erosion from your construction site is critically important to the health of our community.

Sediment pollution can lead to many types of problems. You are likely aware that you would face repercussions such as **[A FINE/OTHER REPERCUSSION]**, if you were to violate the terms of your **[PERMIT]**. You may not know that our entire community would also suffer the consequences of poorly maintained or inadequate erosion control or sediment control Best Management Practices. Sediment pollution can lead to water conditions that are unsafe for swimming and fishing, localized flooding, harm to wildlife, and other issues that negatively affect our community's health and quality of life

We thank you for your diligence in choosing, inspecting, and maintaining adequate BMPs to prevent these issues from occurring. Consider printing and posting the following one-pager in your office and at your work sites to help remind you of the importance of the work that you do!

More Respect Our Waters Resources to Share

Erosion Control Web Page: https://www.respectourwaters.org/erosion-control
Erosion/Sediment Control Fact Sheet: Download at https://www.swwtwater.org/request-support

APRIL 2022 *Outreach Template*

RESPECT OUR WATERS

Earth Day and Arbor Day are in April! Below are a few options for social media posts, newsletter tidbits, and other forms of outreach that you can share on these days!

INSTRUCTIONS

1) Copy text from one of the Templates
2) Paste text and municipal info into a newsletter, social media post, or on a webpage
3) Include pictures as appropriate.
4) Send to target audience / the public near or on Earth Day / Arbor Day
5) Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.

Earth Day Template #1

Happy Earth Day!

Are you looking for an activity to make **[MUNICIPALITY]** more beautiful today? Check out the pictures below for a few Earth Day activities that you can do from home!

[Include series of pictures linked below.]

More Respect Our Waters Resources

Earth + Arbor Day graphics: Download these materials at https://www.swwtwater.org/request-support

Stormwater Tree Webpage:
https://www.respectourwaters.org/hardworking-trees-swwt

Arbor Day Template

Happy Arbor Day!

Did you know that in addition to making our community green, our parks shady, and our air fresh, trees help keep our water clean?

Tree leaves catch rain as it falls, preventing it from hitting the ground at a speed that can break up the soil. The roots also prevent the runoff water from picking up soil and carrying it into a river or stream.

On Arbor Day we thank the trees for their hard work preventing soil erosion in **[MUNICIPALITY]**! Learn more at www.respectourwaters.org/hardworking-trees-swwt

Earth Day Template #2

Adopt Your Drain Theme

Happy Earth Day!

Are you looking for an activity to make **[MUNICIPALITY]** more beautiful? Look no further from your own front walk- adopt a storm drain on your block!

All you have to do is find a drain like the one pictured here and clear if of debris so that clean rain water can run through it and into a nearby pond, river, or stream. Don't forget to report that you volunteered at www.adoptyourdrain.com too!

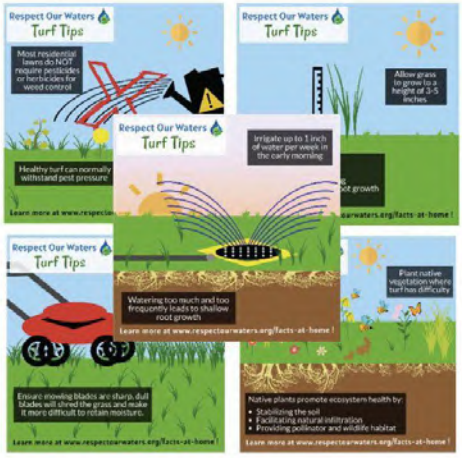
MAY 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Copy text from either Template
2) Paste text and municipal info into a newsletter, social media post, or on a webpage
3) Include series of five graphics.
4) Send to target audience / the public
5) Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.



More Respect Our Waters Resources to Share

Lawn Care Fact Page:
www.respectourwaters.org/residential-lawn-care

Download the graphics above at the following link:
www.swwtwater.org/request-support *

Template Option #1

Appropriate for websites, newsletters + social media

This growing season keep your lawn healthy and stormwater-friendly!

While lawns allow more rain to soak into the soil than pavement, they don't absorb as much water as the natural landscape. Fortunately, proper lawn maintenance can help increase its ability to capture rainwater while also reducing your need for herbicides, pesticides, and fertilizers. This helps prevent flooding and runoff pollution!

Check out these Turf Tips and visit www.respectourwaters.org/residential-lawn-care to learn how to maintain a healthy lawn while also protecting **[MUNICIPALITY]** and your watershed!

Template Option #2

Appropriate for websites, newsletters + social media

Residential lawns need regular maintenance just like cars to extend their longevity and keep them functioning efficiently.

When lawns are poorly maintained, the turf becomes susceptible to pests, diseases, and flooding. It's cheaper and better for water quality if these problems are prevented through maintenance rather than treating problems after they occur with fertilizers, pesticides, or herbicides that could be washed by rain into local lakes and rivers.

Don't wait for a warning light to go off! Check out these Turf Tips and visit www.respectourwaters.org/residential-lawn-care to learn how to maintain a healthy lawn while also protecting **[MUNICIPALITY]** and your watershed!

JUNE 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Copy text from either Template
2) Paste text and municipal info into a newsletter, social media post, or on a webpage
3) Include series of five graphics.
4) Send to target audience / the public
5) Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.

Template Option #1

Appropriate for newsletters + social media. See final page for gallon estimations and number of Giannis'.

Did you know that one inch of rainfall across all of **[MUNICIPALITY]** equals roughly **[X]** gallons of water? If you poured all that stormwater onto an NBA basketball court, it would take Milwaukee Bucks superstar Giannis Antetokounmpo standing on his own head **[Y]** times to reach the surface!

Every little bit of that water that you can collect at home helps us to prevent stormwater pollution! Check out these Respect Our Waters Rain Recommendations for ideas! Learn more at www.respectourwaters.org/facts-at-home!

Template Option #2

Appropriate for newsletters + social media

Summer is finally here! Take advantage of the fair weather and find a way to collect and use rainwater on your property!

There are many benefits to each of the Respect Our Waters Rain Recommendations that you can use at home! Learn more about any of them at www.respectourwaters.org/facts-at-home!

More Respect Our Waters Resources to Share

Download the graphics above: www.swwtwater.org/request-support

Residential Infiltration Fact Pages:

Stormwater Trees: www.respectourwaters.org/hardworking-trees-swwt
Rain Barrels: www.respectourwaters.org/rain-barrels-make-a-difference-swwt
Rain Gardens: www.respectourwaters.org/add-a-rain-garden-swwt
Porous Pavements: www.respectourwaters.org/porous-pavement

Rain Barrel PSA Link: https://youtu.be/FcnTgx54rWs

JULY 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Copy text from either Template
2) Paste text and municipal info into a newsletter, social media post, or on a webpage
3) Include any images that you have of municipal Green Infrastructure projects (if no images are added, an automatic picture will pop up from our website)
4) Send to target audience / the public
5) Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.*

More Respect Our Waters Resources to Share:

Environmentally Sensitive Design Web Page: www.respectourwaters.org/environmentally-sensitive-design
Stormwater BMP Maintenance Web Page: www.respectourwaters.org/stormwater-bmp-maintenance

**If you don't have a municipal stormwater webpage, don't forget that we have a new guide to get you started in developing one! See the Respect Our Waters Website Guide for tips on content to include on this page, Respect Our Waters resources to include, and examples of other municipalities' webpages.*

Access this guide at https://www.swwtwater.org/municipal-newsletter-archive (Password: 20ROW22)

Template Option #1

Appropriate for social media / newsletters

Did you know that in a green infrastructure system, native plant and tree roots, special soils, and temporary storage systems allow rainwater to be captured or absorbed on site instead of causing floods or picking up pollution?

You can see green infrastructure at work in **[MUNICIPALITY]! [INCLUDE 1-2 SENTENCES ABOUT A GI PROJECT IN THE MUNICIPALITY HERE]**.

Learn more about different types of green infrastructure by visiting www.respectourwaters.org/environmentally-sensitive-design .

Template Option #2

Appropriate for social media / newsletters

Did you know that **[MUNCIPALITY]** uses more than just drains and pipes to move water? We also **[CHOOSE APPLICABLE ACTIONS FROM THE FOLLOWING LIST OR INCLUDE OTHER ACTIVITIES: *Plant trees, Use native plants in our landscaping, Build permeable pavements into street projects, Use rain barrels and cisterns on municipal buildings, etc.*]** to move rain water away from buildings and infrastructure and to locations where the water can be treated by natural processes before returning to rivers and lakes.

These types of projects are called green infrastructure, and you can learn more about how they work at www.respectourwaters.org/environmentally-sensitive-design .

AUGUST 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Download the Green Infrastructure + Low Impact Development Fact Sheet
2a) ***IF* you have a web page for green infrastructure, low impact development, or related topics**, add a section on the page with language from your chosen template + link to the fact page
2b) ***IF* you have a newsletter or email list that goes to contractors or developers,** send them an email/newsletter with the language from your chosen template + the fact page
3) Fill out reporting form at https://bit.ly/track-22

MMSD Service Area Template

In **[MUNICIPALITY]**, any development or re-development with 5,000 square feet or more of new impervious area must have a Green Infrastructure (GI) plan that has been submitted to **[proper municipal department]**. GI absorbs or stores stormwater that is prevented from infiltrating into the soil by the newly-developed area so that it doesn't become polluted runoff or lead to localized flooding.

A Green Infrastructure plan can include many different types of GI strategies chosen to best fit the site. Along with managing stormwater sustainably and providing amenities to those who live and work nearby, GI can provide short and long-term cost savings to developers and property owners.

For examples of Green Infrastructure installations and resources for learning more about how to install and maintain GI, visit www.respectourwaters.org/environmentally-sensitive-design.

Non-MMSD Service Area/Non-Built Out Community Template

[MUNICIPALITY] is fortunate to have space to grow our community. Use of on-site stormwater management in new or re-development is key to growing sustainably and mitigating polluted runoff.

Low Impact Design (LID) and Green Infrastructure (GI) strategies can help developers and contractors do their part to maintain ample green space in our community while developing high-quality residential and commercial sites. In many cases, using these strategies can also provide short and long-term cost savings to property owners and developers.

For examples of LID and GI and resources for getting started with these strategies, visit www.respectourwaters.org/environmentally-sensitive-design.

Generic Template

Have you considered or used Green Infrastructure (GI) to prevent stormwater pollution and flooding in a development or re-development project?

The sustainable management of stormwater through the use of GI can provide cost savings to both developers and property owners. Properly chosen, sited, and installed GI can provide community benefits such as green space and reduced flooding, which can boost the prestige of the developer and contractors and improve the community perception of the development.

For examples of Green Infrastructure installations and resources for learning more about how to install and maintain GI, visit www.respectourwaters.org/environmentally-sensitive-design.

Download the GI / LID Fact Sheet at: www.swwtwater.org/request-support

September 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Download the Fact Sheet
2) Choose either Template 1 or Template 2
2a) If you have a webpage for riparian management, add a section on the page with your chosen template language and link to the fact sheet.
2b) If you have a newsletter or email that goes to riparian land workers, send them an email/ newsletter with the language from your chosen template and the fact page.
2c) If you have a social media page, share one of the posts with the associated template language and the paired social media graphic.
3)Fill out reporting form at https://bit.ly/track-22

Recommended: Post links & resources included below on municipal stormwater webpage.*

More Respect Our Waters Resources to Share:

Stream and Shoreline Web Page: www.respectourwaters.org/streams-shore/
Stream and Shoreline Fact Sheet: www.swwtwater.org/s/Riparian-Fact-Sheet.pdf

**If you don't have a municipal stormwater webpage, don't forget that we have a new guide to get you started in developing one! See the Respect Our Waters Website Guide for tips on content to include on this page, Respect Our Waters resources to include, and examples of other municipalities' webpages.*

Access this guide at https://www.swwtwater.org/municipal-newsletter-archive (Password: 20ROW22)

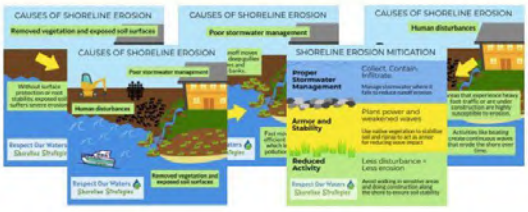
Template Option #1

Appropriate for newsletters/ social media

Lakes and rivers are an essential part of Southeastern Wisconsin, yet they are at risk due to shoreline erosion. An actively eroding shoreline can lead to infrastructure failure and poor water quality.

Thankfully, there are ways we can reduce the amount of shoreline erosion that's occurring! Help **[MUNICIPALITY]** preserve our shorelines by checking out the causes of shoreline erosion and learn how to mitigate it. Visit https://www.respectourwaters.org/streams- shore/ to learn more!

[Include series of pictures linked below]



Template Option #2

Appropriate for newsletters/ webpages

After a summer full of beaching, kayaking, and boating, it's important to assess the state of our shorelines. Lakeshores and stream banks can be impacted by erosion which can occur through:

- Poor stormwater management- stormwater that lands on impervious surfaces and is channelized in one direction can quickly create gullies and rills that erode the shoreline.
- Exposed soil surfaces- without any surface protection or vegetative roots to hold the soil, sediment is easily dislodged and transported to the nearest waterbody.
- Human activity- areas that have heavy foot traffic, or are under construction, can significantly destabilize shorelines. Activities, such as boating, create continuous waves that bombard the shoreline.

These actions can lead to severe sediment pollution, which detrimentally affects the health of these systems and all those who interact with it. To learn more about shoreline erosion and tips for riparian landowners, visit https://www.respectourwaters.org/streams-shore/.

[Include series of pictures linked to the left]

October 2022 *Outreach Template*

RESPECT OUR WATERS

INSTRUCTIONS

1) Choose a topic to share, based on a targeted audience by municipality.
1a) If you have a newsletter or email that goes to riparian land workers, send them an email/ newsletter with the language from your chosen template and the fact page.
1b) If you have a riparian land management webpage, add a section with language chosen from one or both of the templates and the associated graphics with them.
2)Fill out reporting form at https://bit.ly/track-22

Lakeshore Template

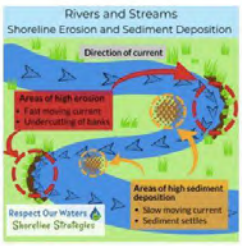
Appropriate for newsletters/ webpages

Both lakes and rivers undergo shoreline erosion, however, their processes and system dynamics differ. One of the major differences between lake and river shoreline erosion is the movement and availability of wind and water.

With a surplus of wind and water available, lakeshores are highly susceptible to shoreline erosion. Recreational activities, like boating, create continuous and consistent waves that batter the shore. When winter comes, frozen waters can expand shorelines, damaging infrastructure and pushing shoreline soils.

As a lakeshore erodes, sediment is quickly transported with the current and is deposited downstream. One property can quickly lose a shoreline, while their neighbor downstream begins to experience an expanding shoreline full of loose sediment.

Check out this graphic to learn about lakeshore erosion and sediment deposition. To learn more, visit https://www.respectourwaters.org/streams-shore/



Streambanks Template

Appropriate for newsletters/ webpages

Both lakes and rivers undergo shoreline erosion, however, their processes and system dynamics differ. Some of the major factors influencing river shoreline erosion are the volume and speed of the current, and the integrity and composition of the shoreline banks.

Due to the continuous movement of the water, rivers and streams are constantly changing shape. This also means that sediment is stripped from the shoreline continually and is transported downstream. Areas with slow-moving currents experience sediment deposition, well areas with fast-moving currents experience strong erosion.

Bankshores with exposed soil surfaces and little to no vegetation are highly susceptible to undermining, causing major chunks of soil to fall into the stream. Infrastructure close to these areas can easily destabilize. This can lead to clogs in the river, making localized flooding a severe issue during major rain events. An eroding streambank can be a significant source of sediment pollution.

Check out the process of shoreline erosion and sediment deposition in rivers and streams with this graphic! To learn more about riparian land management, visit https://www.respectourwaters.org/streams-shore/ .

Download the Stream and Shorelines Fact Sheet at: www.swwtwater.org/request-support

Date	Name	Mechanism/ Activity	Topic	Target Audience	Metrics	Respect Our Waters resource used?	Description
1/26/2022	Leah Hofer	Social Media Post	Sediment Pollution	Residents	Currently Unknown.	Respect Our Waters Template	I used the January/February 2022 Outreach Template on our municipality social media (Facebook, Instagram, and LinkedIn.)
8/4/2022	Theresa Caven	MS4 Staff / Contractor Training	Snow and Ice Control	Contractors (10)	Direct Discussions	WI Salt Wise and MN salt control	Discussions and handouts at Pre-con mtg
12/31/2021	Melanie Kollmansberger, Deputy Clerk	The Caboose Newsletter	Preparing for Winter	Village of Butler Residents	Approximately 1,200 newsletters were mailed out to Village Residents.	Respect Our Waters Template	The December 2021 Long Form Template was included in the Village of Butler Caboose Newsletter.
4/22/2022	Mike Wieser	Social Media Post	Residential Infiltration	Homeowners	We received 147 views of the Facebook post.	Respect Our Waters Print Materials or Graphics	I used the "Redirect Downspouts to a rain barrel or rain garden" template from the March/April Outreach and attached it to a Facebook post.

6/8/2022	Rachel Wilde - Utility Clerk	Social Media Post	Pollution Prevention Activities for Commercial / Technical Audiences	Village of Grafton residents	Views & likes - hasn't been posted yet.	Respect Our Waters Print Materials or Graphics, Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	I am using the June 2022 Template Option #1 for a Water Wednesday Facebook post on 6/8/22, and I am using the June 2022 Template Option #2 for a Water Wednesday Facebook post on 6/22/22.
7/6/2022	Rachel Wilde - Utility Clerk	Social Media Post	Green Infrastructure / Low Impact Development	Homeowners/Village residents	Views & Likes	Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	I used the July 2022 Outreach Template as a Respect Our Waters Watershed Wednesday Facebook post about Green Infrastructure on July 6th.
8/3/2022	Rachel Wilde - Utility Clerk	Social Media Post	Green Infrastructure / Low Impact Development	Homeowners/Grafton residents	Views & Likes	Respect Our Waters "Watershed Wednesday" Facebook Post, Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	I will use the August 2022 Outreach Template for an 8/3/22 Watershed Wednesday Facebook post.

5/18/2022	Rachel Wilde - Utility Office Assistant	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care	Village of Grafton residents	Likes & views - haven't posted yet so unsure of results	Respect Our Waters Print Materials or Graphics, Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	I used May 2022 Template Option #1 for our Water Wednesday Facebook post on 5/18/22; I used May 2022 Template Option #2 for our Water Wednesday Facebook post on 5/25/22
8/11/2021	Renee Rollman	Municipal / County Educational Webpage	Residential Infiltration	Homeowners	We received 8 engagements on this post.	Respect Our Waters.org Education Page	Shared education about capturing rainwater where it falls and provided a link to the respectourwaters.org/facts-at-home page.
8/11/2021	Renee Rollman	Municipal / County Educational Webpage	Residential Infiltration	Homeowners	We received 2 clicks on this website page.	Respect Our Waters.org Education Page, Respect Our Waters YouTube Public Service Announcements	Updated the City's website with latest information on Rain Barrels & Rain Garden resources, including hyperlinks to additional education.
9/13/2021	Renee Rollman	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application /	Homeowners	We received 7 engagements on this post.	Respect Our Waters.org Education Page	Posted about Fertilizers and soil tests and provided a link for more info.

			Lawn Care				
10/7/2021	Renee Rollman	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care	Homeowners	This post received 4 engagements.	Respect Our Waters.org Education Page	Posted about phosphorus and ways to better manage leaves. Provided link to additional education.
12/8/2021	Renee Rollman	Social Media Post	Pollution Prevention Activities for Commercial / Technical Audiences, Green Infrastructure / Low Impact Development	Homeowners	We received 1 engagement on this post.	Respect Our Waters.org Education Page	Posted about preparing properties for winter and provided educational links.
12/20/2021	Renee Rollman	Municipal / County Educational Webpage	Pollution Prevention Activities for Commercial / Technical Audiences, Green Infrastructure / Low Impact Development	Homeowners	We received 2 clicks on this post.	Respect Our Waters.org Education Page	Posted about ice and snow control and provided an educational link.

1/26/2022	Renee Rollman	Social Media Post	Snow and Ice Control	Homeowners	We received 5 engagements on the post.	Saltwise.com	Salt Awareness Week post
1/31/2022	Renee Rollman	Social Media Post	Snow and Ice Control	Winter Maintenance Professionals	We received 2 engagements on this post	saltwise.com	Smart Salting Workshop info post
2/14/2022	Renee Rollman	Municipal / County Educational Webpage	Illicit Discharge Detection & Elimination, Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance, Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care, Residential Infiltration,	Homeowners and contractors	The post received 8 engagements.	Respect Our Waters.org Education Page	We provided info on the City website about preventing sediment pollution.

			Construction or Post-Construction Stormwater Management/ Stormwater Management BMPs, Pollution Prevention Activities for Commercial / Technical Audiences				
3/8/2022	Renee Rollman	Social Media Post	Residential Infiltration	Homeowners	We received 10 engagements on this post.	None	Shared RootPikeWIN's rain barrel fundraiser info

3/15/2022	Renee Rollman	Social Media Post	Illicit Discharge Detection & Elimination, Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance, Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care, Stream and Shoreline Management, Residential Infiltration, Construction or Post-Construction Stormwater Management/ Stormwater Management	Homeowners and contractors	We received 3 engagements on this post	Respect Our Waters.org Education Web Page	We created a post about the importance of Erosion Control measures and shared a link to the Respect Our Waters erosion control page.

			BMPs, Pollution Prevention Activities for Commercial / Technical Audiences				
4/1/2022	Renee Rollman	Social Media Post	Residential Infiltration, Pollution Prevention Activities for Commercial / Technical Audiences, Green Infrastructure / Low Impact Development	Homeowners	The post had several engagement including two "shares"	Respect Our Waters.org Education Web Page	We used info provided from Respect Our Waters to educate about the importance of Arbor Day.
5/10/2022	Renee Rollman	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care, Residential Infiltration	Homeowners	We received 6 engagements on the post.	Respect Our Waters.org Education Web Page	We used a Respectourwaters.org page to provide education on stormwater friendly lawns.

6/2/2022	Renee Rollman	Social Media Post	Residential Infiltration, Green Infrastructure / Low Impact Development	Homeowners	We had 12 engagements on this post.	Respect Our Waters Print Materials or Graphics	For this post we used a ROW graphic with a link to the Rain Garden page.
8/8/2022	Renee Rollman	Social Media Post	Green Infrastructure / Low Impact Development	Businesses and developers	We had 2 engagements on this post	Respect Our Waters.org Education Web Page	We used info from the Respect Our Waters site to educate about low impact developments
9/8/2022	Renee Rollman	Social Media Post	Stream and Shoreline Management	Homeowners	This post had 2 engagements	Respect Our Waters.org Education Web Page	We shared the Respect Our Waters Streams/Shores educational webpage.
9/13/2022	Renee Rollman	Municipal / County Educational Webpage	Residential Infiltration, Construction or Post-Construction Stormwater Management/ Stormwater Management BMPs	Homeowners	We received 3 clicks on the webpage post.	None	We shared the Fresh Coast Guardian's rain garden educational webpage on the City's municipal website.
10/21/2022	Renee Rollman	Social Media Post	Stream and Shoreline Management	General public, park/recreat	We had 5 engagements with	Respect Our Waters.org Education Web Page	We posted about stream and river shoreline erosion and provided an educational link

				ion users	this post		on the topic.
7/8/2022	Renee Rollman, Engineering Specialist	Social Media Post	Residential Infiltration, Green Infrastructure / Low Impact Development	Homeowners	This post had three likes.	Respect Our Waters.org Education Web Page	This post included a photo of the Greenfield City Hall rain garden and provided info and links to green infrastructure education.
7/19/2022	Renee Rollman, Engineering Specialist	Social Media Post	Snow and Ice Control, MS4 Staff / Contractor Stormwater Pollution Prevention Activities	Stow Maintenance Professionals	This post received 5 engagements.	Milwaukee River Keeper Smart Salting Workshops	This post provided links to sign up for Snow and Ice Removal Workshops.
2/28/2022	Matthew Janecke	Social Media Post	MS4 Staff / Contractor Stormwater Pollution Prevention Activities	Homeowners	Opens and Views	Respect Our Waters Template	I shared the ROW Earth Day Activity on our Village website and social media pages
7/8/2022	Matthew Janecke	Municipal / County Educational Webpage	Green Infrastructure / Low Impact Development	homeowners and business owners	Just posted, not outreach data yet.	Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other	I used the July 2022 Outreach Template, Option #1 as a news blast on our website.

						location)	
5/3/2022	Matthew Janecke, Asst. Director of Utilities & Public Works	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care	Homeowners	Unknown at this point	Respect Our Waters.org Education Web Page	
1/28/2022	Cole McCraw, Assistant City Engineer	Newsletter Article / Email Blast	Pollution Prevention Activities for Commercial / Technical Audiences	Homeowners	The email is sent directly to 3,666 subscribers and is available to those who access the website	Respect Our Waters Template	I used the January/February 2022 Long Form Outreach Template in our municipal newsletter

12/7/2021	Cole McCraw, Assistant City Engineer	MS4 Staff / Contractor Training	Illicit Discharge Detection & Elimination, Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance, Pollution Prevention Activities for Commercial / Technical Audiences, Green Infrastructure / Low Impact Development, Snow and Ice Control, MS4 Staff / Contractor Stormwater Pollution Prevention Activities	Municipal engineering staff	2 municipal staff attended the event	Clean Rivers, Clean Lake Virtual Symposium Event (Non Respect Our Waters Activity)	Attended the 2021 Clean Rivers, Clean Lake Virtual Symposium

8/22/2022	Cole McCraw, Assistant City Engineer	Newsletter Article / Email Blast	Green Infrastructure / Low Impact Development	Mequon newsletter subscribers	The newsletter is sent to over 3,500 subscribers	Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	
9/30/2022	Cole McCraw, Assistant City Engineer	Newsletter Article / Email Blast	Stream and Shoreline Management	Riparian owners, anyone who receives newsletter	The newsletter is sent to over 3,500 subscribers	Respect Our Waters.org Education Web Page, Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	September outreach template added to the Mequon weekly bulletin
4/5/2022	Solomon Bekele	Municipal / County Educational Webpage	MS4 Staff / Contractor Stormwater Pollution Prevention Activities	Contractors and homeowners	We have 131 views on the DPW's pollution prevention page.	Respect Our Waters Print Materials or Graphics	We copied and edited the ROWs' Web Page Template for sediment and erosion control and posted it on the City's DPW stormwater management website under pollution prevention. The Erosion/Sediment Control Fact Sheet is also posted. We also did the same to the Earth Day Template #2,

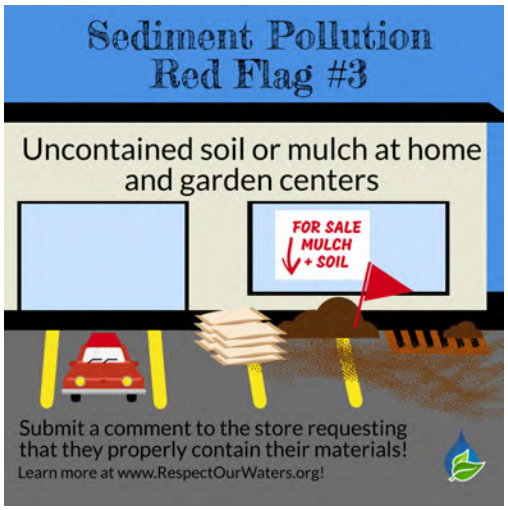
							encouraging homeowners to adopt a drain.
12/2022	Craig Schroeder, Superintendent Department of Public Works	Mailer/ Distribution of Print Materials	Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance, Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care, Residential Infiltration	Residents	We sent 645 fliers to residents in our tax bill	Respect Our Waters Print Materials or Graphics	We sent our 645 fliers to our residents in our tax bills that included information on Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance, Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care, and Residential Infiltration.
1/27/2022	Robert Hutter	Social Media Post	Snow and Ice Control	All People who subscribe to the City's Facebook page	Monitoring the amount of "Likes" and "Comments"	Respect Our Waters Template	Copied the Salt Awareness Week Facebook posts to the City of West Allis Facebook Post
1/26/2022	Robert Hutter, Principal Engineer	Newsletter Article / Email Blast	Snow and Ice Control	Homeowners and business	Email went out to all	Respect Our Waters Template	Posted about Salt Awareness Week

				owners	residents who sign up for the community updates		
1/25/2022	Kayla Fitzgerald, Administrative Assistant	Municipal / County Educational Webpage	Pollution Prevention Activities for Commercial / Technical Audiences, Snow and Ice Control, MS4 Staff / Contractor Stormwater Pollution Prevention Activities	West Milwaukee Residents	All West Milwaukee residents have access to the municipal website. It was posted on the front page.	Respect Our Waters Template	I used the 2022 January/February Template on our municipal website.
1/25/2022	Kayla Fitzgerald, Administrative Assistant	Newsletter Article / Email Blast	Snow and Ice Control, MS4 Staff / Contractor Stormwater Pollution Prevention Activities	West Milwaukee Residents	All West Milwaukee residential properties receive a newsletter.	Respect Our Waters Template	I used the 2022 January/February template in our municipal newsletter.

1/21/2022	Kim Egan	Social Media Post	Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care	Village residents	We did not measure the outreach.	Respect Our Waters.org Education Page	Posted information on the front page of our web site
5/25/2022	Kim Egan, Adminsitrator	Newsletter Article / Email Blast	Residential Infiltration	Homeowners	2,516 newsletters are distributed to residents	Template Language shared in the Outreach Template (used in a Newsletter, Social Media Post, or other location)	We used the May June template in our newsletter.
1/31/2022	Tim Blakeslee - Assistant Village Manager	Newsletter Article / Email Blast	Illicit Discharge Detection & Elimination	Village residents	3,336 newsletter opens. 9 clicks on link for this item	Respect Our Waters Template	January/Februayr Respect our waters template for newsletter on January 31, 2022

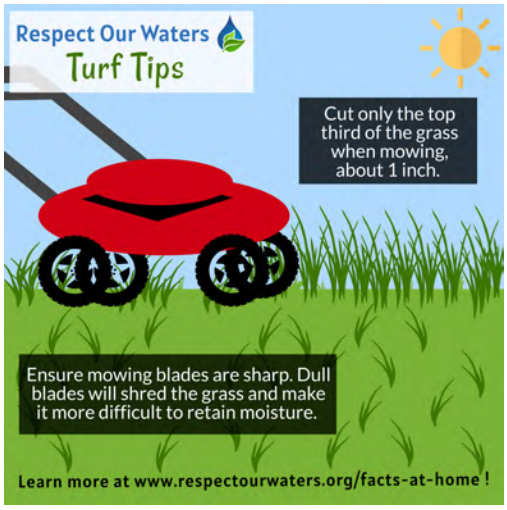
Appendix B: Respect Our Waters Materials

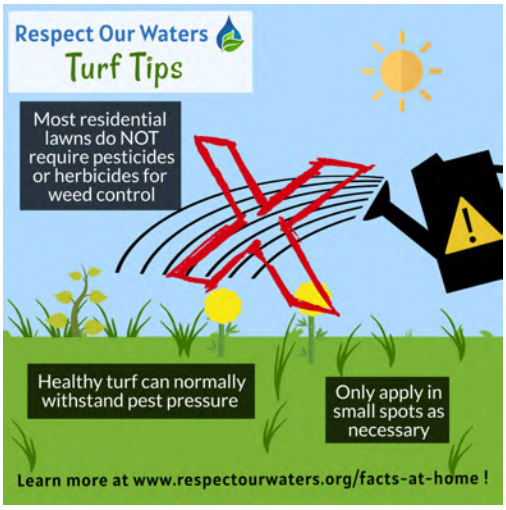
Sediment Pollution Red Flags:

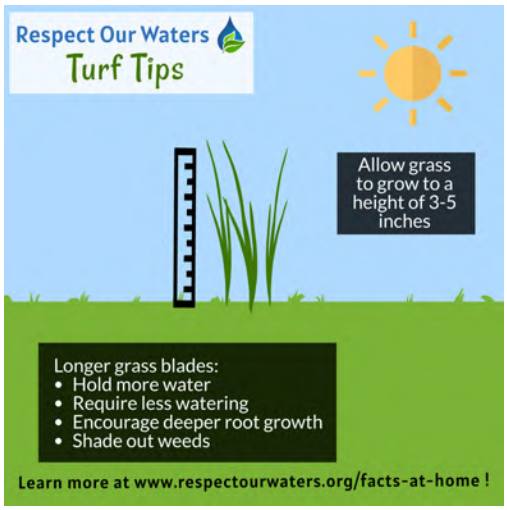


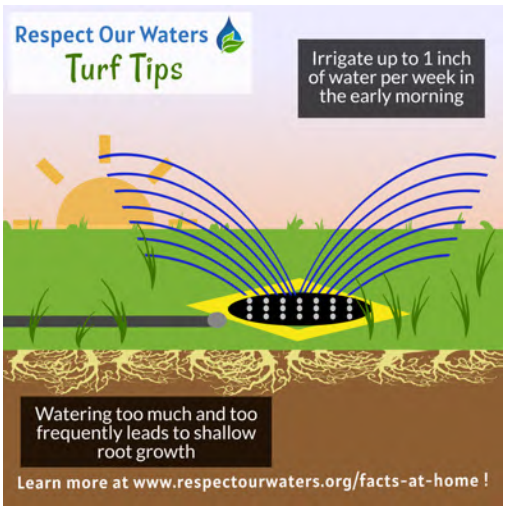
Earth & Arbor Day Graphics:

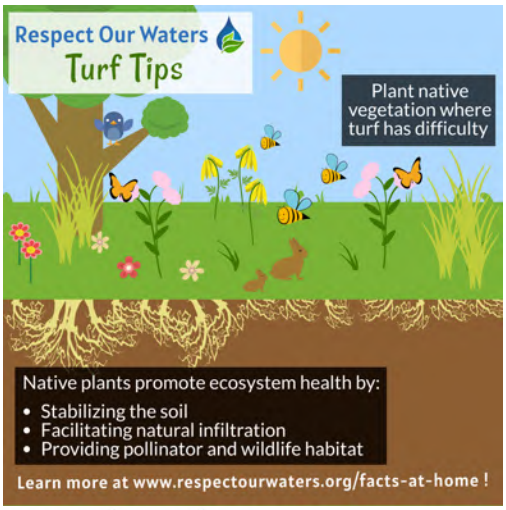
Turf Tips Graphics:





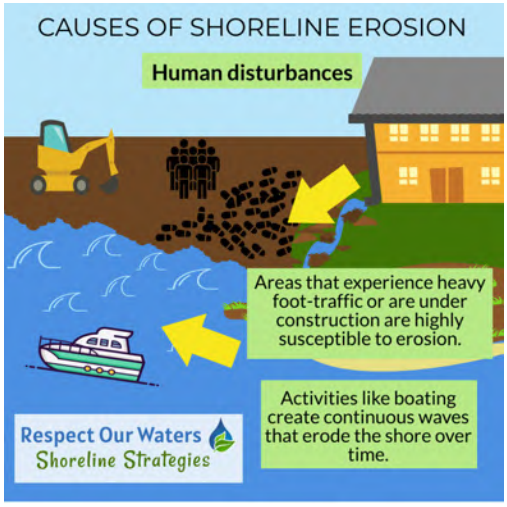






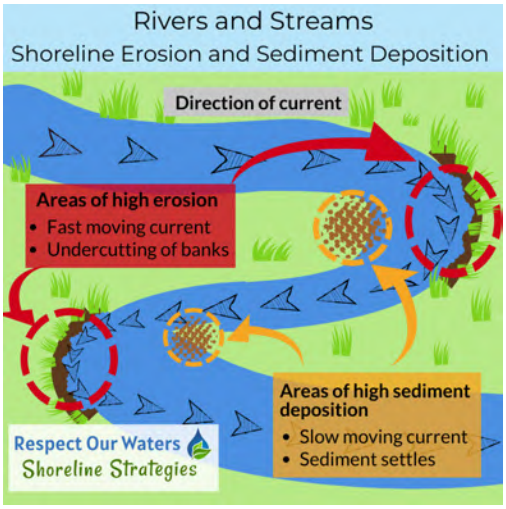
Rain Recommendations Graphics:

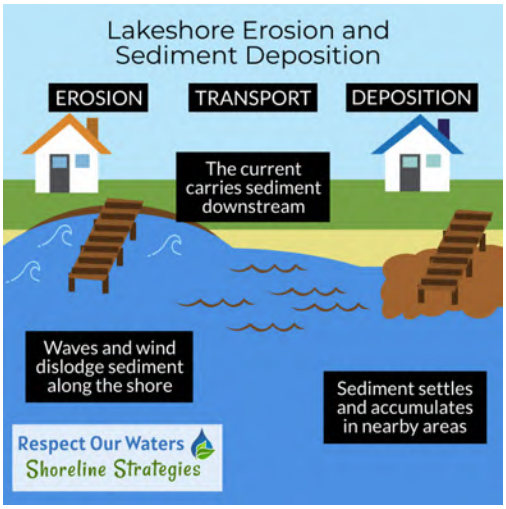
Stream and Shoreline Graphics:




CAUSES OF SHORELINE EROSION
Poor stormwater management
Channelized runoff moves quickly, making deep gullies along slopes and undercuts banks.
Fast moving water is very efficient at dislodging soil, which leads to sediment pollution and deposition.
Respect Our Waters
Shoreline Strategies

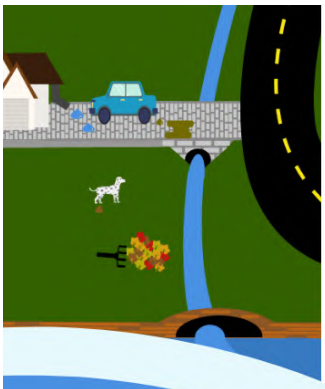

CAUSES OF SHORELINE EROSION
Poor stormwater management
Human disturbances
Removed vegetation and exposed soil surfaces
Respect Our Waters
Shoreline Strategies


Rivers and Streams
Shoreline Erosion and Sediment Deposition
Direction of current
Areas of high erosion
• Fast moving current
• Undercutting of banks
Areas of high sediment deposition
• Slow moving current
• Sediment settles
Respect Our Waters
Shoreline Strategies


Lakeshore Erosion and Sediment Deposition
EROSION
TRANSPORT
DEPOSITION
The current carries sediment downstream
Waves and wind dislodge sediment along the shore
Sediment settles and accumulates in nearby areas
Respect Our Waters
Shoreline Strategies


SHORELINE EROSION MITIGATION
Proper Stormwater Management
Collect. Contain. Infiltrate.
Manage stormwater where it falls to reduce runoff erosion
Armor and Stability
Plant power and weakened waves
Use native vegetation to stabilize soil and riprap to act as armor for reducing wave impact
Reduced Activity
Less disturbance = Less erosion
Avoid walking in sensitive areas and doing construction along the shore to ensure soil stability
Respect Our Waters
Shoreline Strategies

Ditches and swales brochure

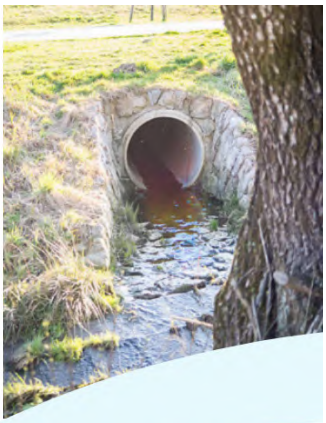


About Us

We all live in a watershed. Here in Southeastern Wisconsin, the Greater Milwaukee River Watersheds drain to Lake Michigan. Our goal is to restore these watersheds to conditions that are healthy for swimming and fishing.

Each of us can have a positive impact on the health our local water, and if we each do our part, all of our individual actions will add up! So, let's start together, in our own homes, and help to protect our rivers and Lake Michigan!

RESPECT OUR WATERS



What is Stormwater Runoff?

Rain and melting snow that flows off rooftops, streets, lawns, parking lots, and farmland is classified as stormwater runoff.

Stormwater runoff picks up excess fertilizer and pesticides, oil, sand, leaves, grass clippings, and many other pollutants.

Unlike sewage, stormwater does not flow into a treatment plant to be cleaned, so it is critical that we all do our part to prevent pollution from getting into stormwater runoff.

Contact Us

Email Address: info@respectourwaters.org
Web: respectourwaters.org
Phone: 414-382-1766

Stormwater runoff pictures obtained from *istock.com*

Ditches and Swales

Keep them Clean and Clear

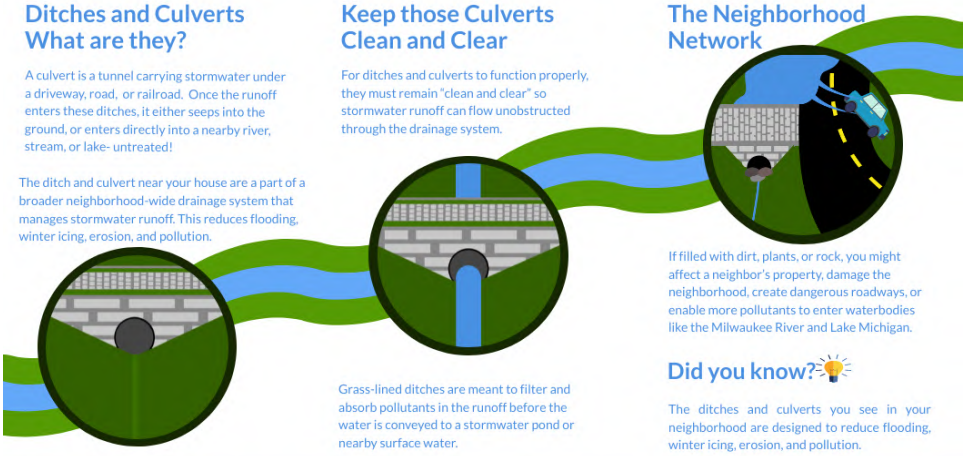
Ditches and Culverts What are they?

A culvert is a tunnel carrying stormwater under a driveway, road, or railroad. Once the runoff enters these ditches, it either seeps into the ground, or enters directly into a nearby river, stream, or lake- untreated!

The ditch and culvert near your house are a part of a broader neighborhood-wide drainage system that manages stormwater runoff. This reduces flooding, winter icing, erosion, and pollution.

Keep those Culverts Clean and Clear

For ditches and culverts to function properly, they must remain "clean and clear" so stormwater runoff can flow unobstructed through the drainage system.



Grass-lined ditches are meant to filter and absorb pollutants in the runoff before the water is conveyed to a stormwater pond or nearby surface water.

The Neighborhood Network

If filled with dirt, plants, or rock, you might affect a neighbor's property, damage the neighborhood, create dangerous roadways, or enable more pollutants to enter waterbodies like the Milwaukee River and Lake Michigan.

Did you know?

The ditches and culverts you see in your neighborhood are designed to reduce flooding, winter icing, erosion, and pollution.

Stormwater Tips

Scoop the poop
Clean up after your pets, and don't feed the water fowl!

Don't be a drip
Inspect your car regularly to stop all oil and fuel leaks.

Disconnect
Direct downspouts to rain barrels, yard, or garden instead of the sewer or driveway.

Give your rake a break
Leave grass clippings on your lawn or compost them.

Wash carefully
Take your car to a car wash, or wash it on your lawn instead of your driveway.

Capture Rainwater
Plant a rain garden and trees.

Appendix C. Fact Sheets

Respect Our Waters
Construction Sediment + Erosion Control Fact Sheet

According to a joint publication of Wisconsin DNR + UW Extension, for every acre under construction, about a dump truck and a half of soil will erode into a local lake or stream in the absence of erosion controls.

Sediment pollution can create a slew of problems if control devices and management practices are not put in place and maintained. Stormwater, or water from precipitation, can carry soils and sediments disturbed by construction activities into local lakes, rivers, and streams, potentially causing the following problems:

- Clogged storm drains and storm sewer systems, which can lead to localized flooding
- Changed stream morphology (size and shape)
- Increased water temperature from sediment particles retaining heat from sunlight
- Increased nutrient leaching, especially phosphorus, from sediment particles
- Decreased native aquatic vegetation from lack of sunlight
- Fish kills that result from lack of food sources, sediment clogging gills and covering eggs, and changes in water chemistry

Many of these problems lead to a larger issue of excessive algae growth and decay, which also depletes the amount of oxygen in the water. This leads to a set of public health problems:

Environmental Health: Waterbodies once home to fish and native vegetation are suffocated by invasive weeds and toxic algal blooms.

Human Health: Higher concentrations of pollutants and suspended sediment lead to longer and more expensive treatment processes. This can also taint the taste of the water, giving it an odd odor.

Community Health: Flooded streets and lost recreational activities, like swimming and fishing, can cause a decline in community confidence and overall health.

Sediment and erosion control protects our *shared* water resources and safeguards public health. Wisconsin Department of Natural Resources defines the following points as the basic principles of erosion and sediment control:

- **Planning + Preservation:** Minimize open area by phasing or sequencing construction and preserving existing vegetation where possible.
- **Diversion:** Divert stormwater away from disturbed or exposed areas when possible.
- **Installation:** Install BMPs to control erosion and sediment and manage stormwater.
- **Inspection + Maintenance:** Inspect the site regularly and properly maintain BMPs, especially after rainstorms.
- **Evaluate:** Revise the plan as site conditions change during construction and improve the plans if BMPs are not effectively controlling erosion and sediment.
- **Housekeeping:** Keep the construction site clean by putting trash in trash cans, keeping storage bins covered, and preventing or removing excess sediment on roads and other impervious surfaces.

The proper use and management of sediment and erosion control devices and techniques significantly reduces the risk of stormwater contamination. Visit www.RespectOurWaters.org/erosion-control to learn more about the impacts of sediment pollution and to find a list of resources to learn more about implementing and maintaining specific erosion and sediment control best management practices.

This Fact Sheet is brought to you by Respect Our Waters. Last Updated March 2022.

Sources: "GWQ001 Erosion Control for Home Builders." *Cooperative Extension Publications*, Madison. **&** "Erosion Control and Storm Water Management Plans", Wisconsin DNR. (https://dnr.wisconsin.gov/topic/Stormwater/construction/erosion_control.html). Last accessed Mar 3, 2022.

Respect Our Waters
Green Infrastructure + Low Impact Design Fact Sheet

Green infrastructure uses "plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters."[1]

Fact 1: Green infrastructure is a nationally recognized, impactful strategy for managing stormwater & is required in some new or re-development projects in some areas of Wisconsin.

Within the Milwaukee Metropolitan Sewerage District Service Area, new or re-developments that meet a certain set of criteria must follow rules set by the District for developing and implementing GI plans.[2] In larger developments such as new subdivisions or business parks, **Low Impact Development (LID) takes green infrastructure strategies and merges them with other techniques to also achieve improved stormwater management.** LID may go hand-in-hand with community open space or green space ordinances.

Fact 2: GI and LID can save developers and site owners money and increase their property values while also providing benefits to surrounding residents that improve quality of life.

Benefits can include[3]:

Reducing the amount of salt needed for snow & ice control + **Improving** localized **air & water** quality
Improving community **aesthetics & cohesion** + **Reducing urban heat island** effect & **noise** pollution
Increasing urban **habitat & agriculture** opportunities + **Reducing energy usage** for heating & cooling

Fact 3: The key to unlocking these benefits is choosing the right GI or LID strategies that are also appropriate for the site.

GI strategies that may be appropriate for new developments or re-developments include:

Rainwater Harvesting Structures: These structures capture water for future use. Rain barrels are often used on smaller properties while above or below-ground cisterns can be used on larger properties.

Rain Gardens: Rain gardens are designed to capture rainwater and divert it from becoming runoff. This is done by placing the garden in a location where water will run towards it, modifying the soil so that water can filter into the ground, and using plants that can tolerate moisture and also help water soak into the ground.

Bioswales: Bioswales are similar to rain gardens but they also function as channels to move water away from infrastructure while also allowing for infiltration. They are generally built on larger private or public properties, or in right-of-ways. They may have native plants or grasses planted within them.

Pervious/Permeable Pavements: Pervious pavements & pavers reduce runoff from parking lots, roads, or other paved areas. Gaps between pavers or within the aggregate allows water to filter into the soil beneath.

Blue/Green Roofs: Green roofs use water to nourish plants that are planted on the roof or in trays that are placed in grids on the roof. Blue/green roofs also store extra water for later use in cisterns or other devices.

Tree Canopy: Trees are green infrastructure too! Their leaves catch water before it hits the ground, allowing some to evaporate and some to run down into the earth more slowly. Their roots help absorb water and direct some of it down into the soil. The roots also hold soil in place so it isn't washed away.

For more information about GI and LID, examples in southeastern Wisconsin, and other resources, visit www.respectourwaters.org/environmentally-sensitive-design.

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[1] Water Infrastructure Improvement Act of 2019, H.R. 7279, 115th Cong. §5(a)(27) (2019).
[2] Milwaukee Metropolitan Sewerage District. (2020, July 27). Chapter 13: Surface Water and Storm Water. https://www.mmsd.com/application/files/9515/9621/1174/Chapter_13_July_2020.pdf
[3] Center for Neighborhood Technology and American Rivers. (2010) *The Value of Green Infrastructure: A Guide to Recognizing Its Economic, Environmental and Social Benefits.* https://cnt.org/sites/default/files/publications/CNT_Value-of-Green-Infrastructure.pdf

Respect Our Waters
Riparian Shoreline Erosion and Sediment Pollution Fact Sheet

***Riparian Zone**: the area of banks and shores where land and river/lake interact, the junction of terrestrial and aquatic environments.*

Lakes and rivers/ streams provide an abundance of enjoyment. Everything from drinking water, to recreational activities like boating and fishing, to purely aesthetic beauty, these grand environments provide endless opportunities. To preserve these sensitive riparian ecosystems, we must manage our land to reduce shoreline erosion and sediment pollution.

Problems Associated with Shoreline Erosion

Actively eroding shorelines can: undercut banks and destabilize infrastructure near the waterbody, like bridges and buildings; lead to a loss in shoreline; add significant amounts of sediment that leads to sediment pollution.
Sediment accumulation and deposition can: fill reservoirs and reduce holding capacity; clog rivers and streams that induce localized flooding; extend shorelines and change waterbody shape.
Excessive suspended sediment can: detrimentally affect fisheries and exacerbate algae growth; limit recreational activities like boating and fishing; make the water treatment process longer and more expensive

Causes of Shoreline Erosion

Poor Stormwater Management- stormwater that lands on impervious surfaces and gets channelized in a single direction can quickly scour the land and transport sediment into the nearest waterbody.
Exposed soil surfaces- without a surface cover and no vegetative roots to stabilize the soil, exposed soil surfaces are highly susceptible to erosion from wind, rain, and runoff.
Human Disturbances- areas that experience heavy foot traffic or are under construction can easily be dislodged.

As a shoreline destabilizes and erodes, it can quickly escalate in severity over a short period. That is why it is essential to be proactive and continuously monitor the shoreline.

Shoreline Erosion Mitigation Strategies

Proper Stormwater Management- Collect. Contain. Infiltrate. Use green infrastructure like rain barrels and rain gardens to decrease stormwater runoff volume, and redirect surface runoff from steep slopes to prevent gully formation.
Armor and Vegetation- Plant native vegetation over any exposed soil surfaces, they offer surface protection and provide deeper soil stability with their long roots. Riprap can be placed along shorelines to reduce wave impact erosion. However, be mindful of placement for poorly placed riprap can degrade aquatic habitats and cause erosion to occur in other places.
Reduced Human Activity- Avoid construction within 100 feet of water bodies. Avoid walking on steep slopes and areas of high foot traffic, less disbursement means less sediment dislodged.

Lakeshore vs. Stream/Rivershore Erosion Influencers

The rate of erosion for lakeshores is often influenced by weather conditions and human activity. With a surplus of wind and water available, lakeshores experience shoreline erosion daily. More waves impacting the shoreline means more erosion. When winter comes, ice movement can push shoreline soils and damage nearby infrastructure. Streamshore erosion is often influenced by the quantity and speed of the current, and by exposed soil bankshores. Fast-moving currents with lots of water have a strong ability to strip away sediment and cause the undercutting of banks at curves along the river/ stream. A lack of vegetative support exacerbates this process.

For more information on riparian land management and how to identify serious shoreline erosion, visit www.respectourwaters.org/streams-shore/ to learn more.

This Fact Sheet is brought to you by Respect Our Waters. Last Updated August 2022.
Sources: Causes of Lakeshore and Streambank Erosion Wisconsin DNR. (https://dnr.wisconsin.gov/topic/Waterways/shoreline/info-erosion.html). Last accessed August 15, 2022

Appendix D. Mailer

Zip Code	Number of Post Cards
53005	227
53007	209
53012	273
53022	136
53024	374
53036	386
53051	180
53080	195
53086	381
53090	430
53092	364
53110	377
53122	399
53172	355
53202	135
53209	256
53211	257
53212	62
53214	371
53215	137
53217	254
53220	334
53226	188
53235	146

sweet water
SOUTHEASTERN WISCONSIN WATERSHEDS TRUST, INC.

Sweet Water helps to improve Wisconsin's lakes and rivers. Visit
www.RespectOurWaters.org
to learn how you can help improve stream and shorelines in your area!
Then scan the QR code or visit
www.AdoptYourDrain.com
to "adopt" a drain and remove pollutants before they reach our stream and shores

RESPECT OUR WATERS

Contact Us
600 E Greenfield Ave
Milwaukee, WI 53204
414-382-1766
info@swwtwater.org

Appendix E. 2022 Events

Event	Date	Topics Covered	Materials Provided	Metrics	Other Details
Grafton Storm Drain Stenciling	April 19	• Illicit Discharge Detection & Elimination • General	• Drain Door Hangers	74 stencil notifications were distributed around the village	
Rock the Green	April 23	• Illicit Discharge Detection & Elimination • Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance • Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care • Residential Infiltratio • Snow and Ice Control • Adopt Your Drain	• Was a Zero Waste Event, QR codes were provided • Interactive booth to write ways to prevent stormwater pollution	37 booth visitors 1 Drain Adoption 8 Individuals participated in interactive event	
Whitefish Bay Water Run	May 7	• Illicit Discharge Detection & Elimination • Household Hazardous Waste / Pet Waste /	• Adopt Your Drain Trifold	17 booth visitors 1 Drain Adoption	

		Vehicle Washing/Maintenance • Residential Infiltration • Adopt Your Drain		3 Drain Completion	
Shorewood Pollinator Palooza	May 21	• Illicit Discharge Detection & Elimination • Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance • Green Infrastructure / Low Impact Development • Adopt Your Drain	• Adopt Your Drain Instruction Sheets • Adopt Your Drain Gloves	34 booth visitors 20 Adopt Your Drain Sheets Taken 12 pairs of Adopt Your Drain Gloves Taken 4 Drain Adoptions	
Fox Point Open House	June 11	• Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance • Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care • Residential Infiltration • Green Infrastructure / Low Impact Development	• Adopt Your Drain Instruction Sheet • Adopt Your Drain Gloves	18 booth visitors 11 Adopt Your Drain Instruction sheets taken 3 pairs of Adopt Your Drain Gloves taken	

Washington County Fair	July 26 -31	• Illicit Discharge Detection & Prevention • Residential Infiltration • Local Municipal Information about Yard Waste & Hazardous Waste Programs • No wipes down the pipes • Pet Waste Management • Vehicle Maintenance • Salt Reduction Strategies • General Education about Stormwater Management & Watersheds • Stormwater Basin Maintenance (when applicable)	• No Respect Our Waters materials, instead interactive nemo game • Compost Container give away • Rain Barrel giveaway • Koozie giveaway	363 booth visitors (297 Washington County Residents) 280 game participants 178 compost container sign ups 148 Rain Barrel sign ups	
Green and Healthy Schools Conference	August 5	• Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance • Yard Waste Management / Pesticide & Fertilizer Application / Lawn Car • Residential Infiltration • Adopt Your Drain	• Adopt Your Drain Instruction Forms • Adopt Your Drain Gloves	17 booth visitors 12 Adopt Your Drain Instructions taken 3 Adopt Your Drain Gloves taken	

River Clean up	Sept 15	• Stream and Shoreline Management • General Watershed Education	• Door Hangers	50+ volunteers	50 cubic yards of brush removed from creek 10 cubic yards of mulch added to walking path 18 trash bags of litter removed from creek
Harbor Fest	Sept 25	• Illicit Discharge Detection & Elimination • Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance • Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care • Residential Infiltration • Green Infrastructure / Low Impact Development • Snow and Ice Control	• Adopt Your Drain Instruction Forms • Simple Solutions Brochure • Fall To Do List • Adopt Your Drain Door Hanger • Lawn Care Brochure • Native Plant Care Brochure • Tree Care • Tips to Prevent Stormwater Pollution Bookmark • Native Seeds	56 booth visitors	
Shorewood's Fish & Feather Festival	Oct 8	• Household Hazardous Waste / Pet Waste / Vehicle Washing/Maintenance	• No Respect Our Waters or Adopt Your Drain materials, instead interactive sensory table	59 booth visitors	

		• Yard Waste Management / Pesticide & Fertilizer Application / Lawn Care • Residential Infiltration • Construction or Post-Construction Stormwater Management/Stormwater Management BMP • Snow and Ice Control			
Glen Hills Middle School	Nov 18	• General Education about Stormwater Management & Watersheds	• No Respect Our Waters or Adopt Your Drain Materials- talked to class	Approximately 12 students	

Appendix F: Menomonee Group Meeting Agenda

Agenda Items

1:30 – 1:35	Welcome & Introductions
1:35 – 1:50	MS4 Program Partners 1. Respect Our Waters – Program Information Updates 2. Milwaukee Riverkeeper
1:50 – 2:00	Wisconsin DNR – 2023 Due Dates & Updates
2:00 – 2:45	Permit Group Successes, Lessons Learned & Opportunities 1. Brookfield – Phosphorus 2. Elm Grove – Underwood Creek 3. Salt Wise Program 4. Other Projects from the Group
2:45 – 2:55	Misc. & Others Issues
2:55 – 3:00	Set Next Meeting

City of Wauwatosa Stormwater Education and Public Involvement Efforts

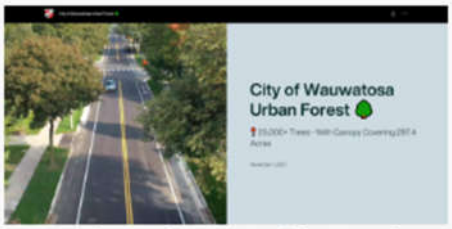
In 2022, we shared stormwater education in several formats. Here are several examples:

- In January 2022, the Department of Natural Resources shared an article about our tree dashboard. We have an inventory of every city-owned tree in Wauwatosa. If you click on an individual tree, it shows how the tree is valued in relation to stormwater benefits. We routinely share this tree dashboard with residents.

New Wauwatosa Forestry Dashboard Educates Residents About Area's Urban Forest

Posted on January 14, 2022

By Alex Krutsch, Supervisor of Forestry and Grounds, City of Wauwatosa



Over the past few years, the Wauwatosa Forestry Department has been working with the City's geographic information system (GIS) manager to inventory City trees into a GIS database.

The results have been transformational for the forestry department allowing staff to update tree inventory and manage department work functions such as tree removal, pruning and planting from the field in real-time via any mobile device with an internet connection.

Recently, the City's GIS team has been able to use the information collected by its arborists, in combination with the i-Tree software, to create a public facing forestry dashboard. The forestry dashboard is an online set of tools Wauwatosa residents can use to learn more about the urban forest in which they live. Zoom in on the dashboard's map, and when you click on an individual tree, you can see species, pruning cycle, if it has been treated for Emerald Ash Borer, its ecological benefits, and more.

The dashboard also includes a virtual tree tour for Wauwatosa residents to learn about the area's urban forest ecological benefits to the community and the importance of species diversity in creating a healthy and sustainable urban forest. The dashboard also features an interactive map showing locations and pictures of species that are currently being planted to increase diversity within Wauwatosa's urban forest.

The City's forestry dashboard has been well received by our community. Social media posts promoting the new website had thousands of views and in the month following the launch of the dashboard the City recorded 147,994 clicks on individual trees on the dashboard's map. The dashboard is proving to be a successful way to engage our community with the urban forest and the forestry department's work to help the forest thrive.

Explore the City of Wauwatosa Urban Forest dashboard here.

(Visited 302 times, 1 visits today)

Urban Forestry News | Inventory | Urban wood

← Protecting Our Urban Forests to Protect Our | Landscape and Grounds Maintenance Short Course

Search... GO

Categories

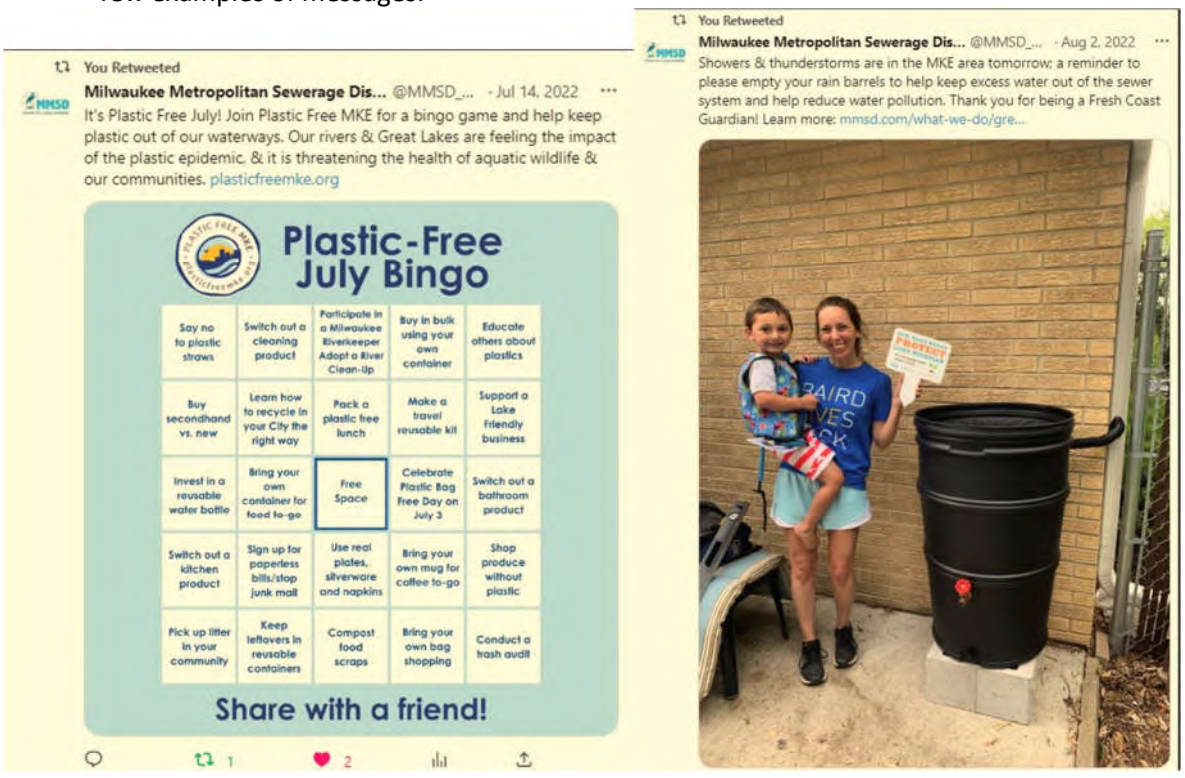
Division of Forestry News
Forest Health News
Forest Products News
Northern State Forests
Private Forestry News
Reforestation News
Urban Forestry News
Wildland Fire News

Tags

#NASF100 Awards
Best Management Practices
Care for your woods
Central WI Forest Health
Certification Data and analysis
Did you know?
Disease Events
Events; Wood utilization
Financial help
Fire management Fire season
Firewood Forest benefits
Foresters Forest products
Health benefits Insect
Invasive plant Inventory
Logs and lumber Managed Forest Law
Northeast WI Forest Health
Northwest WI Forest Health
Partners Pest Pesticide
Preparing for wildfires
Preventing wildfires
Publications Research Silviculture
South Central WI

- In April 2022, volunteers collected over 600 lbs of litter from the street curbs and in grassy medians in an effort to keep litter from entering our stormwater systems as well as preventing our lawn mowers from going over litter that may end up in the stormwater systems.

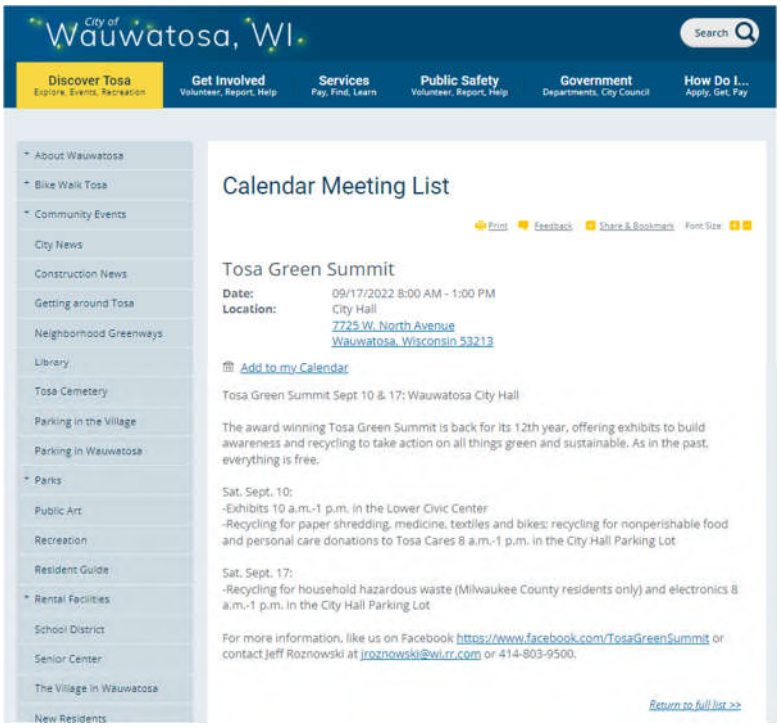
- Throughout the year, Wauwatosa shares information from partners like MMSD. Attached are a few examples of messages.

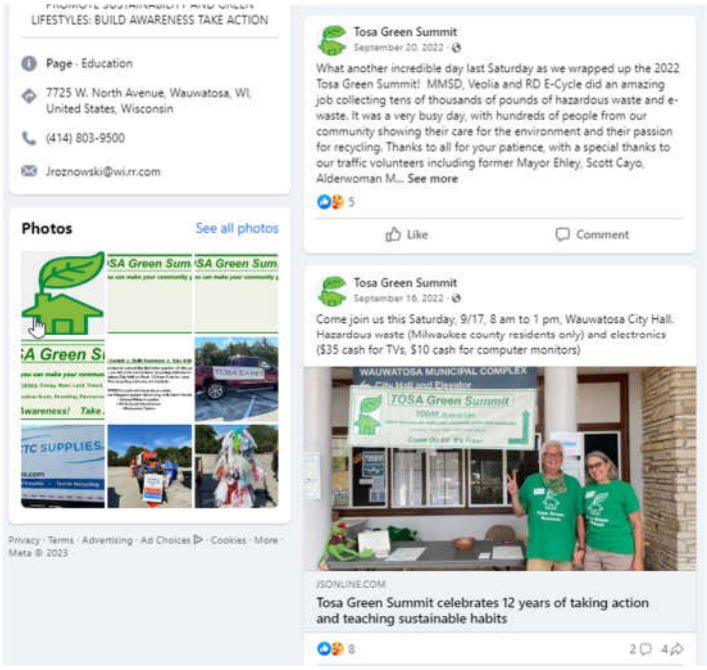


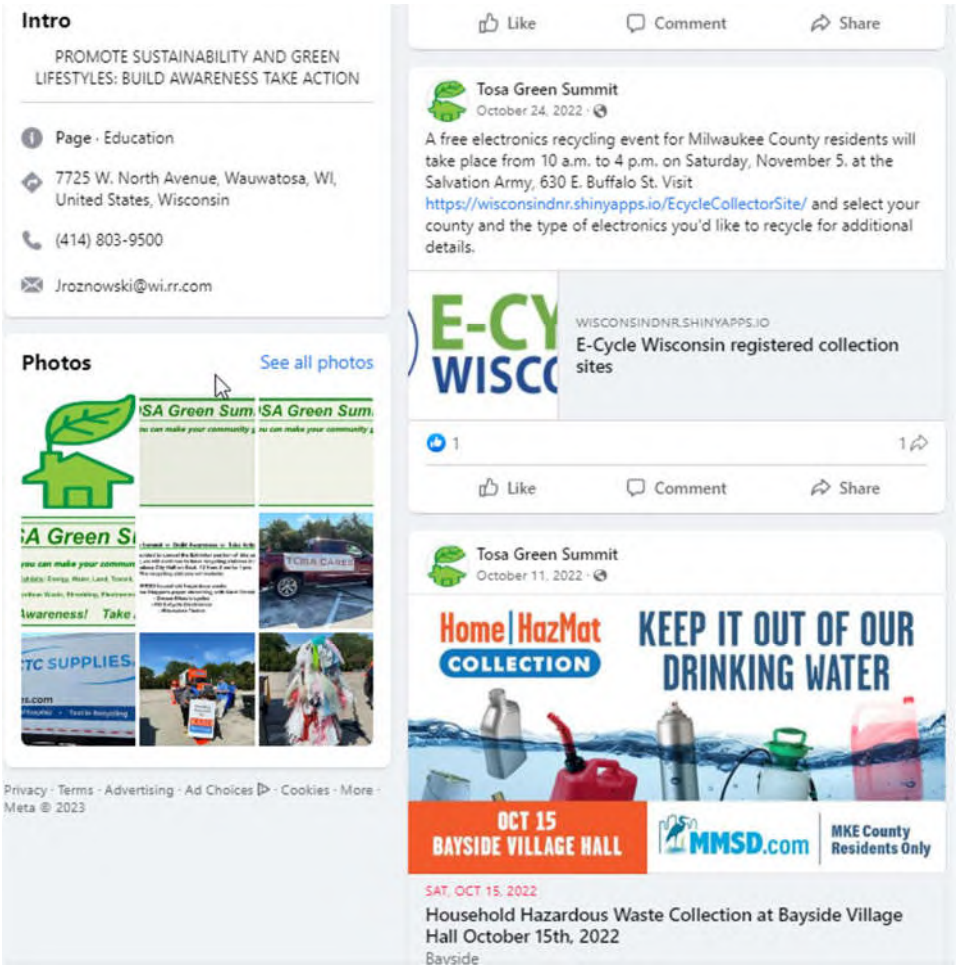
- Wauwatosa hosted the Tosa Green Summit on September 10th & 17th at Wauwatosa City Hall. This has become a very popular and well attended event and this year was the 12th annual. The Tosa Green Summit has it's own social media page for residents to follow (there are currently

713 followers). Below are some metric results for the 2022 Tosa Green Summit, as well as some screenshots of the City webpage and social media on this event:

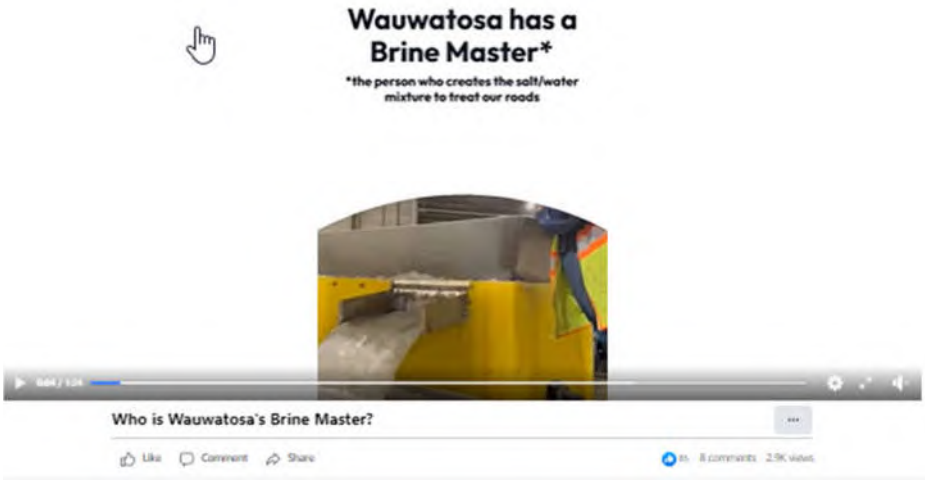
- 457 lbs household hazardous waste - 60% of this was latex paint
- 10,290 lbs. electronics PLUS 21 a/c units, 97 dehumidfiers, 26 microwaves
- 42% of this was TV's and computer monitors
- 9000 lbs. shredded paper – this saves 76 trees
- 3264 lbs. of textiles
- 197 lbs of medications
- 65 bikes







- Operations Superintendent Jason Blasiola was interviewed by local media 4 times about specific snow events. During interviews, he shared reminders about limiting salt usage.
- Jason also helped us create a video about how the city makes brine.



- The Engineering staff partnered with Milwaukee Riverkeeper on testing stormwater in our community for certain bacteria. Here's a news article about this effort.

City of Wauwatosa, WI

Search

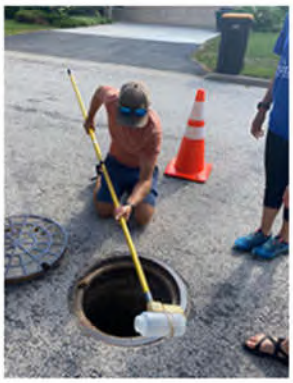
Discover Tosa | Get Involved | Services | Public Safety | Government | How Do I...

- City News
- Construction News
- Getting around Tosa
- Neighborhood Greenways
- Library
- Tosa Cemetery
- Parking in the Village
- Parking in Wauwatosa
- + Parks
- Public Art
- Recreation
- Resident Guide
- + Rental Facilities
- School District
- Senior Center
- The Village in Wauwatosa
- New Residents
- Sustainability
- Solar Energy

Only Rain Should Go Down the Storm Drain

Wauwatosa Engineering staff partnered with Milwaukee Riverkeepers on testing stormwater in our community for certain bacteria.

Post Date: 08/04/2022 1:06 PM



Wauwatosa Engineering staff is partnering with Milwaukee Riverkeeper on testing stormwater in our community for certain bacteria. Milwaukee Riverkeeper is a science-based advocacy organization working for swimmable, fishable rivers throughout the Milwaukee River Basin.

By opening manholes, we can access Wauwatosa's stormwater pipes and test for certain types of bacteria. This can help identify sources of contamination and ways to improve the quality of our waterways.

Milwaukee Riverkeepers' analysis showed the presence of bacteria. Possible sources of bacteria include pet waste and leaks in pipes.

How can we improve this? As water flows into our drains, it collects and transports soil, pet waste, salt, pesticides, fertilizer, oil and grease, litter and other pollutants. This water drains directly into nearby creeks, streams and rivers, without receiving treatment at sewage plants. All of our neighbors can be aware of what goes into the drain.

Additionally, in Wauwatosa, like many cities around the country, our aging infrastructure is prone to leaking. This means that our sanitary sewers can leak into our waterways, like Underwood Creek, Menomonee River, and Lake Michigan. This has the potential to impact the health of our water and the life, both human and aquatic, that depends on it.

Since 2012, we've invested $37.2 million in stormwater infrastructure. View the capital budgets. We continue to invest in stormwater infrastructure, green alleys, permeable surface solutions, and other infrastructure each year. Much work remains, both monitoring and infrastructure repair, but considerable strides have been made toward identifying sources of bacterial contamination in our stormwater system, which is the first step to reducing bacteria loading to our rivers and beaches.

Return to full list >>

City of Wauwatosa
2022 Outfall Testing

Structure ID:	Todays Date:	Investigator:	Rainfall Last 24HRS (IN):	Rainfall Last 72HRS (IN):	Submerged with Water:	Submerged with Sediment:	Flow Present:	Flow Description:	Time to Fill 1 Liter (sec.):	Temperature (F):	pH:	Copper (mg/l):	Chlorine (mg/l):	Ammonia (mg/l):	Color:	Detergent (ppm):	Flow Color:	Color Severity:	Surface Cover:	Flow Odor:	Debris Around Outfall:	Turbidity:	Debris in Pipe:	Vegetation:	Outfall Damage:
ST34-021	11/3/2022 17:35	DAVID GIL	0	0	PARTIALLY	NO	YES	LOW		52.9	7	0.33	0	0	73	0.25	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST34-300	11/3/2022 16:12	DAVID GIL	0	0	PARTIALLY	NO	YES	LOW		54.5	7	0.24	0.02	0	49	0.25	GRAY	FAINT COLORS IN BOTTLE	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST18-061	11/2/2022 20:34	DAVID GIL	0	0		FULLY	NO														OTHER		SEDIMENT	EXCESS GROWTH	
ST18-051	11/2/2022 19:31	DAVID GIL	0	0	NO	NO	NO														NONE		NONE	NONE	NONE
ST14-071	11/2/2022 19:09	DAVID GIL	0	0	NO	NO	NO														NONE		NONE	NONE	NONE
ST6-317	11/2/2022 18:07	DAVID GIL	0	0	NO	NO	NO														NONE		NONE	NORMAL	NONE
ST8-175	11/2/2022 16:30	DAVID GIL	0	0	NO	NO	YES	LOW		54.5	7	0.39	0	0	108	0.5	BROWN	FAINT COLORS IN BOTTLE	FOAM	NONE	SEDIMENT	SLIGHTLY CLOUDY	SEDIMENT	NORMAL	
ST7A-001	11/2/2022 15:07	DAVID GIL	0	0	NO	FULLY	NO														NONE		SEDIMENT	NORMAL	CHIPPING
ST11-009	11/2/2022 13:27	DAVID GIL	0	0	NO	PARTIALLY	NO														NONE		SEDIMENT	NONE	NONE
ST36-001	11/1/2022 19:55	DAVID GIL	0	0	PARTIALLY	NO	NO										BROWN	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	
ST7A-148	11/1/2022 18:42	DAVID GIL	0	0	NO	NO	NO														OTHER		NONE	NONE	NONE
ST47-013	11/1/2022 14:41	DAVID GIL	0	0	NO	NO	NO														OTHER		NONE	EXCESS GROWTH	NONE
ST3-010	11/1/2022 13:47	DAVID GIL	0	0	PARTIALLY	PARTIALLY	NO													NONE	NONE		NONE	EXCESS GROWTH	
ST29-008	11/1/2022 12:51	DAVID GIL	0	0	PARTIALLY	NO	NO										GRAY	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	SLIGHTLY CLOUDY	OTHER	NORMAL	
ST43-300	10/31/2022 20:04	DAVID GIL	0	0	NO	PARTIALLY	NO																SEDIMENT	NORMAL	NONE
ST33-010	10/24/2022 18:13	DAVID GIL	0	0	NO	NO	YES	LOW		58.5	7	0.77	0	0	24	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NORMAL	OFFSET JOINTS
ST10-091	10/24/2022 16:40	DAVID GIL	0	0	NO	NO	YES	MODERATE		59.5	7	0.75	0	1	62	0.25	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST9B-001	10/24/2022 14:56	DAVID GIL	0	0	NO	NO	YES	LOW		58.8	7	0.79	0.01	0	91	0.25	BROWN	FAINT COLORS IN BOTTLE	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST38-010	10/20/2022 17:54	DAVID GIL	0	0	NO	NO	YES			51.6	7	0.66	0	0	91	0.5	CLEAR	CLEARLY VISIBLE IN BOTTLE	FOAM	NONE	TRASH	CLEAR	TRASH	NORMAL	NONE
ST39-011	10/20/2022 15:53	DAVID GIL	0	0	NO	NO	YES	LOW		51.8	7	0.52	0.02	0	73	0.25	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	UNKNOWN	NONE	NONE	CLEAR	TRASH	NORMAL	NONE
ST38-024	10/20/2022 13:58	DAVID GIL	0	0	PARTIALLY	NO	YES	MODERATE		48.1	7	0.54	0.01	0	44	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	OTHER	CLEAR	OTHER	EXCESS GROWTH	NONE
ST36-109	10/11/2022 17:56	DAVID GIL	0	0	NO	NO	YES	MODERATE		56.7	7	0.43	0	0	46	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	
ST37-001	10/11/2022 15:37	DAVID GIL	0	0	PARTIALLY	NO	YES	LOW		61.4	6	0	0	0	0	0	BROWN	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	SLIGHTLY CLOUDY	NONE	NONE	NONE
ST41-007	10/11/2022 13:34	DAVID GIL	0	0	PARTIALLY	PARTIALLY	NO			50.4	7	0.95	0	0	74	0.5	BROWN	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	SLIGHTLY CLOUDY	NONE	NORMAL	NONE
ST9A-365	10/4/2022 19:55	DAVID GIL	0	0	NO	NO	YES	HEAVY		64.4	7	0.8	0	0	0	0.25	CLEAR	CLEARLY VISIBLE IN BOTTLE	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST15-009	10/4/2022 18:21	DAVID GIL	0	0	NO	NO	YES	INTERMITTENT		60.4	7	0.77	0	0	19	0.5	CLEAR	CLEARLY VISIBLE IN BOTTLE	SCUM	NONE	NONE	SLIGHTLY CLOUDY	NONE	NONE	OFFSET JOINTS
ST45-099	10/4/2022 15:51	DAVID GIL	0	0	PARTIALLY	NO	YES	MODERATE		56.9	7	0.57	0.02	0	0	0.25	CLEAR	CLEARLY VISIBLE IN BOTTLE	NONE	NONE	OTHER	CLEAR	OTHER	NONE	NONE
ST40-116	10/4/2022 13:28	DAVID GIL	0	0	NO	PARTIALLY	YES	INTERMITTENT		58.4	7	0.51	0	0	16	0.25	CLEAR	CLEARLY VISIBLE IN BOTTLE	NONE	NONE	NONE	CLEAR	OTHER	NORMAL	
ST7-300	10/3/2022 18:02	DAVID GIL	0	0	NO	NO	YES	MODERATE		58.4	7	0.36	0	0.5	43	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST2-001	10/3/2022 15:04	DAVID GIL	0	0	PARTIALLY	NO	NO			54.1	7	0.06	0	0	55	0.25	CLEAR	CLEARLY VISIBLE IN BOTTLE	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST5-001	10/3/2022 13:12	DAVID GIL	0	0	NO	NO	YES	MODERATE		57.4	7	0.21	0.02	0.5	31	0.25	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NORMAL	CHIPPING
ST61-001	9/29/2022 20:35	DAVID GIL	0	0	NO	NO	YES	MODERATE		59.1	7	0.2	0	0.5	74	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST32-015	9/29/2022 18:48	DAVID GIL	0	0	NO	NO	YES	MODERATE		61.1	7	0.16	0.02	0.5	48	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NORMAL	
ST26-010	9/29/2022 17:17	DAVID GIL	0	0	NO	NO	YES	MODERATE		55.1	7	0.15	0	0.5	21	0.25	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	NONE	CLEAR	NONE	NONE	NONE
ST28-001	9/29/2022 14:56	DAVID GIL	0	0	PARTIALLY	PARTIALLY	NO			48.8	7	0.19	0	0.5	92	0.25	GRAY	FAINT COLORS IN BOTTLE	NONE	NONE	OTHER	CLOUDY	SEDIMENT	NORMAL	NONE
ST27-010	9/29/2022 13:30	DAVID GIL	0	0	NO	PARTIALLY	YES	MODERATE		50.5	7	0.16	0	0	112	0.5	CLEAR	CLEARLY VISIBLE IN OUTFALL FLOW	NONE	NONE	OTHER	CLEAR	SEDIMENT	NORMAL	NONE

Summary of 2022 Outfall Testing Results

Major Outfalls:	36
Flow Present:	23
No Flow Present:	13

Testing Variable	Limit/Range	Range of Samples	# Samples above limit
Copper	1 mg/L	0.00-0.95	0
Chlorine	0.2 mg/L	0.00-0.02	0
Ammonia	19 mg/L	0.00-1.0	0
Detergent	0.25 mg/L	0.00-0.5	13
pH	6.00-9.00	7.00-7.00	0
Bacteria	TNTC	0 - TNTC	2

2022 Green Alley Maintenance

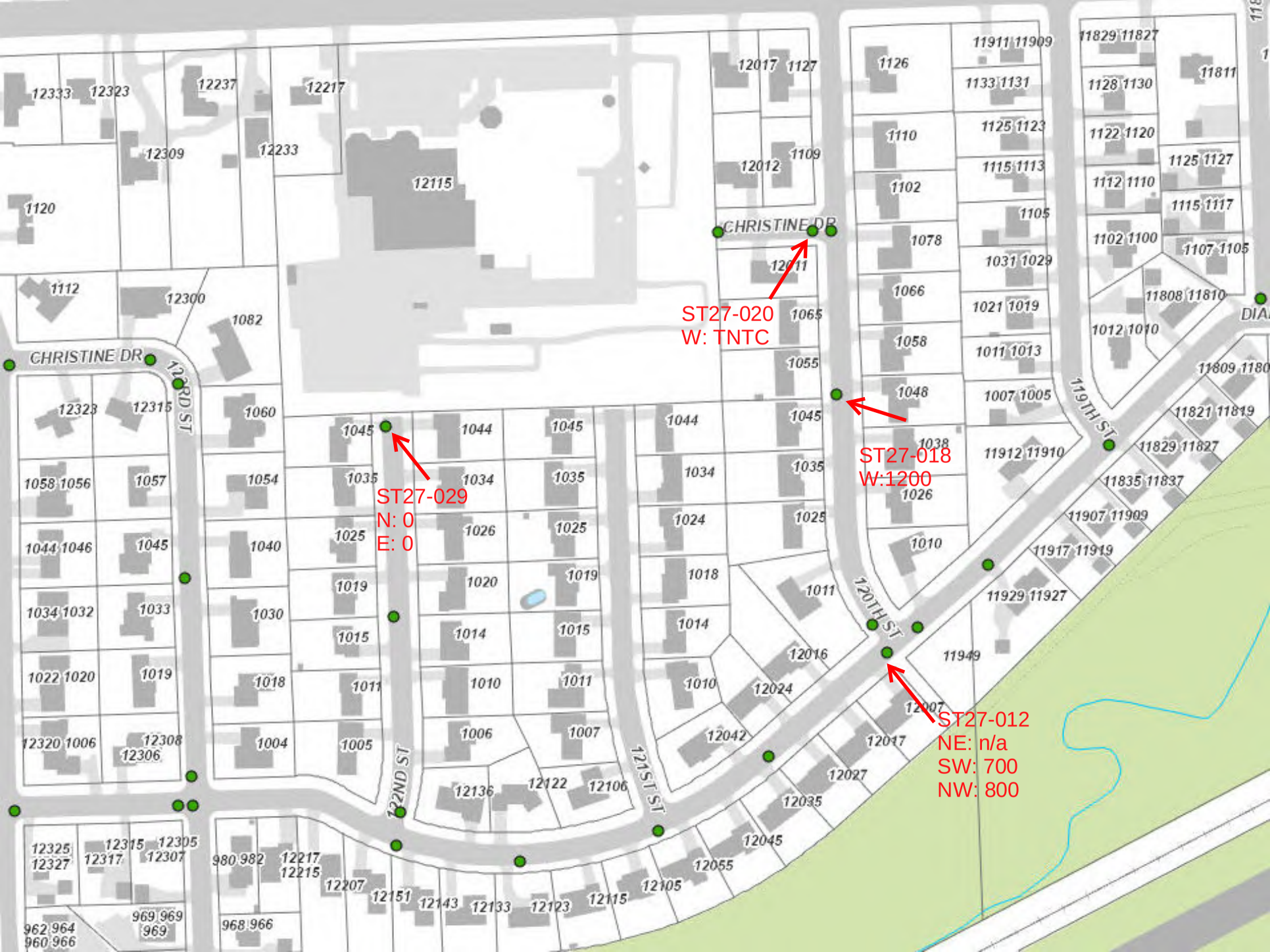
ID	BORDERING STREETS, N-E-S-W	Installed	Contractor Rebuild	Trackless Broom	Power Wash	Vacuum Broom	Brush Chips Back in	Jetted	Last Inspected
0001	Meinecke-64th-North-65th	2015	x						
0002	North-102nd-Fisher Pkwy-103rd	2015	x	10/14/22	10/14/22	10/14/22	10/14/22		
0003	Elm Lawn-Watertown Plank-85th	2016	x						
0004	WTP-Robertson-Gridley-Elm Lawn	2016	x						
0005	Center-74th-Clark-75th	2016	x						
0006	Center-68th-Clarke-69th	2017		x	x	x	x	x	
0007	Center-69th-Clarke-70th	2017		x	x	x	x	x	
0008	Meinecke-90th-North-91st	2017		x	x	x	x	x	
0009	North-90th-Jackson Park-Swan	2017		x	x	x	x	x	
0010	Meinecke-91st-North-Swan	2017		x	x	x	x	x	
0011	Stickney-Swan-Men River Pkwy-93rd	2017		x	x	x	x	x	
0012	North-106th-Garfield-107th	2018		10/14/22	10/14/22	10/14/22	10/14/22	in 2023	
0013	North-103rd-Fisher Pkwy-104th	2018		10/13/22	10/13/22	10/13/22	10/13/22	in 2023	
0014	Garfield-116th-Gilbert-117th	2018		x	x	x	x	in 2023	
0015	North-117th-Garfield-118th	2018		x	x	x	x	in 2023	
0016	North-118th-Garfield-119th	2018		x	x	x	x	in 2023	
0017	North-122nd-Garfield-124th	2018		x	x	x	x	in 2023	
0018	Hadley-73rd-Center-74th_EW LEG	2020		10/17/22		10/17/22	10/17/22	in 2025	
0019	Hadley-73rd-Center-74th_NS LEG	2020		10/17/22		10/17/22	10/17/22	in 2025	
0020	Center-67th-Clarke-68th	2020		10/17/22		10/17/22	10/17/22	in 2025	
0021	Meinecke-66th-North-67th	2020		10/18/22		10/18/22	10/18/22	in 2025	
0022	Meinecke-67th-North-68th	2020		10/18/22		10/18/22	10/18/22	in 2025	
0023	North-81st-Jackson Park Blvd-83rd	2021		x		x	x	in 2026	
0024	Washington Blvd-60th-Vliet-Washington Cr	2021		10/18/22		10/18/22	10/18/22	in 2026	
0025	Hampton-110th-Derby-Mayfair	2021		x		x	x	in 2026	
	Hart Park			x		x		N/A	
	Police Department	2020		x		x			
	Paver Parking Stalls 116th & Walnut			x		x		N/A	

Date	Time	Sta	Pipe Direction	Structure Location	E. coli Replicate 1 (/100mL)	Total Coliform Replicate 1 (/100mL)	Notes	Plate Photos	Infrastructure Photos	Wauwatosa online map: https://gis.wauwatosa.net/wauwageo/
8/19/2021	10:05 AM	ST5-052	N	84TH ST			Dry			
8/19/2021	10:00 AM	ST5-054	N	84TH ST			Dry			
8/19/2021	9:56 AM	ST5-055	S	84TH ST			Dry, PVC pipe coming from address 2031		https://drive.google.com/file/d/1-Q0WSuhDSL0b8y9-HDNd7C6qf-uTe7eh/view?usp=sharing	
8/19/2021	10:17 AM	ST5-057	N	85TH ST	500	3200	Heavy flow, clear	https://drive.google.com/file/d/1zuLhee		
8/19/2021	10:25 AM	ST5-059	N	STICKNEY AND 85TH	0	1000	Heavy flow, clear	https://drive.google.com/file/d/1CuCV6		
8/19/2021	11:09 AM	ST5-032	NW	LUDINGTON	TNTC	TNTC	Low flow, clear	https://drive.google.com/file/d/1_faFRP		
8/19/2021	11:05 AM	ST5-031	NW	LUDINGTON	700	4700	Low flow, clear	https://drive.google.com/file/d/16pvSbX		
8/19/2021	11:00 AM	ST5-028	NW	LUDINGTON	100	4700	Low flow, clear	https://drive.google.com/file/d/1Je-b0l6		
8/19/2021	10:55 AM	ST5-027	NW	LUDINGTON			No flow, small amount of stagnant water			
8/19/2021	10:41 AM	ST5-020	NW	LUDINGTON	100	3400	No flow, enough water to get a sample - fecal matter along egde of sewer	https://drive.google.com/file/d/1tE1DgN	https://drive.google.com/file/d/1-L2Jv0Rnwx5yypZLhpJQj4MuxS-JoZ1y/view?usp=sharing	
8/18/2021	9:00 AM	ST27-012	NE	120TH AND DIANE DR			No flow, too little to sample			
8/18/2021	9:00 AM	ST27-012	SW	120TH AND DIANE DR			No flow, too little to sample			
8/18/2021	9:00 AM	ST27-012	NW	120TH AND DIANE DR	2200	TNTC	Heavy flow, clear	https://drive.google.com/file/d/1eLGHJ		
8/18/2021	9:30 AM	ST27-029	N	122ND	300	7800	Medium flow, clear - building up from the east pipe ST27-018 E (sampled also)	https://drive.google.com/file/d/102_A8		
8/18/2021	9:30 AM	ST27-029	E	122ND	100	9200	Medium flow, clear build up mounded in this pipe	https://drive.google.com/file/d/1VEBX5		
8/19/2021	9:00 AM	ST27-018	W	120TH	TNTC	TNTC	Medium flow, clear	https://drive.google.com/file/d/13qIH5_		
8/18/2021	9:15 AM	ST27-020	W	120TH	4900	TNTC	Medium flow, clear	https://drive.google.com/file/d/1zvU3hb		

2022 MONITORING

Date	Time	Sta	Pipe Direction	Structure Location	E. coli Replicate 1 (/100mL)	Total Coliform Replicate 1 (/100mL)	Notes	Plate Photos	Infrastructure Photos
7/21/2022		ST5-052	N	84TH ST			Dry, no flow		
7/21/2022		ST5-054	N	84TH ST			Dry, no flow		
7/21/2022		ST5-055	S	84TH ST			Dry, no flow - sediment build up		
7/21/2022		ST5-057	N	85TH ST	TNTC	TNTC	Medium flow, some pooling, clear water	https://drive.google.com/file/d/1VyGeGB01r-Uss38656SRnu_16-nZ4bb/view?usp=sharing	
7/21/2022		ST5-059	N	STICKNEY AND 85TH	100	1500	Medium flow, some pooling, clear water	https://drive.google.com/file/d/1W1wv_e2xuuHxjs8RQmWQsSZF3bos33eY/view?usp=sharing	
7/21/2022		ST5-032	NW	LUDINGTON	2700	12600	Low flow, pooling, off colored water	https://drive.google.com/file/d/1Voinw8Pac0mIpRumpnp1xX_71h1OkmvJ/view?usp=sharing	
7/21/2022		ST5-031	NW	LUDINGTON	TNTC	TNTC	Low flow, pooling/stagnant water	https://drive.google.com/file/d/1UyuGkFVq_FbKrlKU5LK8NcYsHqU8eiYE/view?usp=sharing	
7/21/2022		ST5-028	NW	LUDINGTON	400	5800	Low flow, pooling/stagnant water, clear	https://drive.google.com/file/d/1VfJSGG9PRaRow9VWteIuyHz2cHmdX8xU/view?usp=sharing	
7/21/2022	10:42	ST5-027	NW	LUDINGTON			Very little stagnant water, unable to collect sample		
7/21/2022	10:47	ST5-020	NW	LUDINGTON					
7/21/2022	11:10	ST27-012	NE	120TH AND DIANE DR			Stagnant, no flow, no sample collected		
7/21/2022	11:15	ST27-012	SW	120TH AND DIANE DR	700	7400	Medium flow, clear water	https://drive.google.com/file/d/1W6bG4N9ZZUJ7dxpt8m80MYvDfN8VCRbU/view?usp=sharing	
7/21/2022	11:12	ST27-012	NW	120TH AND DIANE DR	800	4800	High flow, clear water	https://drive.google.com/file/d/1VPuJ0qpA1pXVuu8B6vghk4k98WzoRwAX/view?usp=sharing	
7/21/2022	11:32	ST27-029	N	122ND	0	2000	Low flow, auburn/clay colored water	https://drive.google.com/file/d/1VabEg78fSJN3wVboAtrUzBovBBcj16FH/view?usp=sharing	
7/21/2022	11:30	ST27-029	E	122ND	0	2700	Medium flow, clear /clay colored water	https://drive.google.com/file/d/1VQM87nQTUqKQ_vdj4MvOA0i6DBl0Tfzp/view?usp=sharing	
7/21/2022	11:42	ST27-018	W	120TH	1200	11800	Medium flow, clear water	https://drive.google.com/file/d/1VsC9lKEgvKopDvR97dvPYM2fl5bV1OqD/view?usp=sharing	
7/21/2022	11:45	ST27-020	W	120TH	TNTC	TNTC	Medium flow, clear water	https://drive.google.com/file/d/1V_v19dcO6RMoYG41LCBqgL1cnjO5s8g6/view?usp=sharing	
8/2/2022	9:15	ST28-025	N	116TH, N of Watertown Plank			Dry		
8/2/2022	9:23	ST28-033	N	117TH, N of Watertown Plank	3800	TNTC	Medium flow, sample collected	https://drive.google.com/file/d/1WlsOzZXuo1xYcPy-h2HsWEGS31mZW1jT/view?usp=sharing	
8/2/2022	10:37	ST28-013	W	118TH & WTP			Dry all directions		
8/2/2022	9:37	ST28-035	W	117TH & VLIET			Now flow, bottom looked damn not enough water to collect sample		
8/2/2022	9:44	ST28-069	W	117TH & CHERRY			Low flow, unable to collect sample - need to come back with a flat sided pole sampler		
8/2/2022	10:21	ST28-088	W	118TH & ELMHURST PKWY			Square man hole cover, partially cemented over unable to pop - sampled up pipe at ST28-090		https://drive.google.com/file/d/1Uw_Q3MRQmtuBmvp9lm3B2znxR0R0Sm6Z/view?usp=sharing	
8/2/2022	10:25	ST28-090	W		800	4900	Medium flow, clear, sample collected	https://drive.google.com/file/d/1WN6XAxk3k_laqoeN8Z_WDRBMKwy60YNj/view?usp=sharing		
8/2/2022	10:10	ST28-095	N, W, E	117TH & WALNUT RD	TNTC	TNTC	Low flow, samples from main stream could not differentiate between pipes, the split in direction was north of where the mar	https://drive.google.com/file/d/1WN2cX	https://drive.google.com/file/d/1WlJH9ZWpl46qZAp-A2bJC9L9jsBNd2gv/view?usp=sharing	


WALNUT RD
116TH ST
117TH ST
118TH ST
119TH ST
WATERTOWN PLANK RD
ST28-095
N: TNTC
W: TNTC
E: TNTC
ST28-088
W: Dry
ST28-090
W: 800
ST28-069
W: Dry
ST28-035
W: Dry
ST28-025
N: Dry
ST28-033
N: 3800
ST28-013
W: Dry


ST27-020
W: TNTC
ST27-018
W:1200
ST27-029
N: 0
E: 0
ST27-012
NE: n/a
SW: 700
NW: 800
CHRISTINE DR
CHRISTINE DR
122ND ST
122ND ST
121ST ST
120TH ST
119TH ST

Construction Site Pollutant Control

Supplemental Information

There were 11 active construction sites with a disturbance of 1 acre or more in the City of Wauwatosa during the 2022 permit year. City Engineering Department staff completed 42 erosion control inspections at these sites during the 2022 permit year. The erosion control inspections were conducted on all active construction sites at a minimum of every 45 days as required.

Attached is the inspection tracking list of all active erosion control permits in the 2022 permit year, as well as an example of an inspection in which a written warning was required. The inspection form, photos, and email correspondence between the City and the contractor has been included for reference.

2022 Erosion Control Inspection Tracking - Active Construction Greater than 1 Acre

Site Plan Permit	Permit Number	Permit Type	Address	Contractor Name	Project Name	Initial Inspection	Active Construction Inspection Frequency - every 45 days (60 days if inactive)							Final Inspection
						Date	Date	Date	Date	Date	Date	Date	Date	Date
20-12	ER21-1084	EROSION	1535-1565 Rivers Bend Lane	Horizon Dev't Group	Walnut Glen at Mt Tosa	4/20/2021	3/21/2022	5/16/2022	-	-	-	-	-	6/14/2022
21-01	ER21-1779	EROSION	9150 Watertown Plank Rd	Catalyst Construction	The Watertown Apartments	6/2/2021	3/21/2022	5/16/2022	6/29/2022	7/29/2022	9/29/2022	-	-	10/27/2022
20-18	ER21-2542	EROSION	8984 W Watertown Plank Rd	CG Schmidt	Ronald McDonald House Addition	8/12/2021	3/21/2022	5/16/2022	6/29/2022	7/29/2022	9/29/2022	-	-	10/27/2022
21-15	ER21-3179	EROSION	8701 W Watertown Plank Rd	Boldt	Children's Hospital NW Tower - Orange Package 3	9/29/2021	3/21/2022	5/16/2022	6/29/2022	7/29/2022	9/29/2022	11/9/2022	12/19/2022	
21-08	ER22-1582	EROSION	9480 W Watertown Plank Rd	CG Schmidt	Irgen's UWM Innovation Campus	5/16/2021	-	5/16/2022	6/29/2022	7/29/2022	9/29/2022	11/9/2022	12/19/2022	
21-07	ER21-4042	EROSION	2929 N Mayfair Rd	Steven's Construction	Campbell's Multi-Family	5/16/2021	-	5/16/2022	6/23/2022	7/29/2022	9/29/2022	11/9/2022	12/19/2022	
21-35	ER22-1579	EROSION	10701 Research Drive	Moore Construction Services	Irgen's Research One	6/23/2022	-	-	6/23/2022	7/29/2022	9/29/2022	-	-	10/27/2022
21-27	ER22-1545	EROSION	6442 River Parkway	MSP Housing	River Parkway Phase 2	6/23/2022	-	-	6/23/2022	7/29/2022	9/29/2022	11/9/2022	12/19/2022	
-		EROSION	DPW/DOT Fill Site - 11100 Walnut Rd	Hoffman Construction Co.	DPW Yard Fill Site for WisDOT Zoo I/C	12/19/2022	-	-	-	-	-	-	12/19/2022	
22-02	BC2022-0149	EROSION	1501 N Mayfair Rd	Briohn Building Corp.	Uptown Quick Lane Service Center	12/19/2022	-	-	-	-	-	-	12/19/2022	
-	BC2022-0225	EROSION	9455 Watertown Plank Rd	Payne & Dolan	MRMC West-Pavement Pulverizing and Stockpiling	12/19/2022							12/19/2022	

Table 2: Construction Site Inspection Frequency

Site	Inspection Frequency
(1) All sites one acre or more in size	* New projects shall be inspected within the first two weeks of commencement of land disturbing activity * All active sites shall be inspected at least once every 45 days * All inactive sites shall be inspected at least once every 60 days
(2) Follow up inspection	* Follow up inspections are required within 7 days of any sediment discharge or inadequate control measure, unless corrections were made and observed by the inspector during initial inspection or corrections were verified via
(3) Final inspection	* Confirm that all graded areas have reached final stabilization and that all temporary control measures are removed, and permanent storm water

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

CONSTRUCTION SITE INSPECTION REPORT

Form 3400-187 (rev. 9/04)

Notice: Use of this specific form is voluntary, but the information contained on this form must be collected and kept by the permittee under s. NR 216.48(4), Wis. Adm. Code, for a construction site covered under the General WPDES Construction Site Storm Water Discharge Permit, Permit No. WI-0067831-2. This form is provided for the convenience of the permittee to meet the requirements of s. NR 216.48(4), Wis. Adm. Code. Multiple copies of this form may be made to compile the inspection report.

Inspections of implemented erosion and sediment control best management practices must be performed weekly and within 24 hours after a precipitation event 0.5 inches or greater which results in runoff.

Weekly written reports of all inspections conducted by or for the permittee must be maintained throughout the period of general permit coverage.

The information maintained in accordance with s. NR 216.48 (4) must be submitted to the Department upon request.

Name of Permittee: Aaron Marty and Tom Smith (Moore Construction Services)	
Construction Site Name (Project): Research One	**Construction Site ID No.:**
Location: 10701 Research Drive	**County:** Milwaukee
Contractor: Moore Construction Services	**Field Office Phone:**

Note: Weekly inspection reports, along with erosion control and stormwater management plans, are required to be maintained on site and made available upon request.

Date of inspection (mm/dd/yy): 06/23/22

Time of inspection: **Start:** 11:30 a.m.

End: 12:00 p.m.

Type of inspection: ☐ **Weekly** ☐ **Precipitation Event** ☑ **Other (specify)** City of Wauwatosa E.C. Inspection

Name(s) of individual(s) performing inspection: Jessica Henderson

Weather: 75 degrees and sunny

Description of present phase of construction: Grading is underway

Modifications Required	Yes	No	Not Applicable	**Comments/Recommendations** about the overall effectiveness of the erosion and sediment control measures. **Note**: For each item checked "Yes", complete the follow-up information on page 2.
Ditch Checks	☐	☑	☐	
Erosion Control Plan	☐	☑	☐	
Erosion Mat	☐	☑	☐	
Grading Practices	☐	☑	☐	
Inlet Protection	☐	☑	☐	
Mulch	☐	☑	☐	
Offsite Sediment	☐	☑	☐	
Permanent Seeding	☐	☑	☐	
Schedule / Phasing	☐	☑	☐	
Silt Fence	☑	☐	☐	An area of soils near stockpile area is pushing against silt fence
Silt Screen	☐	☑	☐	
Sod	☐	☑	☐	
Stabilized Outlet	☐	☑	☐	
Temp. Diversion Channel	☐	☐	☑	
Temp. Settling Basin	☐	☐	☑	
Temporary Seeding	☑	☐	☐	Some large stockpile areas currently that may need additional BMP's
Tracking Pads	☐	☑	☐	
Turbidity Barrier	☐	☐	☑	
Other (specify) see below	☑	☐	☐	Install tree protection as shown on approved plan.

Other Modifications Required:

Name of Permittee:
Aaron Marty and Tom Smith (Moore Construction Services)

Construction Site Name (Project):	**Construction Site ID No.:**
Research One	

Use the space below for detailed follow-up action items.

Exact place of erosion/sediment control inspected	**Type of erosion/sediment control and its observed condition**	**Description of any necessary maintenance or repair to erosion/sediment control, including anticipated date of completion**
* Stockpile area observed near northeast corner of site	*Stockpile is adjacent to an inlet (not recommended) and some soils pushed up against the perimeter silt fence	* Ensure the inlet protection is checked daily and soils are pushed back so they are not up against the silt fence.
*Existing tree near the southeast corner of the existing building.	* No tree protection has been installed as shown on the approved plans. Active grading underway in this area.	*Install inlet protection per the approved plan.
*The slope on the south side of the site.	*Large area of disturbed soils on a slope adjacent to the drainage ditch offsite.	*If left undisturbed for more than 7-days, additonal BMP's will be required such as temporary seeding, silt fence to protect these soils from eroding offsite.

Additional Comments:

RESET

Jessica Henderson

From: Jessica Henderson
Sent: Friday, June 24, 2022 4:06 PM
To: 'amarty@irgens.com'; 'Tom@moore-cs.com'
Cc: Jennifer Stilling; Maggie Anderson; Stephanie Wilson
Subject: Research One: City Erosion Control Inspection 6-23-22
Attachments: Erosion-Control-Inspection-Report-Form_10701 Research.pdf; Research One_ECInspection_062322.pdf

Hello Aaron and Tom,

The City completed an Erosion Control inspection of this site on 6-23-22 as required by our WDNR MS4 permit to verify that erosion control measures are all in place and operating as expected. The following items were identified as shown in the attached inspection form/mark-up and photos:

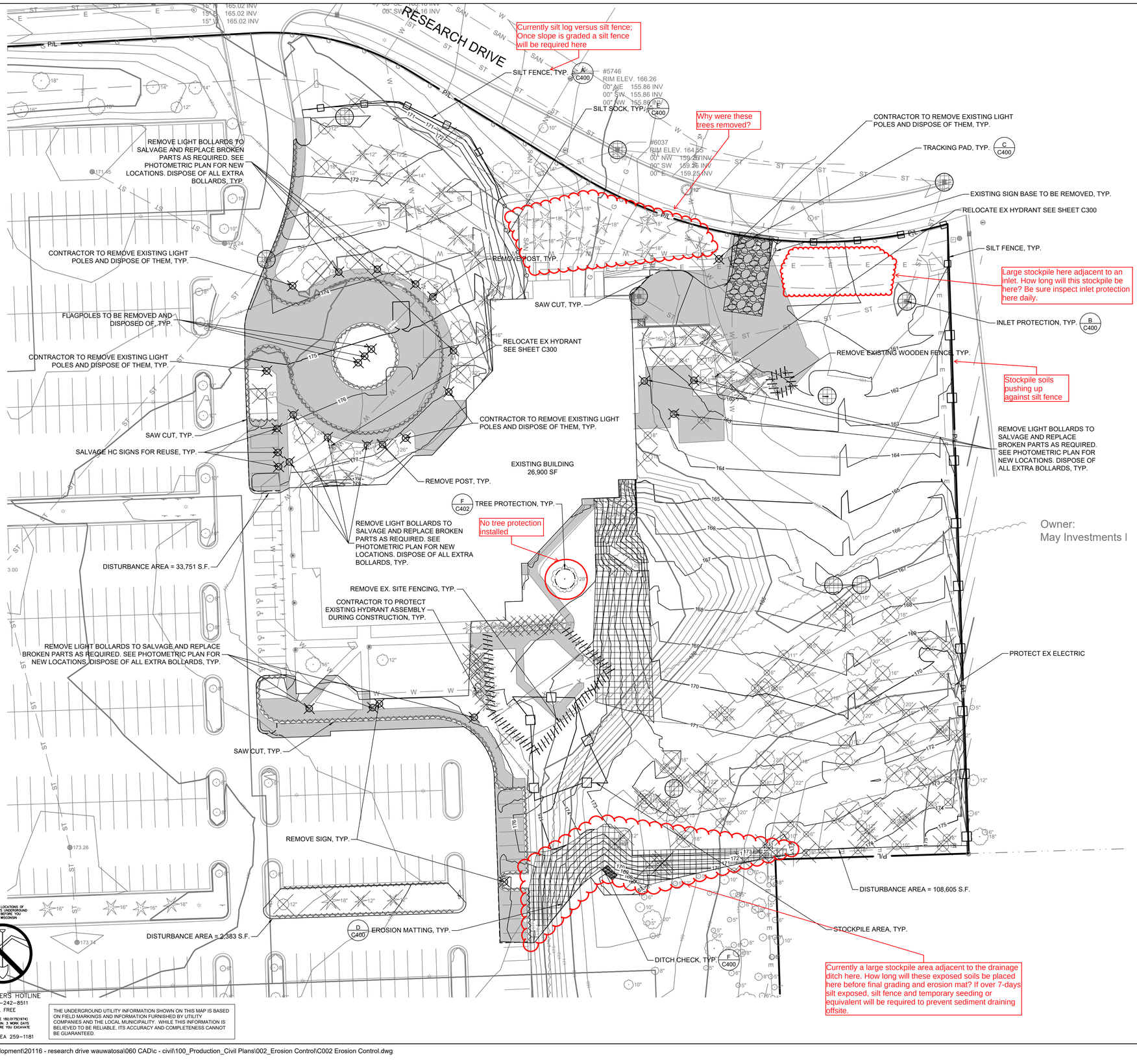
- There is currently a large stockpile area adjacent to an existing inlet east of the construction entrance on Research Drive. This is not recommended, and inlet protection shall be checked daily until this stockpile area has been moved. This stockpile area also has some areas were soil is piled up against the perimeter silt fence. Please push back soils so there are no soils piling up along silt fence walls.
- There is a large area of disturbed soils on a slope along the south property line, adjacent to the drainage ditch offsite. How long will these exposed soils be here before the proposed erosion mat can be installed? If over 7-days exposed, silt fence and temporary seeding or equivalent will be required to prevent sediment draining offsite.
- Tree protection has not yet been installed for the tree on the southeast corner of the existing building. Please install tree protection as shown on the approved Site Erosion Control Plan.
- The existing trees west of the construction entrance on Research Drive have been removed, and were identified to remain on the approved plan. Why were these trees removed?

Please respond to this email with pictures of the identified corrections to verify completion of this work.

Thank you,

Jessica Henderson, P.E.
Civil Engineer
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213
P 414.479.8978
F 414.471.8492
jhenderson@wauwatosa.net

The safety of our community is our top priority. Please see our Wauwatosa COVID-19 webpage for the most updated information about city services.



LEGEND:

- PROPOSED SILT FENCE (A C400)
- PROPOSED INLET PROTECTION (B C400)
- PROPOSED TRACKING PAD (C C400)
- PROPOSED EROSION MATTING WISDOT APPROVED CLASS 1 TYPE B (D C400)
- PROPOSED SILT SOCK (E C400)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- UTILITY REMOVAL
- STRUCTURE REMOVAL
- PAVEMENT REMOVAL
- PROPOSED DITCH CHECK EROSION BALES (F C400)
- SAW CUT
- CURB REMOVAL
- TREE REMOVAL
- TREE PROTECTION (F C402)

SITE DISTURBANCE AREA = 136,901 S.F.

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. SEE SHEET C400 FOR A COMPLETE LIST OF EROSION CONTROL NOTES AND DETAILS. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO START OF LAND DISTURBING ACTIVITIES.
6. DO NOT BEGIN LAND DISTURBING ACTIVITIES UNTIL AN EROSION CONTROL PERMIT IS OBTAINED FROM LOCAL JURISDICTION.
7. CLEAR AND GRUB ALL AREAS WITHIN WORK AREAS.
8. PROTECT ALL TREES AND LANDSCAPING TO REMAIN.
9. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OCCUPANCY PERMIT FROM THE CITY.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

TAX KEY: 3799999058

GRAPHIC SCALE 0 30' 60'

IRGENS RESEARCH DRIVE
10701 RESEARCH DRIVE
WAUWATOSA, WI 53226

EROSION CONTROL

WISCONSIN CHRISTOPHER T. CARR E-35765 MILWAUKEE WI PROFESSIONAL ENGINEER

NO.	REVISION	DATE	BY
	FOR CONSTRUCTION	5/2/2022	

SCALE:	1" = 30'-0"
PROJECT NO:	20116
DESIGN DATE:	11/08/2021
PLOT DATE:	5/10/2022
DRAWN BY:	RCR
CHECKED BY:	TPM
APPROVED BY:	CTC
SHEET NO:	C002

16:19 AKUSKE C002 20116

Jessica Henderson

From: Aaron Marty <AMarty@irgens.com>
Sent: Monday, June 27, 2022 3:49 PM
To: Jessica Henderson
Subject: [External] RE: Research One - 6/23 EC inspection

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Jessica,
Tree protection has been installed and soil pulled back from the silt fence on the north side. Soils along the south are being moved tomorrow. Thanks,

AARON MARTY
Vice President, Design & Construction Administration | Irgens
DIRECT 414.443.2589 | CELL 414.750.9827 | amarty@irgens.com

Follow us on: Facebook | LinkedIn | Twitter | YouTube

From: Aaron Marty
Sent: Monday, June 27, 2022 10:33 AM
To: Jessica Henderson <jhenderson@wauwatosa.net>
Subject: Research One - 6/23 EC inspection

Morning Jessica,
The EC comments from your message on Friday will be addressed today. I have asked Moore/Veit to send us pictures today as things are completed.

Regarding the tree removal north of the building, this is a landscape maintenance project being completed separate from the parking lot project. The 10 or so blue spruce had the fungus and were looking very bad. The two ponderosas were pretty old and ratty looking. We will be installing new Juniper Iowa and/or Colorado pines to replace the ones removed, plus a few extra arborvitae to screen the dumpster and dock area.

Thanks,

AARON MARTY
Vice President, Design & Construction Administration | Irgens
DIRECT 414.443.2589 | CELL 414.750.9827 | amarty@irgens.com

Follow us on: Facebook | LinkedIn | Twitter | YouTube

Post-Construction Storm Water Management

Supplemental Information

The City's ordinance requires that a Maintenance Agreement be created for all BMP's required for storm water management. The City sends out a letter to all Maintenance Agreement owners to request maintenance and inspection records on an annual basis. See attached letter template sent out in November 2022 and the list of BMP owners this was sent to.

Five additional sites were approved to construct storm water management facilities to meet the City's stormwater requirements in 2022. However, the request letter for maintenance and inspection records is only sent to properties with BMP's that have been fully constructed for at least 1 year.

Also included in this appendix section is written correspondence to St Joseph's Congregation in regards to reconstruction of a parking lot that was in violation of the City's landscape code. It was later determined that based on the amount of disturbance on this site they were also not in compliance with the City's stormwater quality ordinance. The property owner hired an engineering consultant and eventually submitted a design that was compliant with both code requirements that was constructed in Fall of 2022.

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION
7725 WEST NORTH AVENUE
WAUWATOSA, WI 53213
Telephone: (414) 479-8927
Fax: (414) 471-8492
www.wauwatosa.net

William T. Wehrley, P.E.
City Engineer
wwehrley@wauwatosa.net

November 8, 2022

«OWNER_NAME_1» «OWNER_NAME_2»
«OWNER_COMPANY»
«OWNER_ADDRESS»
«SWMP_MAINTMAILINGCity_» «STATE» «SWMP_MAINTMAILINGZip»

RE: Stormwater Management Maintenance Agreement - «PROJECT_NAME»

Dear «OWNER_NAME_1»:

As the owner of a property with a Stormwater Management Maintenance Agreement, you are required to perform certain maintenance actions to ensure that your Stormwater Best Management Practices (BMP's) continue to function as they were designed. These actions are outlined in your maintenance plan and include such things as monthly visual inspections and the completion of any needed repairs. Our records show a stormwater maintenance agreement for the «PROJECT_NAME» located at «PROJECT_ADDRESS».

Please submit copies of your inspection reports, as outlined in your maintenance plan by December 30, 2022. It is strongly recommended that you have a qualified, engineering professional complete your annual BMP inspection with your facilities manager. By doing so, your facilities manager can be educated as to what to look for during the monthly inspections. Once the report is completed, please send us an electronic PDF copy via email to jhenderson@wauwatosa.net.

If you need a copy of your maintenance plan or agreement, please contact me at 414-479-8978 or jhenderson@wauwatosa.net.

Sincerely,

Jessica Henderson

Jessica Henderson, PE
Civil Engineer

2022 Private BMP Inspection and Maintenance Record Requests

Parking Permit #	Recorded?	PROJECT NAME	PROJECT ADDRESS	OWNER NAME_1	OWNER NAME_2	OWNER COMPANY	OWNER ADDRESS	CITY	STATE	ZIP	PHONE	Email	BMP(s)
	No	Wisconsin Lutheran College Academic Facility	88TH St. & Wisconsin Avenue	Gary Schmid	Vice President of Finance	Wisc Lutheran College	8800 W Bluemound Rd	Milwaukee	WI	53226	414-443-8590	gary.schmid@wlc.edu	Underground Detention and Dry Retention
	No	Froedtert Memorial Lutheran Hospital	92ND St. & Wisconsin Avenue	Ryan Marks	Vice President	Facility and Planning Development	9200 W Wisconsin Ave	Milwaukee	WI	53226	414-805-3000	ryan.marks@froedtert.com	Sumped CB's(4);Oil/sand interceptor
3-26	No	VNA Hospice	7620 Honey Creek Parkway	Liana M Wayda		Visiting Nurse Assoc of Wisconsin	11333 W National Ave	Milwaukee	WI	53227	(414) 327-2295		Detention Pond (2,798 s.f); Sumped CB's and Diversion Swale
4-02	No	Wisconsin Lutheran College	8800 W. Bluemound Road	Gary Schmid	Vice President of Finance	Wisc Lutheran College	8800 W Bluemound Rd	Milwaukee	WI	53226	414-443-8590	gary.schmid@wlc.edu	
3-05	No	Wisconsin Lutheran College Athletic Fields	10200 Watertown Plank Road	Gary Schmid	Vice President of Finance	Wisc Lutheran College	8800 W Bluemound Rd	Milwaukee	WI	53226	414-443-8590	gary.schmid@wlc.edu	Detention Pond
10-05	Yes	Bryant & Stratton College	10950 W. Potter Road	Paula Armato		F Street 10950 LLC	1134 N 9th Street, Suite 200	Milwaukee	WI	53233	(262) 348-6986	paula@fstreetgroup.com	CB's (12); Vortsentry Unit and Tricon CB inserts for filtration
7-17	No	Mayfair Medical	2999 N. Mayfair Road			Wisconsin Medical Office DST	2901 Butterfield Road	Oak Brook	IL	60523			Vortsentry Unit for underground detention
8-12	Yes	Renner Kia Redevelopment (Pick n Save)	1717 N. Mayfair Road	TCB Pick Owner, LLC	Alex Smith	Newport Capital Partners	353 N. Clark Street, Suite 3625	Chicago	IL	60654	(312) 724-7045	alex@newportcapitalptrs.com	Sumped CB's (10), Porous Pavement (2,400 SY), Biofiltration Islands (3)
	No	Learning Gardens at Kradwell School	1220 Dewey Avenue	Steve Herkowski		Aurora Psychiatric Hospital	1220 Dewey Ave	Wauwatosa	WI	53213	(414) 454-6600		3 Biofiltration basins: E of school (1,255sf); W of school (539sf); N of hospital - by Alumni House (1,788sf)
10-09	No	Cedar Glen Apartments (Mt. Tosa)	1661 Rivers Bend Lane	Elizabeth Sili	Regional Manager	Horizon Management Services, Inc.	3900 S Prairie Hill Lane	Greenfield	WI	53228	(414) 727-2621	e.sili@horizondbm.com	Det. Pond 1 (2,550 s.f.); Det. Pond 2 (1,400 s.f.); Bioswale (73,082 s.f.)?
12-08	No	Aurora Psych Presidents House	1220 Dewey Avenue	Steve Herkowski		Aurora Psychiatric Hospital	1220 Dewey Ave	Wauwatosa	WI	53213	(414) 454-6600		Dry Pond (~3,500sf)
13-11	No	UWM Innovation Park	1225 Discovery Parkway	Andrea Mullins		Irgens Development Group							22 biofiltration basin and permeable pavement within ABB parking lot
13-03	No	Mayfair Mall	2500 N. Mayfair Road	Chris Jaeger	Senior General Manager	Mayfair Retail	2500 N Mayfair Road	Wauwatosa	WI	53226	(414) 207-5830	chrisjaeger@bpretail.com	
12-10	No	Mayfair Collection	11500 W. Burleigh Street	Claudette Zoch		HSA Commercial Inc	16955 West Wisconsin Ave	Brookfield	WI	53005	(262) 938-0911	czoch@hsacommercial.com	2 underground detention vaults, porous asphalt, sumped CB's.
14-04	No	Meijer-277	11123 W. Burleigh Street	Dan Gezon		Miejer	2350 3 Mile Rd NW	Grand Rapids	MI	49544	(616) 735-8142	Daniel.Gezon@meijer.com	
14-03	No	Apartments at 1215 (The Reef)	1215 N. 62ND Street	Wayne Wiertzema		Wangard Investment	1200 N Mayfair Rd Suite 220	Milwaukee	WI	53202	(414) 777-1200	wwiertzema@wangard.com	
14-08	No	La Z Boy	10830 W. Burleigh Street	Sheri Carlisle		La-Z-Boy Retail	10830 W Burleigh St	Wauwatosa	WI	53222	(732) 966-2293	sheric.amf@outlook.com	Underground Detention; Sumped CB's; Grass Swales
14-09	No	Whitman Athletic Fields	11100 W. Center Street	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	(414) 773-1053	choinsgr@wauwatosa.k12.wi.us	
14-21	Yes	Russ Darrow Kia	1901 N. Mayfair Road	George Salomon	Compliance Manager	Russ Darrow Wauwatosa Real Estate LLC	W133 N8569 Executive Pkwy	Menomonee Falls	WI	53051	847-612-6214	georgesalomon@ymail.com	Underground Detention
15-01	No	UW Credit Union	6510 W. State Street	Todd Peterson	Building & Grounds Manager	UW Credit Union	3500 University Ave	Madison	WI	53507	(608) 206-5033	tpeterson@uwcu.org	
15-06	No	Wauwatosa West Athletic Fields	11400 W. Center Street	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	(414) 773-1053	choinsgr@wauwatosa.k12.wi.us	Outlet Controls Structure for turf drainage system
15-07	Yes	2100 Mayfair	2100 N. Mayfair Road	Sheila Baker	Hoffman Management C/O The 2100, LLC	The 2100, LLC	150 N Sunny Slope Rd #200	Brookfield	WI	53005	(262) 785-4500	jczarnecki@commercialunited.com	Sumped CB's
15-10	Yes	Tosa Center	1155 N. Mayfair Road	Current Owner		Gateway Tosa HC LLC	648 N Plankinton Ave Suite 200	Pasadena	CA	91101	(414) 443-2598	mhunefeld@irgens.com	Biofiltration basin; Sumped CB's
15-15	No	The Reserve at Mayfair	11011 W. North Avenue	Andrew Schalk	Maintenance Director	Mayfair Property Partners LLC, C/O Atlantic Realty Partners	3500 Lenox Rd Suite 1250	Atlanta	GA	30326	(404) 591-2491	Raaronson@goarp.com	Sumped CB's
15-20	No	Stamp Factory	11415 W. Burleigh Street	Claudette Zoch		HSA Commercial Inc	16955 West Wisconsin Ave	Brookfield	WI	53005	(262) 938-0911	czoch@hsacommercial.com	Biofiltration islands (6), biofiltration basin, dry pond, underground detention
15-22	Yes	St. Camillus	10101 W. Wisconsin Avenue	Dave Sinkula	Director of Plant Operations	St Camillus	10101 W Wisconsin Ave	Wauwatosa	WI	53226	(414) 259-3751	dsinkula@stcam.com	Bioretention Basin
16-05	Yes	Synergy at the District (District Lofts)	11220 and 11240 District Drive	Allison McGuirk	Director of Asset Management	Open Path Investments	999 18th Street, Suite 1120s	Denver	CO	80202	(510) 331-2275	Allison@openpathinvestments.com	Underground detention, underground WQ unit, sumped CB's
16-06	Yes	Wauwatosa West Softball Field	11400 W. Center Street	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Underground detention, sumped CB's
16-19	Yes	MRMC Permanent Plant Upgrades	9250 Watertown Plank Road	Mark Geronime	Vice President of Operations	MRMC	8700 Watertown Plank Rd (Mail stop 5)	Milwaukee	WI	53226		mgeronime@mrmcffl.org	Biofiltration basin, underground detention, sumped CB's
17-01	No	Aurora Psych - Dewey House	1220 Dewey Avenue	Steve Herkowski		Aurora Health Care	8901 W Lincoln Ave	West Allis	WI	53227	414-328-6015		Bioretention Basin
17-05	Yes	Longfellow Middle School Softball Field	7600 W. North Avenue	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Underground detention, sumped CB's
17-07	Yes	Wauwatosa West Parking Lot	11400 W. Center Street	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Porous asphalt pavement, bioretention basins
17-15	Yes	U-Haul	17000 W. Capital Drive	Jim Christianson		U-Haul	17000 W. Capital Drive	Wauwatosa	WI	53226	262-343-6730	jim_christianson@uhaul.com	2 biofiltration basins, sumped CB's
18-04	Yes	Longfellow Middle School Paving Improv	7600 W. North Avenue	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Porous asphalt pavement, sumped CB's
18-14	Yes	Lutheran Home Memory Care	7500 W. North Avenue	Kathy Cavers		The Lutheran Home	7500 W. North Ave	Wauwatosa	WI	53213	414-258-6171 ext. 309	kathy_cavers@thelutheranhome.org	2 Underground detention systems, 2 up-flow filters, sumped CB's
18-22	Yes	Renaissance Hotel	2300 N. Mayfair Road	Kyle Stringenz		Mayfair Hotel Holdings LLC	172 N Broadway	Milwaukee	WI	53203		kastrigenz@gmail.com	Controlled Rooftop Detention and 10 sumped CB's
19-07	Yes	St Camillus Tower	10100 W. Blue Mound Road	David Sinkula		St. Camillus Health System, Inc.	10101 W. Wisconsin Ave	Wauwatosa	WI	53226	414-259-3751	dsinkula@stcam.com	2 underground detention systems, 3 up-flow filters and 2 dry detention basins
19-09	Yes	Underwood Elementary School	11132 W. Potter Road	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Dry Pond, Permeable Pavement, Synthetic Turf-Underdrain system, Sumped CB's (12)
19-12	Yes	Wauwatosa East H.S. Site Improvements	7500 Milwaukee Avenue	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Biofiltration basins, porous pavement, sumped CB's
19-14	Yes	Lincoln Elementary School	1741 Wauwatosa Avenue	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	2 Biofiltration basins, Turf-Underdrain system, permeable pavers, 15 sumped CB's
19-24	Yes	Wilson/WSTEM Elementary School	1060 Glenview Avenue	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	2 Biofiltration basins, Turf-Underdrain system
19-25	Yes	McKinley Elementary School	2435 N 89th Street	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Biofiltration basin, Turf-underdrain system, permeable pavers
19-30	No	Mayfair Collection Phase 4											2 Underground detention systems
19-31	Yes	River Parkway	6400-6442 River Parkway	Mark Hammond	Vice President of Development	MSP Real Estate, Inc	7901 W National Ave	West Allis	WI	53214	414-259-2108	mhammond@msphousing.com	Underground detention system
20-07	Yes	Amazon	11800 W Burleigh St	Beth Rummel	Property Manager	Phoenix Investors, LLC	401 E Kilbourn Ave, Suite 201	Milwaukee	WI	53202	414-719-6779	brummel@phoenixinvestors.com	Underground Stormtrap Detention
20-18	Yes	Ronald McDonald House	8984 W Watertown Plank Rd	Ann Petrie		Ronald McDonald House Charities of Eastern WI	8948 W. Watertown Plank Rd	Wauwatosa	WI	53226	414-475-5333	apetrie@rmhc-easternwi.org	2 Dry Detention Basins
21-01	Yes	Watertown Apartments	9150 W Watertown Plank Rd	Patrick Shanahan	Property Owner	Watertown Apartments, LLC	9150 Watertown Plank Rd	Wauwatosa	WI	53226	414-793-8311	pshano4@outlook.com	2 biofiltration basins, permeable pavement draining to an underground storage layer
21-07	No	Campbell Apartments	2911-2949 N Mayfair Rd										Underground detention system
21-11	Yes	Roosevelt Elementary	2535 N 73rd St	Greg Choinski	Director of Buildings and Grounds	Wauwatosa School District	12121 W North Ave	Wauwatosa	WI	53226	414-773-1053	choinsgr@wauwatosa.k12.wi.us	Turf-underdrain system
21-08	No	Irgen's UWM Innovation Campus	9480 W Watertown Plank Rd										

Jessica Henderson

From: Dan Meier <DMeier@lynch-engineering.com>
Sent: Thursday, July 28, 2022 2:52 PM
To: Jessica Henderson; Jennifer Stilling
Cc: mckendryj@stjoetosa.com; Tim Lynch; gerard@treesonthemove.com; apoblocki@poblockipaving.com
Subject: RE: [External] FW: St Joseph's Parking Lot

Thanks Jessica,

We are working on updating the layout of the parking lot and calculating the disturbance areas, and vehicular use areas. We will submit a couple of exhibits for you to review. I am sure there will be some discussions back and forth, because of the multi-use nature of these lots.

Thanks,

Dan Meier, P.E. • Principal
Lynch & Associates - Engineering Consultants, LLC • Innovative Impact
Office: 262 402 5040 | Direct: 262 402 5044
Mobile: 262 751 1873 |
dmeier@lynch-engineering.com | lynch-engineering.com
5482 S. Westridge Drive | New Berlin, WI 53151

From: Jessica Henderson <jhenderson@wauwatosa.net>
Sent: Wednesday, July 27, 2022 12:45 PM
To: Dan Meier <DMeier@lynch-engineering.com>; Jennifer Stilling <jstilling@wauwatosa.net>
Cc: mckendryj@stjoetosa.com; Tim Lynch <TLynch@lynch-engineering.com>; gerard@treesonthemove.com; apoblocki@poblockipaving.com
Subject: RE: [External] FW: St Joseph's Parking Lot

Hi Dan,
As discussed, these are the documents we received back in 2020 describing the use of the parking lots. Determining the vehicular use area will determine the required interior landscaping requirements. The stormwater requirements are determined by the total amount of disturbance area and any additions of impervious area.

Again, we don't need a full plan revision submittal initially. We are looking to get a clearer picture of proposed work limits and what type of work (Site Plan basically). Other plan sheet revisions can come with the actual permit application submittal once we determine the escrow amount.

Thanks,

Jessica Henderson, P.E.
Civil Engineer
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213
P 414.479.8978
F 414.471.8492
jhenderson@wauwatosa.net

Wauwatosa Self Serve Portal: Online Permitting

From: Dan Meier <DMeier@lynch-engineering.com>
Sent: Wednesday, July 27, 2022 12:19 PM
To: Jennifer Stilling <jstilling@wauwatosa.net>; Jessica Henderson <jhenderson@wauwatosa.net>
Cc: mckendryj@stjoetosa.com; Tim Lynch <TLynch@lynch-engineering.com>; gerard@treesonthemove.com; apoblocki@poblockipaving.com
Subject: [External] FW: St Joseph's Parking Lot

Hi Jessica and Jennifer,

Tim is out of the office today, but we have been working on the plan updates. I spoke with Jess about ½ hour ago and are looking into the disturbance limits and the new impervious surface area. I believe the new impervious surface are will go down, as we were reducing the parking lot size. I am adding Gerard with Trees on the Move into the discussions as I believe he working on the landscape plan and the vehicular use areas could impact his design. We should have the disturbance areas calculated fairly soon here and have a better understanding of what storm water impacts there will be. We hope to get back to you later today or tomorrow on out plan moving forward.

Thanks,

Dan Meier, P.E. • Principal
Lynch & Associates - Engineering Consultants, LLC • Innovative Impact
Office: 262 402 5040 | Direct: 262 402 5044
Mobile: 262 751 1873 |
dmeier@lynch-engineering.com | lynch-engineering.com
5482 S. Westridge Drive | New Berlin, WI 53151

From: Tim Lynch <TLynch@lynch-engineering.com>
Sent: Wednesday, July 27, 2022 11:30 AM
To: Dan Meier <DMeier@lynch-engineering.com>
Subject: Fwd: St Joseph's Parking Lot

Timothy C. Lynch, P.E.
Principal

Direct: 262.402.5034 **Office:** 262.402.5040
Mobile: 262.206.5168
Web: http://www.lynch-engineering.com
Email: tlynch@lynch-engineering.com

Begin forwarded message:

> **From:** Jennifer Stilling <jstilling@wauwatosa.net>
> **Date:** July 27, 2022 at 10:38:37 AM CDT
> **To:** Tim Lynch <TLynch@lynch-engineering.com>, mckendryj@stjoetosa.com
> **Cc:** Stephanie Wilson <swilson@wauwatosa.net>, Jessica Henderson <jhenderson@wauwatosa.net>
> **Subject: RE: St Joseph's Parking Lot**
>
> Hello,
>
> City staff visited the site yesterday and it appears that the existing parking lot is in the process of complete reconstruction and expansion. The proposed construction may require stormwater management based on the amount of disturbance area and adherence to the City's Landscaping Code will be required.
>
> **Work on the site must cease immediately until City Engineering has approved the proposed plans.** Any work that has already been completed since the start of this recent construction is subject to full compliance with City Code.
>
> We did receive a call from Tim at Lynch Engineering yesterday morning. My co-worker Jessica Henderson called Tim back and left a voice mail message. We have not heard back.
>
> **Jennifer Stilling, PE**
> *Senior Civil Engineer*
> City of Wauwatosa
> 7725 W. North Ave
> Wauwatosa, WI 53213
> Phone: 414.479.8934
> jstilling@wauwatosa.net
>
> **Wauwatosa Self Serve Portal: Online Permitting**

From: Jennifer Stilling
Sent: Friday, July 22, 2022 1:25 PM
To: 'jerry.kohlmann@gmail.com' <jerry.kohlmann@gmail.com>; 'mckendryj@stjoetosa.com' <mckendryj@stjoetosa.com>
Cc: Stephanie Wilson <swilson@wauwatosa.net>; Jessica Henderson <jhenderson@wauwatosa.net>
Subject: St Joseph's Parking Lot
Importance: High

Jerry:

It was brought to our attention today that the St Joseph's parking lot is currently under construction.

We are not aware of the extent of improvements and this parking lot does not have a construction plan that has been approved by the Engineering Department. The City has informed you previously that any expansion, reconfiguration, or full parking lot pavement replacement requires a parking lot and landscaping plan submittal to the City for review and approval.

Any work that has already been completed since the start of this recent construction is subject to full compliance with City Code.

Please respond with a plan of the proposed construction for City review. If staff determines that Site Civil and Landscaping review is required based on the scope of work, a $75 application fee and $3,000 Engineering review escrow must be submitted to the City.

Your prompt attention to this matter is appreciated.

Regards,

Jennifer Stilling, PE
Senior Civil Engineer
City of Wauwatosa
7725 W. North Ave
Wauwatosa, WI 53213
Phone: 414.479.8934
jstilling@wauwatosa.net

Wauwatosa Self Serve Portal: Online Permitting

From: Jerry Kohlmann <jerry.kohlmann@gmail.com>
Sent: Wednesday, February 16, 2022 9:52 AM
To: Jessica Henderson <jhenderson@wauwatosa.net>
Cc: Julie McKendry <mckendryj@stjoetosa.com>; Stephanie Wilson <swilson@wauwatosa.net>
Subject: Re: [External] 2022 Questions on St Joseph's Parking Lot plans

Jessica — Thanks for confirming these things and giving me some examples.
I knew West wasn't "quite right", but it is similar to our lot, so it will provide some inspiration, I think.
I'm trying to keep this thing moving while its still February.

Jerry Kohlmann

On Feb 16, 2022, at 09:48, Jessica Henderson <jhenderson@wauwatosa.net> wrote:

Hello Jerry,

Thank you for getting in touch on the progress of this project. There have been no changes to our ordinances or exceptions to the ordinances since we last talked in 2018, and no grandfathering in of old parking lots are considered. Therefore any full pavement replacement of parking lots would trigger the landscape code.

In terms of other recent examples of larger parking lots meeting our City code:

- St. Camillus Campus – 10100 W Bluemound Rd
- Underwood Elementary School
- Muir Woods – 10401 W Innovation Dr

The Wauwatosa West High School parking lot is not the best example for the current code requirements as this was designed/constructed prior to the latest version of this code.

Thank you,

Jessica Henderson, P.E.
Civil Engineer
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213
P 414.479.8978
F 414.471.8492
jhenderson@wauwatosa.net

From: Jerry Kohlmann <jerry.kohlmann@gmail.com>
Sent: Tuesday, February 8, 2022 2:51 PM
To: Jessica Henderson <jhenderson@wauwatosa.net>
Cc: Julie McKendry <mckendryj@stjoetosa.com>
Subject: [External] 2022 Questions on St Joseph's Parking Lot plans

Hello again, Jessica — St. Joseph's Parish has high hopes to complete our parking lot project this year, so we need to get our drawings in order.

To that end, we have to get busy on the landscaping plan…the site plan from 2018 is still essentially what we have in mind.
I've seen the web page for the requirements…
We aren't eligible for any sort of landscape grandfathering, are we? (sorry, had to ask)

Are there any recently completed parking lots that I could go look at for inspiration?

I've gone and looked at the newer Wauwatosa West parking lot on the west side of school, but I'm not sure what version of the code that parking lot might be built to uphold, as there aren't islands every 15 stalls. Could you please help me understand that?

Thank you in advance…we hope to do this project late June and July 2022.

Jerry Kohlmann 414-788-1880
Buildings and Grounds Volunteer
St. Joseph Parish

cc: Julie McKendry, Business Administrator

On Mar 19, 2020, at 11:33 AM, Jessica Henderson <jhenderson@wauwatosa.net> wrote:

Hi Jerry,

Thank you for your email. As discussed in the pre-application meeting we would consider the landscaping code to be met as a full site and not for each individual parking lot. Only the paved areas being used for vehicular use would be required to meet the landscape code (example is the playground area on northwest side of the west lot would not be required to meet this code).

That being said, in order to eventually approve this approach, we would need your plan submittal to show your proposed phases and how you are going to meet this code requirement. If not all landscaping is constructed within the first phase of the project, City staff will need to discuss how we would get around this until the full site is constructed. It may be that you would need a variance to the landscape code until the future phases are constructed (approval from Board of Public Works)? But we can discuss this further once you have determined your construction schedule.

Feel free to contact me with any other questions.

Jessica Henderson, P.E.
Civil Engineer
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213
P 414.479.8978
F 414.471.8492
jhenderson@wauwatosa.net

The safety of our community is our top priority. Please see our Wauwatosa COVID-19 webpage for the most updated information about city services.

From: Jerry Kohlmann [mailto:jerry.kohlmann@gmail.com]
Sent: Wednesday, March 18, 2020 8:42 PM
To: Jessica Henderson <jhenderson@wauwatosa.net>
Subject: [External] Re: Questions on St Joseph's Parking Lot plans

Hi Jessica — I'm sorry — this is not an emergency by any means

We've been slowed down financially on this project because the market crashed.
So…I'm kicking around an idea to redo the parking area on our west lot, and then let the playground and the east side ride until we can afford it.

Just so I get it right, the landscaping could be done all on the west side, if the math for the entire site is done. Is this correct?
Does the entire asphalt area count in the landscape plan area, or is the playground area on our west side out of the equation square footage wise, except for the perimeter shielding?

Thank you very much.
Jerry Kohlmann

On Mar 18, 2020, at 4:47 PM, Jessica Henderson <jhenderson@wauwatosa.net> wrote:

Hi Jerry,

My schedule at the moment is a little bit crazy as I have 3 small children without school or daycare, so my hours are little all over the place right now. Hoping to get a little more structure by next week, but I wondered if you would be able to email me your questions and I can try to get back to you via email as I am working from home (mainly when kids are asleep!).

Otherwise Friday I should be in the office on Friday morning if you wanted to wait to speak to me then.

Thank you for your patience with my response time.

Jessica Henderson, P.E.
Civil Engineer
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213
P 414.479.8978
F 414.471.8492
jhenderson@wauwatosa.net

The safety of our community is our top priority. Please see our Wauwatosa COVID-19 webpage for the most updated information about city services.

Public Works Yard
Quarterly Site Inspection Checklist

Quarterly site inspections are performed to evaluate the effectiveness of controlling stormwater contamination and to identify any

1. Drainage conditions.

-Inspect site for possible erosion problems.

None

-Determine if drainage off the Property has changed.

Drainage has not changed

-Are there any new areas of ponding or streaming?

None

2. Potential Pollution Sources

-Is there any indication of oils or greases in the outdoor material storage areas?

No

-Is there any standing water with sheens, sludge, foam, etc.?

No

-Are there any signs of erosion or sediment transport into inlets or off site from storage areas?

No - Ensure daily clean up of spilled soil/gravel from covered storage areas

-Is there any litter or debris not associated with normal operations (such as snow removal)?

No

-Are there any signs of spills or other contaminants on the Property?

No

-Is there any cracking or other signs of wear on the fuel island pump hoses?

No

3. Catch Basins

-Is there sediment buildup that requires cleaning (sump should be no more than 40% full).

No

- Is there any floating oils or greases in catch basins?

No

4. Other Observations:

- Take note of anything else at the Property that may be of significance to the Storm Water Pollution Prevention Plan.

Signed: J. Henderson Printed Name: Jessica Henderson

Title: Civil Engineer Date: 3/21/2022

Public Works Yard
Quarterly Site Inspection Checklist

Quarterly site inspections are performed to evaluate the effectiveness of controlling stormwater contamination and to identify any

1. Drainage conditions.

-Inspect site for possible erosion problems.

None

-Determine if drainage off the Property has changed.

Drainage has not changed

-Are there any new areas of ponding or streaming?

None

2. Potential Pollution Sources

-Is there any indication of oils or greases in the outdoor material storage areas?

No

-Is there any standing water with sheens, sludge, foam, etc.?

No

-Are there any signs of erosion or sediment transport into inlets or off site from storage areas?

No - Ensure daily clean up of spilled soil/gravel from covered storage areas - particularly by downspout on the NE corner

-Is there any litter or debris not associated with normal operations (such as snow removal)?

No

-Are there any signs of spills or other contaminants on the Property?

No

-Is there any cracking or other signs of wear on the fuel island pump hoses?

No

3. Catch Basins

-Is there sediment buildup that requires cleaning (sump should be no more than 40% full).

No

- Is there any floating oils or greases in catch basins?

No

4. Other Observations:

- Take note of anything else at the Property that may be of significance to the Storm Water Pollution Prevention Plan.

Signed: J. Henderson Printed Name: Jessica Henderson

Title: Civil Engineer Date: 6/23/2022

Public Works Yard
Quarterly Site Inspection Checklist

Quarterly site inspections are performed to evaluate the effectiveness of controlling stormwater contamination and to identify any

1. Drainage conditions.

-Inspect site for possible erosion problems.

None

-Determine if drainage off the Property has changed.

Drainage has not changed

-Are there any new areas of ponding or streaming?

None

2. Potential Pollution Sources

-Is there any indication of oils or greases in the outdoor material storage areas?

No

-Is there any standing water with sheens, sludge, foam, etc.?

No

-Are there any signs of erosion or sediment transport into inlets or off site from storage areas?

No - Ensure daily clean up of spilled soil/gravel from covered storage areas

-Is there any litter or debris not associated with normal operations (such as snow removal)?

No

-Are there any signs of spills or other contaminants on the Property?

No

-Is there any cracking or other signs of wear on the fuel island pump hoses?

No

3. Catch Basins

-Is there sediment buildup that requires cleaning (sump should be no more than 40% full).

No

- Is there any floating oils or greases in catch basins?

No

4. Other Observations:

- Take note of anything else at the Property that may be of significance to the Storm Water Pollution Prevention Plan.

Signed: J. Henderson Printed Name: Jessica Henderson

Title: Civil Engineer Date: 9/29/2022

Public Works Yard
Quarterly Site Inspection Checklist

Quarterly site inspections are performed to evaluate the effectiveness of controlling stormwater contamination and to identify any

1. Drainage conditions.

-Inspect site for possible erosion problems.

None

-Determine if drainage off the Property has changed.

Drainage has not changed

-Are there any new areas of ponding or streaming?

None

2. Potential Pollution Sources

-Is there any indication of oils or greases in the outdoor material storage areas?

No

-Is there any standing water with sheens, sludge, foam, etc.?

No

-Are there any signs of erosion or sediment transport into inlets or off site from storage areas?

No - Ensure daily clean up of spilled soil/gravel from covered storage areas

-Is there any litter or debris not associated with normal operations (such as snow removal)?

No

-Are there any signs of spills or other contaminants on the Property?

No

-Is there any cracking or other signs of wear on the fuel island pump hoses?

No

3. Catch Basins

-Is there sediment buildup that requires cleaning (sump should be no more than 40% full).

No

- Is there any floating oils or greases in catch basins?

No

4. Other Observations:

- Take note of anything else at the Property that may be of significance to the Storm Water Pollution Prevention Plan.

Catch basins near the fire training grounds were clogged with mulch and not draining, keep these grates clear of debris

Signed: J. Henderson Printed Name: Jessica Henderson

Title: Civil Engineer Date: 11/9/2022

Public Works Department - Operations Section

STREET AND SEWER MAINTENANCE 2012 - 2022

STREET REPAIRS	UNIT	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Asphalt Patch Material Used	Tons	673	830	861	1,104.28	697.60	958.15	456.41	809.38	707.72	797.56	1004.27
Crackfiller Used	Gallons	NA	4,180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete placed	Cu. Yd.	*7 144	187	154	246.80	297.75	261.50	236.75	377	217	311	287.5
SANITARY SEWER CLEANING		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Number of Calls	Each	123	149	175	120	69	88	85	66	98	75	85
Linear feet cleaned	Lin. Ft.	511,020	302,524	307,944	243,915	332,001	320,490	119,736	169,368	253,755	165,149	315,987
Water to clean	Gallons	887,020	439,500		326,500	489,000	339,500	125,500	236,250	336,750	264,000	454,500
STORM SEWER CLEANING		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Linear feet cleaned *9			*9 1110	278	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No. Catch Basins Cleaned			836	209	605	911	883	492	626	600	609	635
Tons of Debris Removed			405	50	117	138.77	150.28	69.31	98.7	74.54	78.38	104.31
STREET SWEEPING		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Lane Miles Cleaned						3,250	3,800	2,199	3,353	4,016	3,111	3,632
Tons of Debris Removed						578.07	505.81	567.53	956.94	966.44	705.73	718.42
SNOW AND ICE CONTROL		**11-12**	**12-13**	**13-14**	**14-15**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
Number Plowing Operations	Season	3	4	7	5	2	2	-	-	-	-	-
Number Salting Operations	Season	20	26	43	23	17	16	-	-	-	-	-
Number Plow/Salt Operations *10	Season	0	2	5	2	2	3	35	38	39	33	22
Salt Tonnage	Season	3,406	5,484	5,648	3,921	2,562	2,872	4,650	4,895	4,104	4,276	3,425
Total Cost Snow & Ice Control	Season	$333,595	$536,701	$700,777	$365,412	$333,622	$408,934	$605,177	$750,890	$631,314	$651,489	$465,013
Cost/Mile of Streets/Alleys	184 Miles	$1,813	$2,917	$3,809	$1,986	$1,813	$2,222.47	$3,289.00	$4,080.92	$3,431.05	$3,540.70	$2,527.24

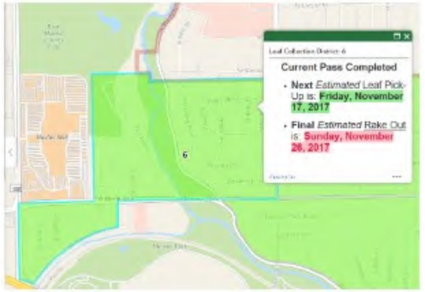
Note 3: FEMA Reimbursement of $70,278
Note 4: Includes 381 calls for June Flood
Note 5: 18.6 pounds per gallon conversion
Note 6: FEMA Reimbursement of $36,368.95 for July 22, 2010 flooding - 300 calls
Note 7: 2011/12 personnel shortage
Note 8: Also hauled snow 3 nights
Note 9: Storm sewer cleaning started in August 2013
Note 10: Plow/Salt operations to be tracked jointly.

City of Wauwatosa Leaf Collection Status

The Interactive Leaf Collection Status Map is updated daily by the City of Wauwatosa.

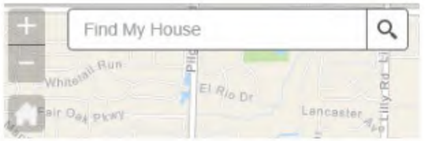
Click on the map

(To learn more about the status of Leaf Pick-Up in your area)



OR

(Use the **Search Tool** to locate your property by address)

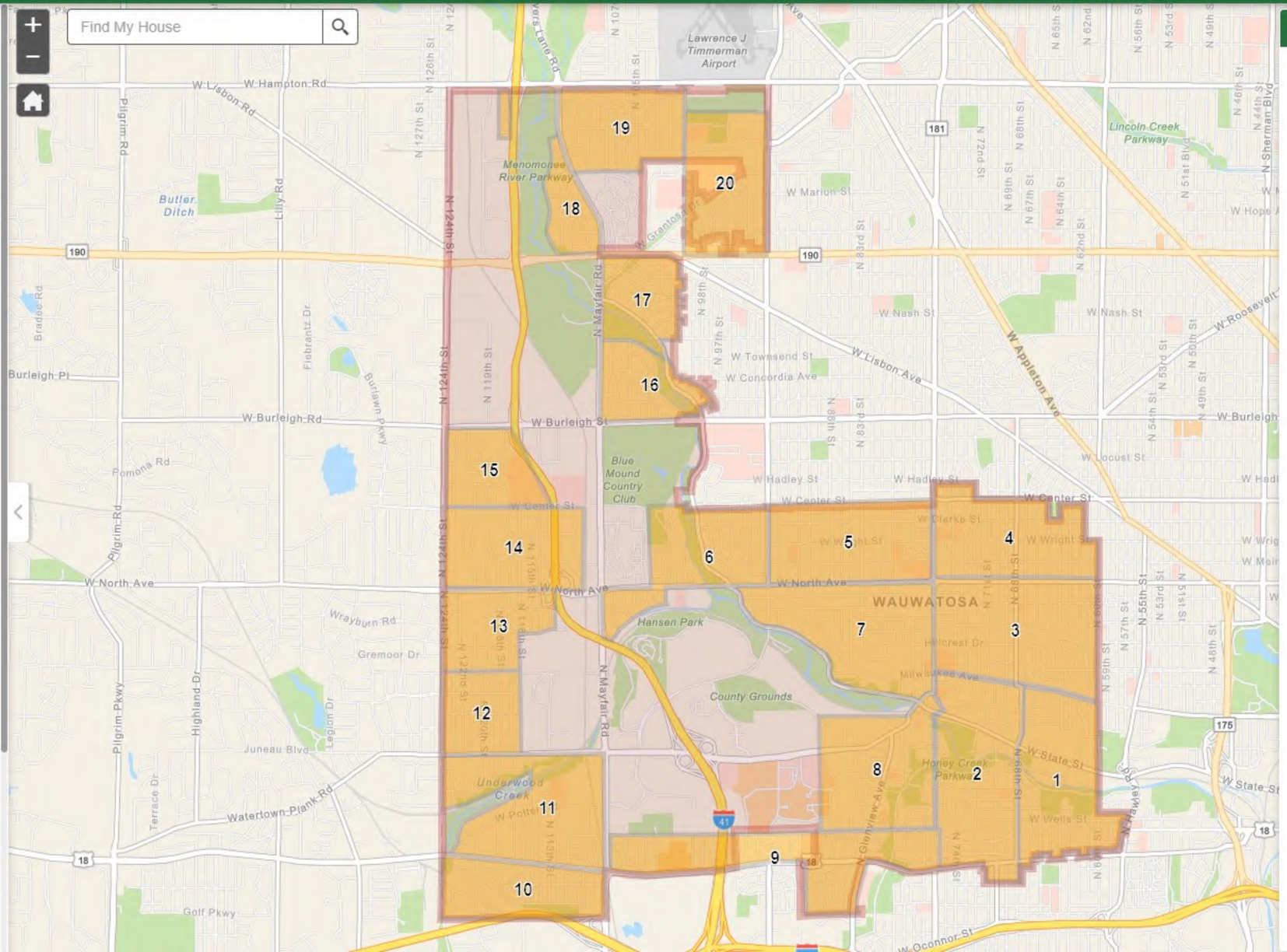


The last day of yard waste pick up will be **Friday, October 11th.** Rake out of property can begin on **Saturday, October 12th.** This operation will continue until **Sunday, November 24th or later if weather permits.** During this period we will schedule to make three passes through the City.

Please use the Interactive Map to view projected times that we will be in your area.

A FEW NOTES

- Please make sure to rake in only **leaves and soft plant material.** Branches and other woody material significantly slow down the composting process. Yard waste can still be brought into the drop off



FUND NO. 52

STORM WATER MGMT RESERVE

PURPOSE

The Storm Water Management Budget involves the inspecting, cleaning, and repairing of over 103 miles of storm sewers and 7,247 storm inlets in the City. It also involves responding to flooding and other emergencies to clear inlets and keep water flowing as needed. A storm water utility was formed in 2000.

BUDGET SNAPSHOT

	2022	2023	Change
Exp	$ 3,955,096	$ 3,923,097	$ (31,999)
Rev	$ 6,109,388	$ 6,414,998	$ 305,610
Net Cost	$ (2,154,292)	$ (2,491,901)	$ (337,609)
FTE's			

MAJOR CHANGES

- 0% rate increase in 2023
- $57,680 grant received from WDNR in 2022 will be utilized in 2023.
- Street sweeping screening and disposal costs moved from Solid Waste budget to Storm budget ($7,500) and part of 2023 levy reduction.

PROGRAMS/SERVICE LINES

STORM SEWER CLEANING PROGRAM

Covers inspecting of over 7,247 storm inlets over 10 years with annual inlet and catch basin cleaning generating about 75 tons of material for disposal. Wisconsin Chapter NR 216 has increased the cleaning effort which is generally completed with treating basins for West Nile. 600 basins should be cleaned annually to remain in compliance with DNR requirements.

STORM SEWER REPAIRS PROGRAM

Storm sewer repair involves inspection and repair of manholes and inlets by area every ten years, with scheduled repairs usually in street sealcoating areas, and non-scheduled repairs outside of those areas as needed.

LEAF COLLECTION PROGRAM

The program attends to fall leaf pick-up and sweeping of leaves in the streets, as well as recovery of those leaves. Approximately 4,000 tons of leaves are collected annually.

STREET CLEANING PROGRAM

Performs a minimum of six complete cycles of sweeping of all City streets and alleys as well as hand sweeping areas on medians, difficult-to-sweep parking lots, and islands.

GREEN ALLEY MAINTENANCE PROGRAM

Green alleys reduce rainfall runoff, help clean and recharge groundwater and alleviates flooding concerns. Green alleys present certain unconventional maintenance responsibilities which include vacuum and mechanical sweeping, weed control in pavers, debris removal and replacement of the stone between the porous pavers after each cleaning to prevent clogging.

PLANTING PROGRAM

Planting of approximately 400 to 500 trees and other vegetation to reduce the potential negative impacts of surface water runoff by intercepting and holding large volumes of precipitation on surface areas (i.e. leaves, branches and trunks) while reducing soil erosion by slowing the speed of runoff on the ground. Trees extensive roots systems increase the infiltration and storage of storm water in the soil.

EAB TREATMENT PROGRAM

In recognition of the contribution trees make towards reducing the amount of storm water runoff, the City funds a portion of the Emerald Ash Borer (EAB) treatment program using storm water utility funds.

2022 ACHIEVEMENTS

- To be in compliance with the City's NR 216 permit, approximately 600 basins in the City must be cleaned annually. As of July 28, 2022, 532 catch basins have been cleaned removing 83.74 tons of debris. Currently, the Department is on a two-year cleaning cycle for the City's catch basins.
- As of July 28, 2022, our street sweeping program has removed 593 tons of debris from city streets and has completed three cycles of sweeping the entire City of Wauwatosa.
- All of the storm sewers and catch basins were inspected, tuck pointed, or rebuilt in the 2022 sealcoat area.
- Exploring utilization of online street sweeping tracking map similar to leaf collection map.

2023 GOALS

- Improve green alley maintenance program efficiencies.
- Develop and implement maintenance program for police department porous pavement parking lot.
- Continue inlet cleaning program and programmed inspections and repairs of inlets in conjunction with the seal coating program.
- Explore the future use of the GIS for tracking maintenance and repairs.
- Launch online street sweeping tracking map.
- Continue update of Stormwater Management Plan

2022 BUDGETARY CHANGES

CAPITAL OUTLAY TECHNICAL CHANGE — DECREASE $132,286

The new Tyler system automatically carries over contract balances, including capital project contracts. Staff did not realize that we had to still manually adjust a contra expense account in order to offset the capital expense that is intended to be recorded for budget purposes only. Capital items are depreciated not expensed in enterprise funds. This adjustment fixes that error.

STORM WATER FEES — INCREASE $27,161

Storm water fee revenue is re-estimated up by $27,161 to $5,953,731 due to additional impervious surface being charged.

2023 BUDGETARY CHANGES

STORM WATER FEES — DECREASE $19,169

The 2023 Budget assumes a 0% rate increase as originally forecasted last year. The revenue decreases despite the 0% rate increase due to changes in the number of customers. This results in a decrease in storm water fees of $19,169 to $5,945,739. Historical rate increases have been necessary to fund capital improvements that address deferred maintenance as well as street and basement back-ups during heavy rain events. The table below shows the impact of this rate increase on a residential bill and future planned rate increases. It should be emphasized that 2023 rate is an estimate and may be impacted by final figures associated with the 2022 debt issuance and the finalization of the 2023-2027 Capital Improvement Plan.

Projected Storm Sewer Rate Increases

	2020	2021	2022	2023B	2024F	2025F	2026F	2027F
Rate Increase	5%	0%	0%	0%	3%	3%	3%	3%
Quarterly Residential Bill Est.	$ 32.63	$ 32.63	$ 32.63	$ 32.63	$ 33.61	$ 34.62	$ 35.66	$ 35.66

INTERGOVERNMENTAL REVENUES — INCREASE $283,549

The City will continue to receive MMSD revenue for green alleys for the foreseeable future. These revenues are budgeted in the capital budget and the re-estimated operating budget.

CONRTACTUAL SERVICES — DECREASE $12,400

Contractual services increased $4,000 to $294,000 due to several factors.

- $176,0000 is budgeted for sewer televising
- Addition of street sweeping and catch basin testing, removal and disposal - $17,000. $14,000 of this is offset by use of funds previously allocated to public outreach not being utilized.

Other Services increased to $8,400 for water bank fees. These were not previously budgeted and are currently $700 per month.

FIXED CHARGES — INCREASE $92,898

Interest expense on debt decreased $28,077 to $486,133 based on the debt schedules for outstanding debt and the assumed 2022 debt issuance as well as the cash financing included in 2022. Depreciation also increases by a $60,531 to $984,554 due to increased capital investments.

CASH FINANCING — NO CHANGE

$700,000 is included to cash finance capital projects in order to reduce overall debt and interest expense

BUDGET SUMMARY TABLE

Storm Sewer Fund #52					
Expenditures					
2021 Actual	**2022 Adopted Budget**	**2022 Revised**	**Name**	**2023 Budget**	**2023 / 2022 % of Change**
343,447	415,701	415,701	Wages	420,471	1.1%
27,648	15,000	15,000	Overtime	15,000	0.0%
158,453	216,063	216,063	Benefits	197,178	-8.7%
414	402	402	Other Compensation	362	-10.0%
11,210	21,425	29,835	Operating Expenses	21,425	0.0%
99,998	138,350	138,350	Commodities	138,350	0.0%
207,922	405,032	529,658	Services	366,815	-9.4%
2,024	4,888	5,147	Utilities	5,352	9.5%
1,427,060	1,382,079	1,349,164	Fixed Charges	1,474,977	6.7%
498,300	493,946	493,946	Internal Charges	419,782	-15.0%
160,589	162,210	163,385	Other Expenses	163,385	0.7%
1,563,457	4,349,177	4,481,463	Capital Outlay	700,000	-83.9%
(1,559,543)	(3,649,177)	(3,781,463)	Asset Purchase Contra	-	-100.0%
-	-	-	Capital Transfers	-	0.0%
2,940,978	**3,955,096**	**4,056,651**	**TOTAL**	**3,923,097**	**-0.8%**
Revenues					
2021 Actual	**2022 Adopted Budget**	**2022 Revised**	**Name**	**2023 Budget**	**% of Change**
235,078	75,000	75,000	InterGov Revenues	358,549	378.1%
41,197	41,000	53,000	Fines and Penalties	50,000	22.0%
6,451,231	5,926,570	5,953,731	Public Charges	5,945,739	0.3%
12,537	4,500	4,800	Miscellaneous	4,800	6.7%
80,398	62,318	64,126	Other Sources	55,910	-10.3%
6,820,442	**6,109,388**	**6,150,657**	**TOTAL**	**6,414,998**	**5.0%**
Net Cost					
(3,879,463)	**(2,154,292)**	**(2,094,006)**	**TOTAL**	**(2,491,901)**	**15.7%**

PERSONNEL SCHEDULE

*Personnel are allocated to this budget from Public Works Operations.

Sensible Salting Program

The Sensible Salt Programs goal is to reduce salt usage by 30% and keep the environment cleaner. Under this program, Wauwatosa will limit salting on secondary roads; limit overnight salting; focus application at hills, intersections, curves, and bridges; and implement spot salting, or salting at 150 ft. intervals on main roads.

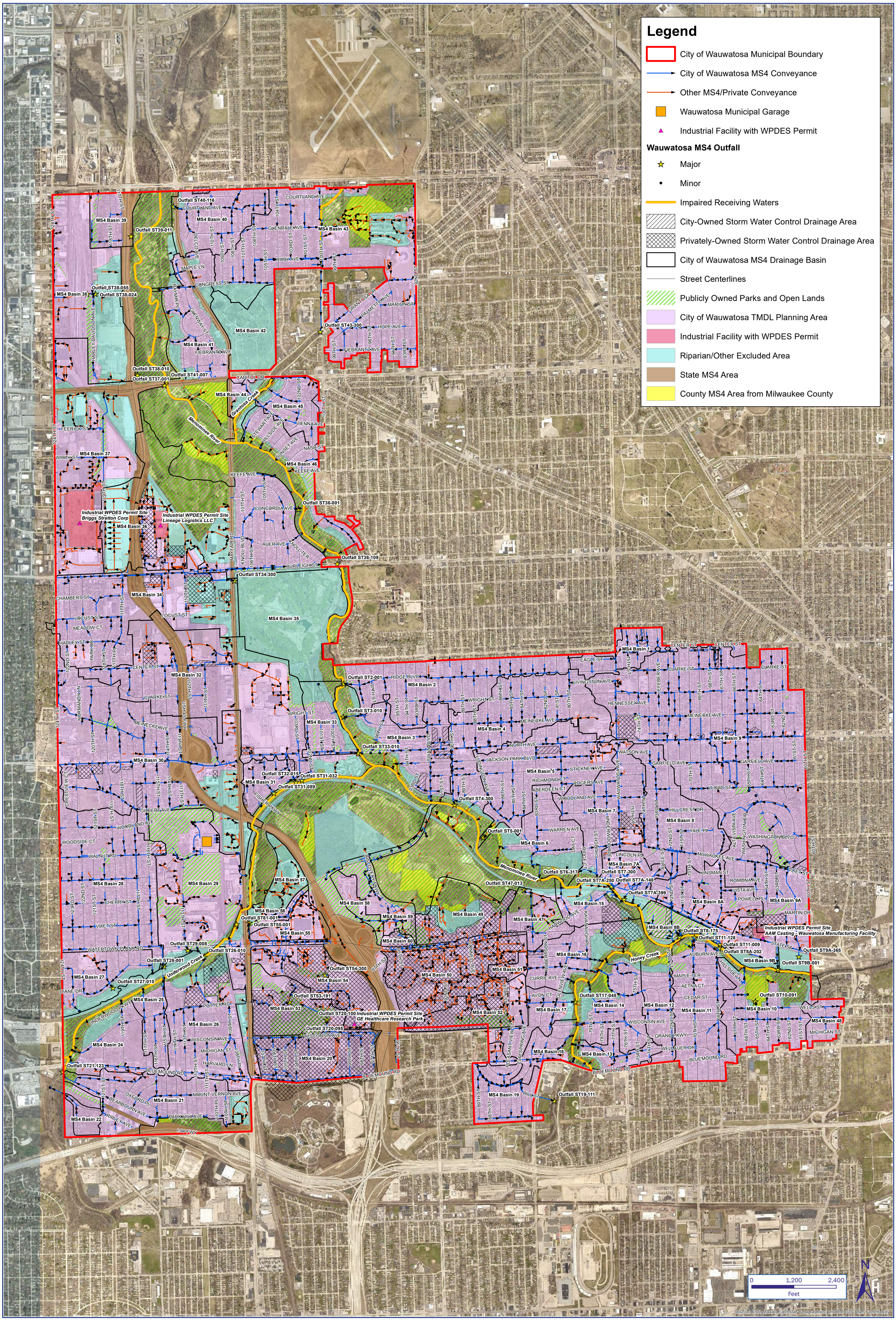
Sensible Salting: "the right amount in the right place at the right time."

Sensible salting requires, among other things, careful application of salt, good spreading equipment, calibration of spreaders, automatic controls, adequate covered storage, proper maintenance around storage areas and an awareness by all who use salt of the need to protect the environment.

Sensible Salting Practices lead to a 30% reduction in salt usage and help to keep our environment clean. Sensible Salting Practices include the following policies used by the City of Wauwatosa Department of Public Works:

- Limited Salting During the Late Evening/Early Morning Hours: From 11:00 p.m. - 4:00 a.m. very limited salting will take place, as salting is not effective due to low traffic volumes. The goal of the DPW during this time is to ensure passable roads, which means only intersections, hills, curves, and bridges will be salted. Beginning at 4:00 a.m., DPW prepares the roads for rush hour. There may be some snow pack in the middle of the block until sun, traffic and salt tracking melts snow.
- Salting During Snow Events: During periods of 1' inch per hour snowfall or greater, main roads will be plowed as frequently as possible. These roads will also be salted at intersections, hills, curves, bridges, and school zones. "Spot Salting" will also be utilized which means roads will be salted at 150 ft. intervals to allow the salt to be effectively spread around.
- Limited Salting on Secondary Roads: Secondary Roads (side streets) will be plowed as often as possible, but will only be salted at intersections, bridges, hills, curves, and school zones for 200 ft. intervals. Spot Salting will also be used when necessary.
- Proper Training of Employees and Communication of this Policy: The Director of Public Works is responsible for ensuring all employees understand and follow the City's Sensible Salting Practices.
- Proper Calibration of Equipment: All equipment will be calibrated to ensure the Sensible Salting Practices are implemented correctly.
- Investigation of Alternative Products: The Department of Public works will continue to investigate, purchase, and utilize other alternative products such as brine and other enhanced deicers.

When conditions warrant, such as those found during and after an ice storm, the City has the ability to salt as necessary, as safety of the residents and visitors of the City of Wauwatosa remains our main priority.



Brown AND Caldwell

Figure 5-1
MS4 Storm Sewer System Map
City of Wauwatosa
Stormwater Quality Management Plan

WAUWATOSA
IN GOD WE TRUST

CITY OF WAUWATOSA
ENGINEERING SERVICES
7725 WEST NORTH AVENUE
WAUWATOSA, WI 53213
Telephone: (414) 479-8927
www.wauwatosa.net

William T. Wehrley, P.E.
City Engineer
wwehrley@wauwatosa.net

CITY OF WAUWATOSA
BACTERIA SOURCE INVENTORY

As a part of the City's WPDES Permit (WI-S065404-2) the City of Wauwatosa shall develop and submit an inventory of fecal coliform sources and a map indicating the location of the potential sources. The following is a list of potential sources investigated:

1. Known or suspected leaking or failing septic systems.
    a. There are no known septic systems within the City of Wauwatosa

2. Sanitary sewer overflow locations
    a. WA3012-189A
    b. WA3012-187A
    c. WA3040-124A
    d. WA3008-255A
    e. WA3032-227
    f. WA3032-238
    g. WA3037-503A

3. Livestock and domesticated animals housed or raised within the MS4 permitted area and discharging into the MS4, but not including household pets.
    a. There are no known livestock housed/raised within the City of Wauwatosa

4. Zoos, kennels, animal breeders, pet stores, and dog training facilities.
    a. 2929 N 114th St
    b. 6228 W State St

5. Waste hauling, storage, and transfer facilities.
    a. Department of Public Works at 11100 W Walnut Rd. No onsite transfer facilities. Waste is hauled directly to landfills.

6. Areas that attract congregations of nuisance urban birds and wildlife.
    a. The City is not aware of any congregations of nuisance wildlife. We will continue to monitor water bodies for this.

7. Known or suspected properties with inadequate food or organic waste handling or storage.
    a. No known or suspected properties within the city.

8. Composting sites or facilities.
    a. 3rd party collection of residential compost is completed within the City. The composting is done off site. The City holds a permit for some on site composing at the Department of Public Works.

9. Known or suspected areas with improper human sanitation use.
    a. No known or suspected areas.

10. Any other source that the permittee identifies as discharging to the MS4.
    a. No other sources were identified.

BACTERIA SOURCE IDENTIFICATION MAP

CITY OF WAUWATOSA
MARCH, 2023

SCALE
0 2400 4800
FEET

FILE NAME : S:\DEPARTMENT FOLDERS\ENGINEERING\WDNR ANNUAL REPORTS\2022\BACTERIA SOURCE MAP\WAUWATOSA BACTERIA SOURCE MAP.DWG PLOT DATE : 3/9/2023 3:00 PM PLOT BY : WTREU

CITY OF WAUWATOSA
ENGINEERING SERVICES
7725 WEST NORTH AVENUE
WAUWATOSA, WI 53213
Telephone: (414) 479-8927
www.wauwatosa.net

William T. Wehrley, P.E.
City Engineer
wwehrley@wauwatosa.net

CITY OF WAUWATOSA
ILLICIT DISCHARGE DETECTION & ELIMINATION
ENFORCEMENT RESPONSE PLAN

Introduction:

As a part of the City's WPDES Permit (WI-S065404-2) all major outfalls are inspected on an annual basis for the presence of illicit discharges. This information is recorded and maintained within the City's ArcGIS online platform.

Authorized Enforcement Agency:

The City's municipal code Chapter 24-13.040.O, "Illicit Connections and Discharges" outlines the compliance procedures when responding to an illicit discharge. Whenever the City of Wauwatosa finds a person has failed to meet a requirement of this section, the City of Wauwatosa may order compliance by written notice of violation to the responsible person.

Procedures for Responding to Known or Suspected Illicit Discharges:

If dry weather field screening efforts reveal discharges with color, odor, turbidity, oil sheen, or surface scum, a field analysis shall be conducted that includes testing of the discharge for detergents and ammonia. This testing shall be completed to determine whether the flow is contaminated with sanitary or wastewater, and whether the source is tap water or a natural source of water.

The ~~City~~ Operations Superintendent will notify the Wisconsin Department of Natural Resources (DNR), in accordance with NR 706 of the Wisconsin Administrative Code, immediately upon discovering a spill or hazardous substance which may result in discharge of pollutants to waters of the state. The DNR can be notified at **1-800-943-0003**. The City will cooperate with the DNR in efforts to investigate and prevent such discharges from polluting waters of the state.

City of Wauwatosa Response Procedures:

1.) If a call is received at the City with a report of an illicit discharge concern, the call should be forwarded to the Operations Superintendent for review within 48 hours. Public works will direct the appropriate City staff to field investigate the concern. Initial field investigation will consist of visual inspection of the surface waters and storm sewer manholes for evidence of discharge in the highlighted area. Results of this field investigation will be reported to the Engineering Division for further action.

2.) Drainage Area Investigations:

If the Operations Superintendent determines that there is reasonable evidence of an illicit discharge, the next step will be a drainage area investigation. This process can be performed by a number of City staff, such as the Director of Public Works, the

Senior Civil Engineer, or the City Engineer. This investigation consists of a parcel by parcel analysis of potential generating sites within the drainage area of a problem outfall. Techniques used to investigate the drainage area include:

a. Land Use Investigations
b. Building Permit review
c. As-built construction plan review
d. Property ownership research through County Tax Inquiry

The results of the drainage area investigation will be reported to the Senior Civil Engineer and they will determine whether further Storm Sewer Network Investigations are necessary or if the Operations Superintendent ~~City~~ can proceed directly to On-Site Discharge Investigations.

3.) Storm Drain Network Investigations

When a drainage area is identified, storm drain investigations can narrow the source of a discharge problem to a single segment of a storm sewer. The investigation should start at the outfall and work progressively up the trunk sewer. If necessary, the Operations Superintendent will coordinate with the City Engineer and any outside contractors, to perform the following tasks:

a. Smoke Testing
b. Video Taping
c. Dye Testing
d. Water Sampling

The results of the Storm Drain Network Investigation will be reported to the Senior Civil Engineer and it will be determined whether On-Site Discharge Investigations will be necessary.

4.) On-Site Discharge Investigations

Once the illicit discharge has been isolated to a specific section of storm sewer, an on-site investigation can be performed. On-site investigations are typically performed by observation, water sampling and/or dye testing the plumbing systems of households and buildings. The Operations Superintendents employees shall perform the on-site investigations and report finding to them for enforcement action.

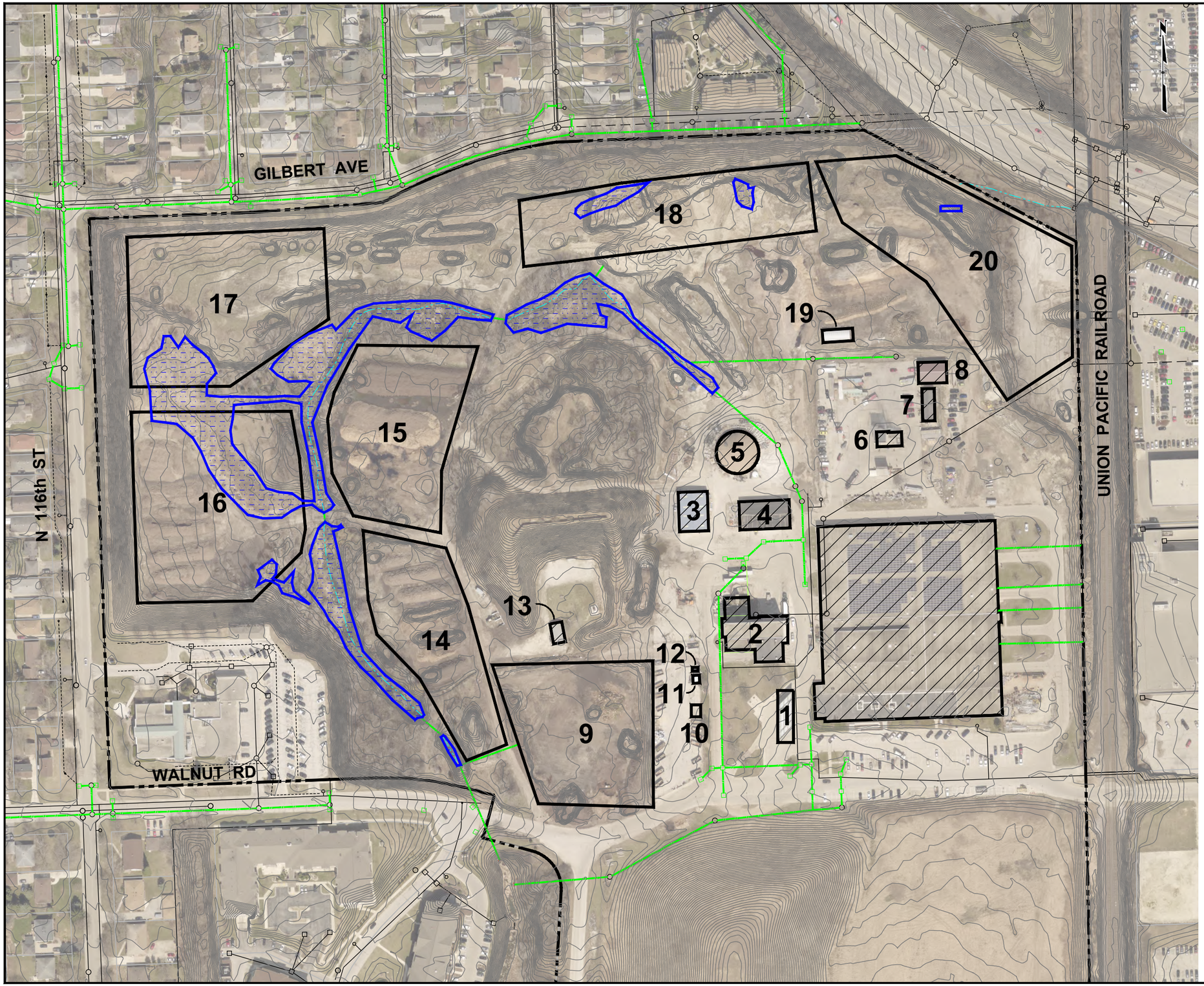
5.) Correction and Enforcement

Whenever the City finds a person has violated a prohibition or failed to meet a requirement of the Illicit Connections & Discharges Ordinance as determined through the procedures above, the City may order compliance by written notice of violation to the responsible person. Such notice may require without limitation the actions listed in the Illicit Connections & Discharges Ordinance, Section 24.13.040(O). Language from this section is included below for reference.

O. Illicit Connections and Discharges.

1. The following definitions shall be applicable in this subsection:
   a. "Illicit connection" means any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been allowed, permitted, or approved by a government agency, prior to the adoption of this chapter.
   b. "Person" means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.
   c. "Storm drain system" means publicly-owned facilities by which stormwater is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and humanmade or altered drainage channels, reservoirs, and other drainage structures.
2. Illicit Connections and Discharges Prohibited.
   a. No person shall discharge, spill or dump substances or materials which are not entirely composed stormwater into receiving bodies of water or onto driveways, sidewalks, parking lots or other areas that drain into the storm drainage system.
   b. The construction, use, maintenance or continued existence of illicit connections to the storm drainage system is prohibited. This prohibition expressly includes, without limitation, illicit connections made prior to the adoption of this chapter, regardless of whether the connections was permissible under law or practice applicable or prevailing at the time of connection.
   c. The following activities are exempt from the provisions of this section unless found to have an adverse impact on the stormwater:
      (1) Discharges authorized by a permit issued by the Wisconsin Department of Natural Resources.
      (2) Discharges resulting from firefighting activities.
      (3) Discharges from uncontaminated ground water, potable water source, roof drains, foundation drain and sump pump, air conditioning condensation, springs, lawn watering, individual residential car washing, water main and hydrant flushing and swimming pools if the water has been dechlorinated.

   d. Whenever the City of Wauwatosa finds a person has violated a prohibition or failed to meet a requirement of this section, the City of Wauwatosa may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
      (1) The elimination of illicit connections or discharges;
      (2) That violating discharges, practices, or operations shall cease and desist;
      (3) The abatement or remediation of stormwater pollution or contaminated hazards and the restoration of any affected property;
      (4) In the event the person fails to eliminate the illicit connects or discharge, fails to cease and desist in discharge, practices or operations in violation of this section or fails to abate or remediate the stormwater pollution or contamination hazards, that person may be subject to a forfeiture of not less than fifty dollars nor more than five hundred dollars for each offense, together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.



CITY OF WAUWATOSA
PUBLIC WORKS YARD

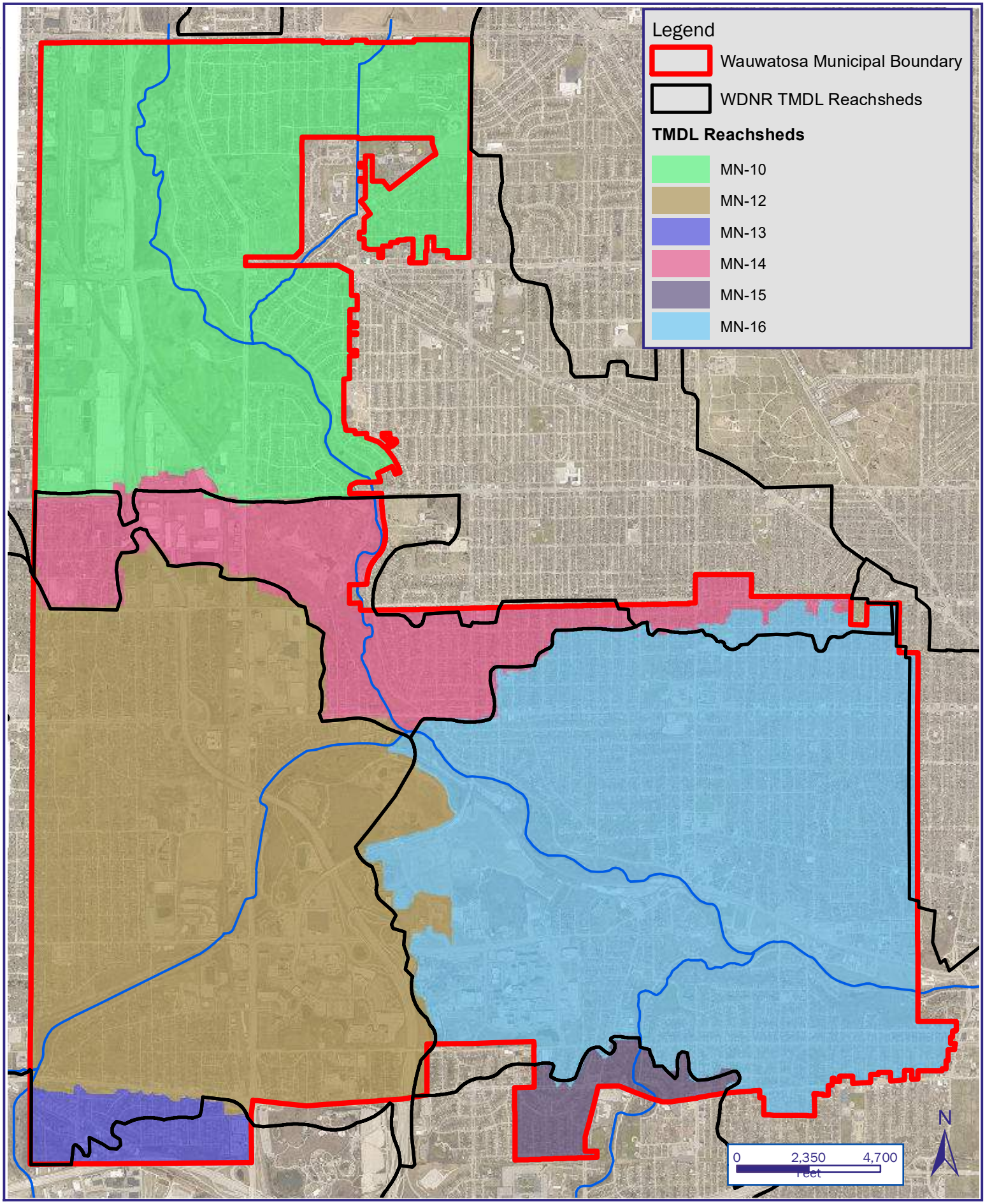
SWPP SITE INVESTIGATIONS

KEY

1. FUEL PUMPS
2. TRANSFER STATION
3. POLICE BUILDING
4. COVERED GRAVEL
5. SALT DOME
6. FD TOWER
7. FD BUILDING
8. FD BUILDING
9. RESIDENTIAL AREA FOR YARD WASTE
10. RESIDENTIAL DROP OFF SHED
11. ELECTRICAL SUB-STATION
12. STORAGE SHED
13. PD SHOOTING RANGE BUILDING
14. COMPOST SITE #1
15. COMPOST SITE #2
16. SNOW DUMP
17. FORESTRY DUMP
18. ROAD SPOILS DUMP
19. FORESTRY TOP SOIL BUILDING
20. DOT PROJECT SITE

SCALE: 1" = 200', SEPT. 2022

S:\Engineering\WDNR ANNUAL REPORTS\2022\SWPP\DPW Site.dwg



4/14/2022

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 1-1 TMDL Reachsheds.mxd

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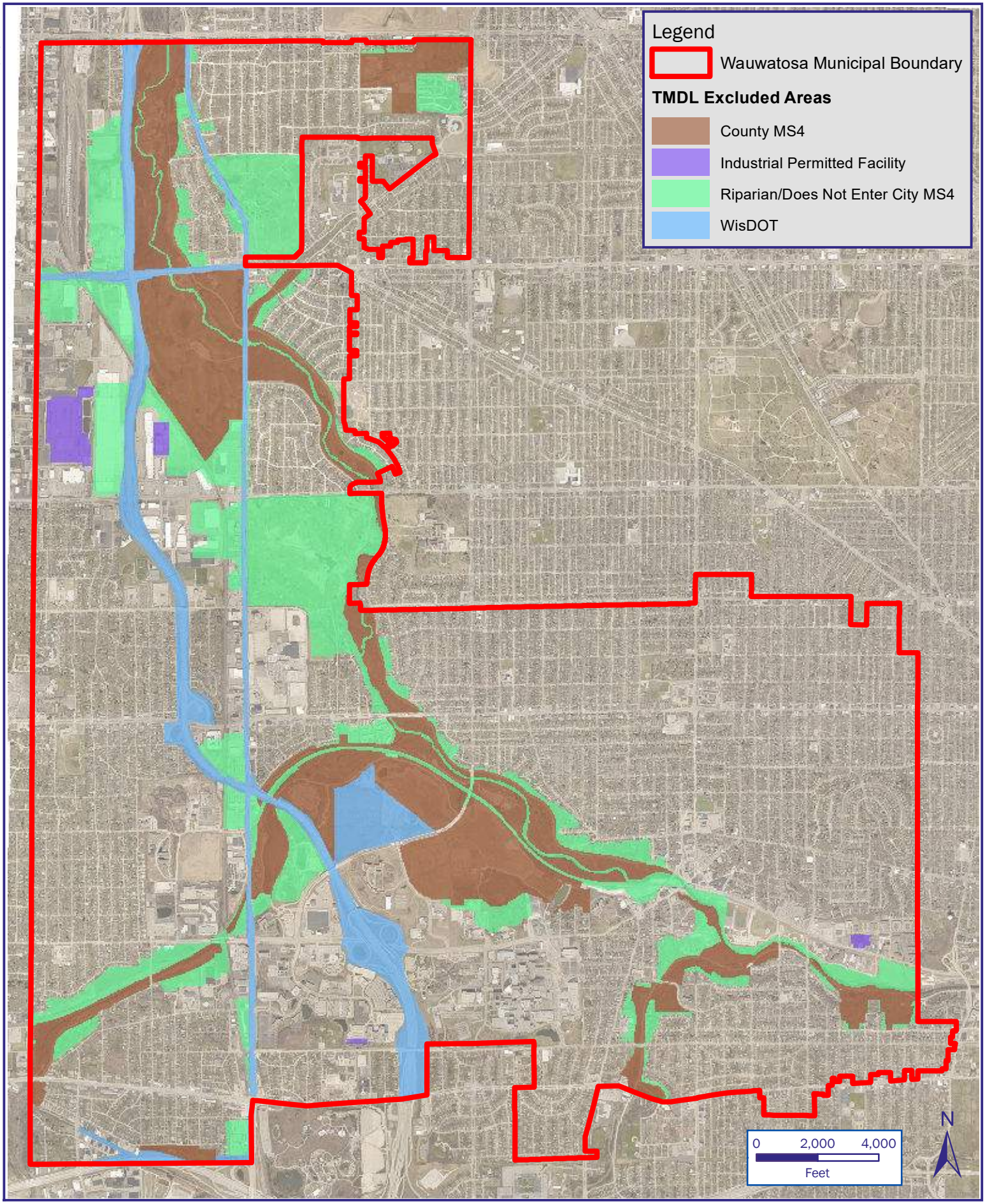
Brown AND Caldwell

Figure 1-1
TMDL Reachsheds
City of Wauwatosa
Stormwater Quality Management Plan



9/29/2022

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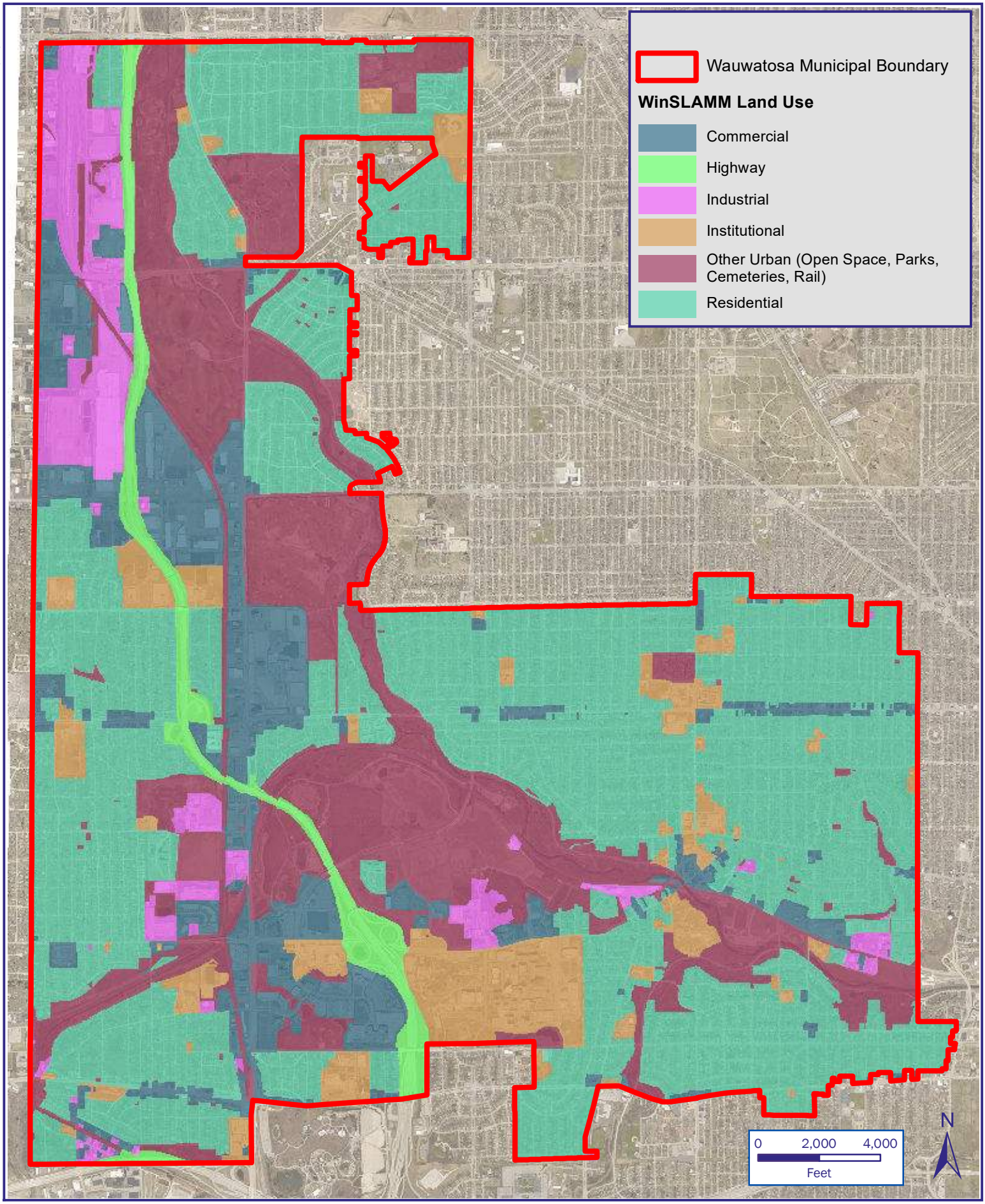
Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 2-1
TMDL Excluded Areas
City of Wauwatosa
Stormwater Quality Management Plan



9/29/2022

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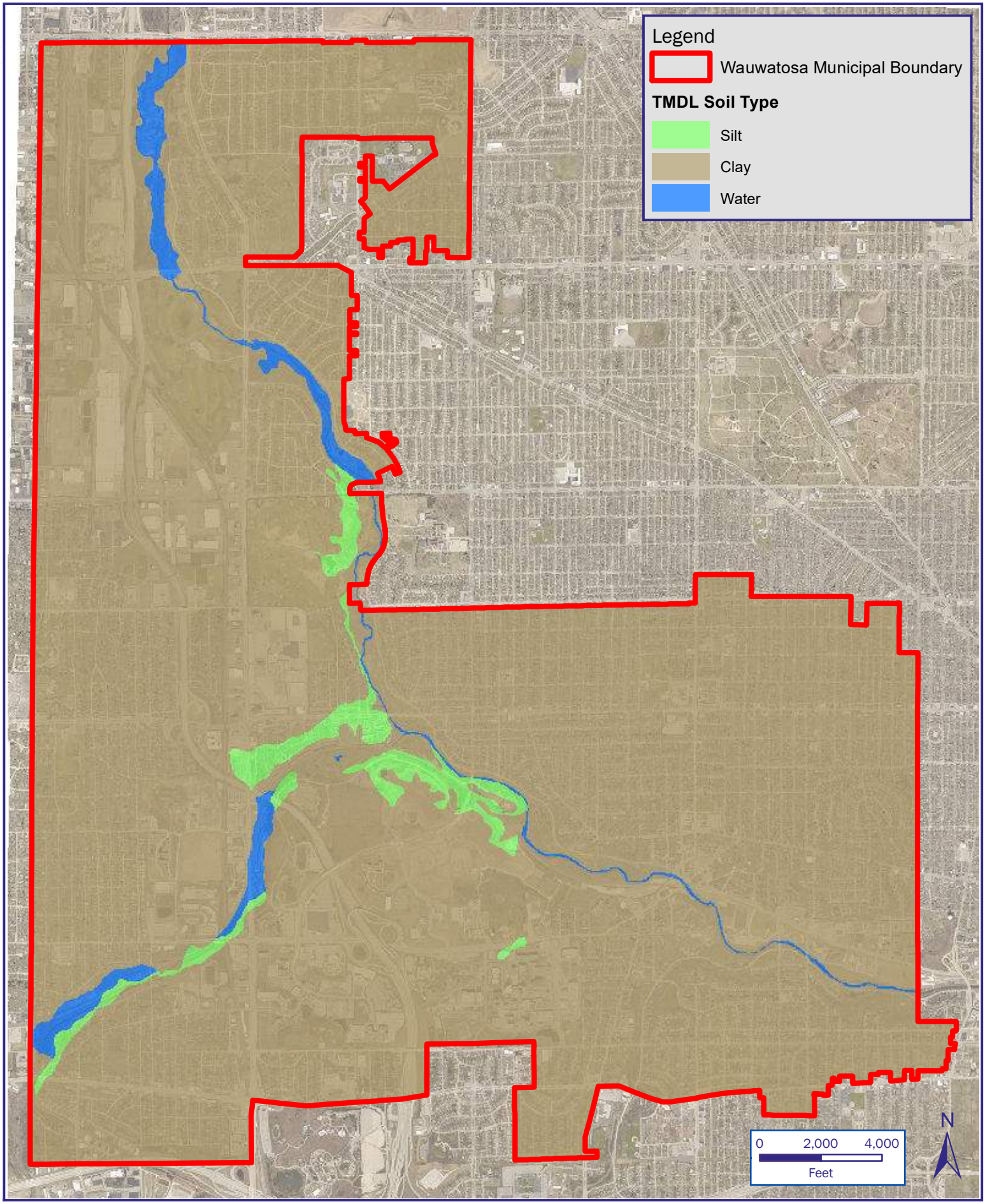
Brown AND Caldwell

Figure 2-2
WinSLAMM Land Use Areas
City of Wauwatosa
Stormwater Quality Management Plan



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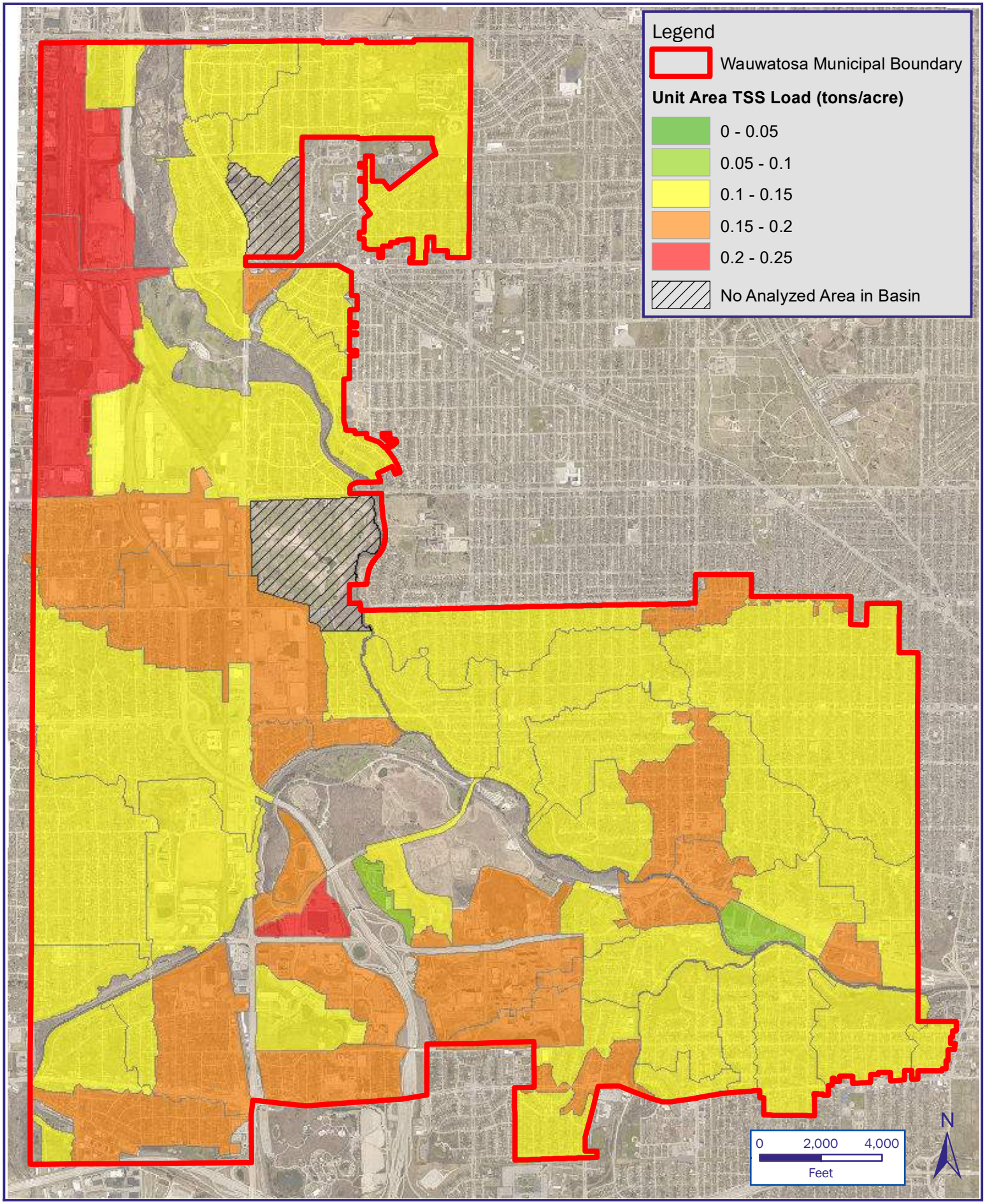
Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 2-3
WinSLAMM Soil Designation
City of Wauwatosa
Stormwater Quality Management Plan



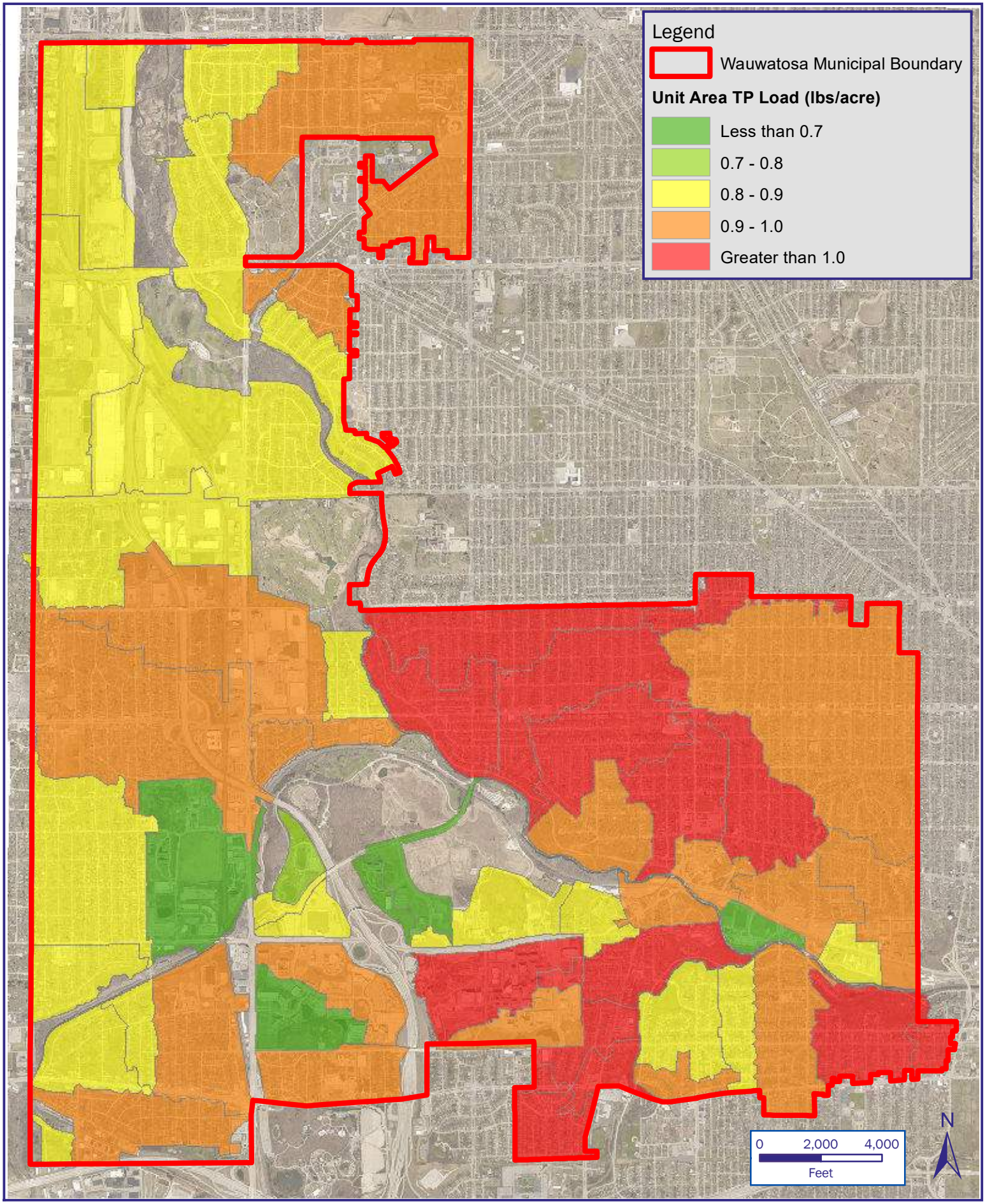
10/10/2022

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 3-1 No Controls TSS Loads by City Basin.mxd

Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 3-1
No Controls TSS Load Per Acre
City of Wauwatosa
Stormwater Quality Management Plan



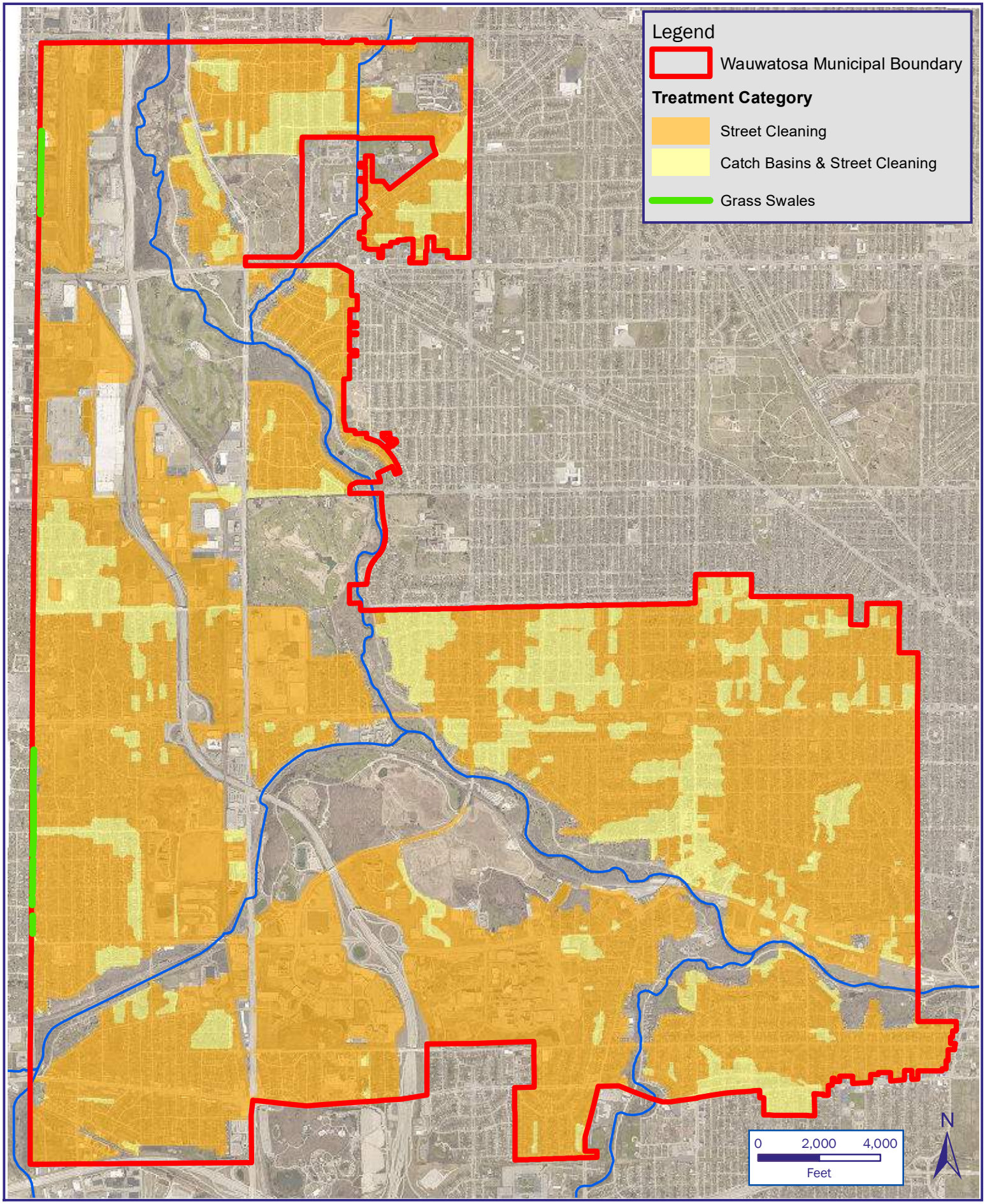
10/10/2022

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 3-2 No Controls TP Loads by City Basin.mxd

Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 3-2
No Controls TP Load Per Acre
City of Wauwatosa
Stormwater Quality Management Plan



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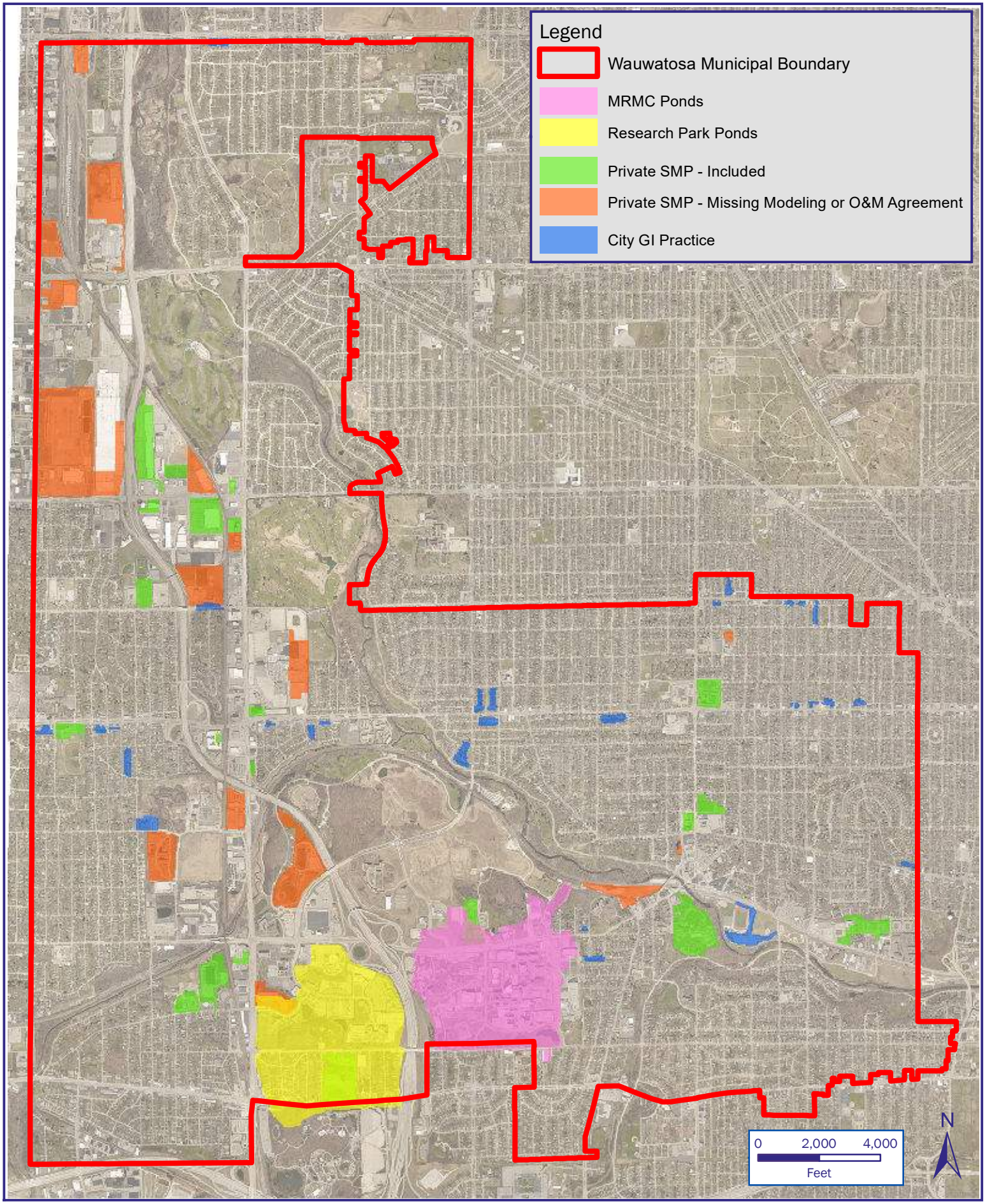
Brown AND Caldwell

Figure 3-3
Street Cleaning, Catch Basin and Grassed Swale Treatment Areas
City of Wauwatosa
Stormwater Quality Management Plan



3/9/2023

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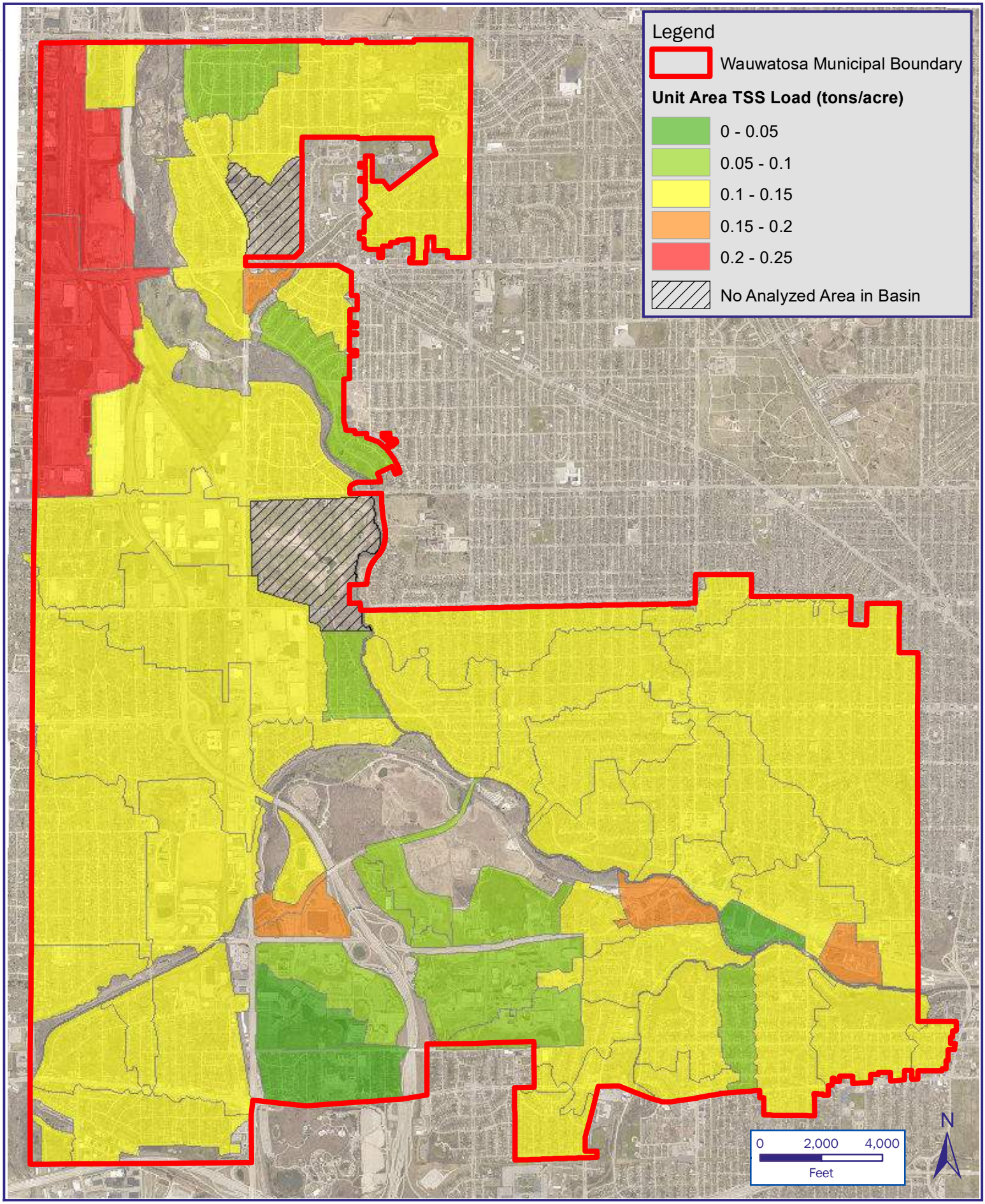
Author: Fill out Map Document Properties

Figure 3-4
City Green Infrastructure and Private Practice Treatment Areas
City of Wauwatosa
Stormwater Quality Management Plan



3/9/2023

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 3-5 Existing Conditions TSS Loads by City Basin.mxd

Author: Fill out Map Document Properties

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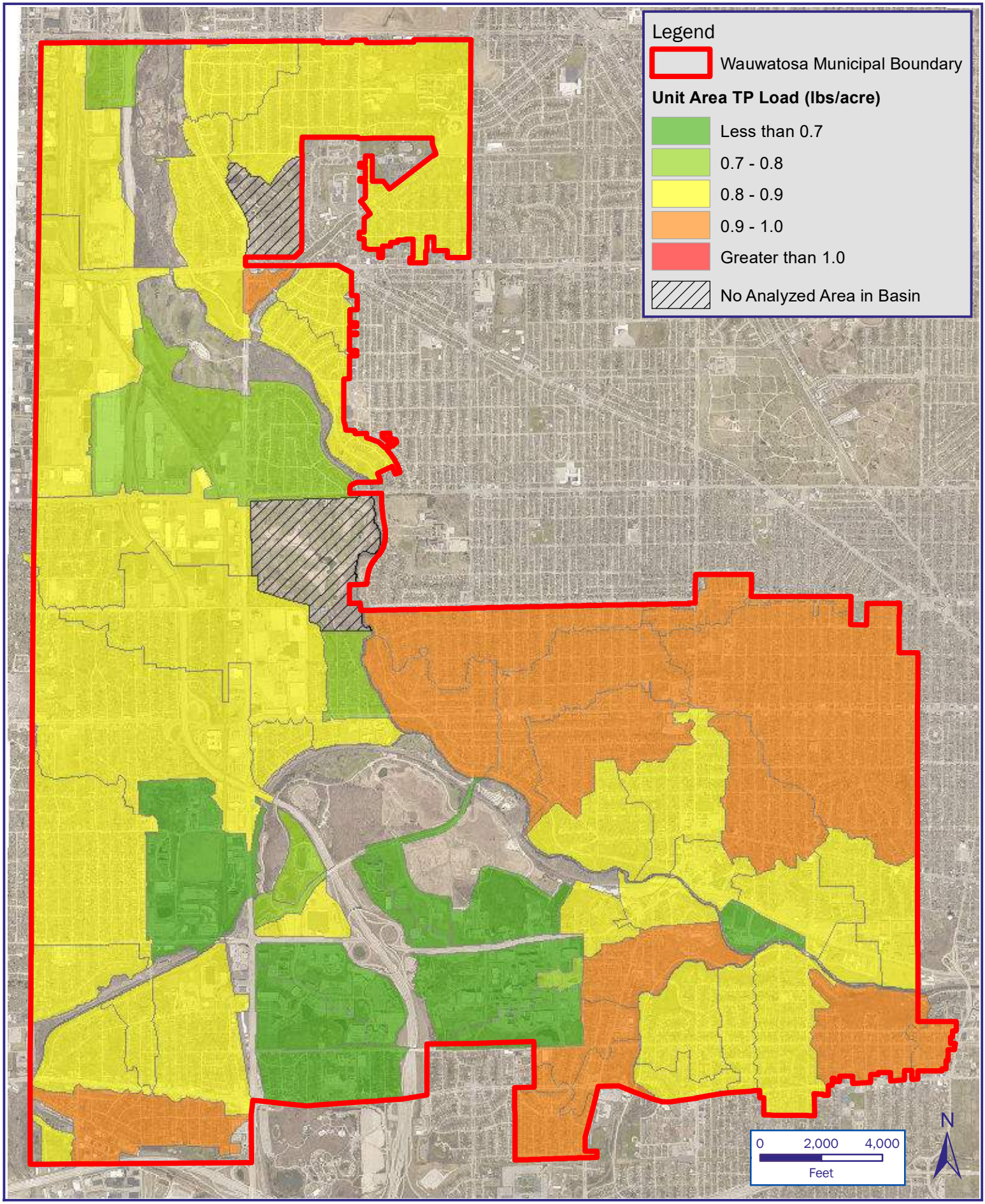
Figure 3-5
With Controls TSS Load Per Acre
City of Wauwatosa
Stormwater Quality Management Plan



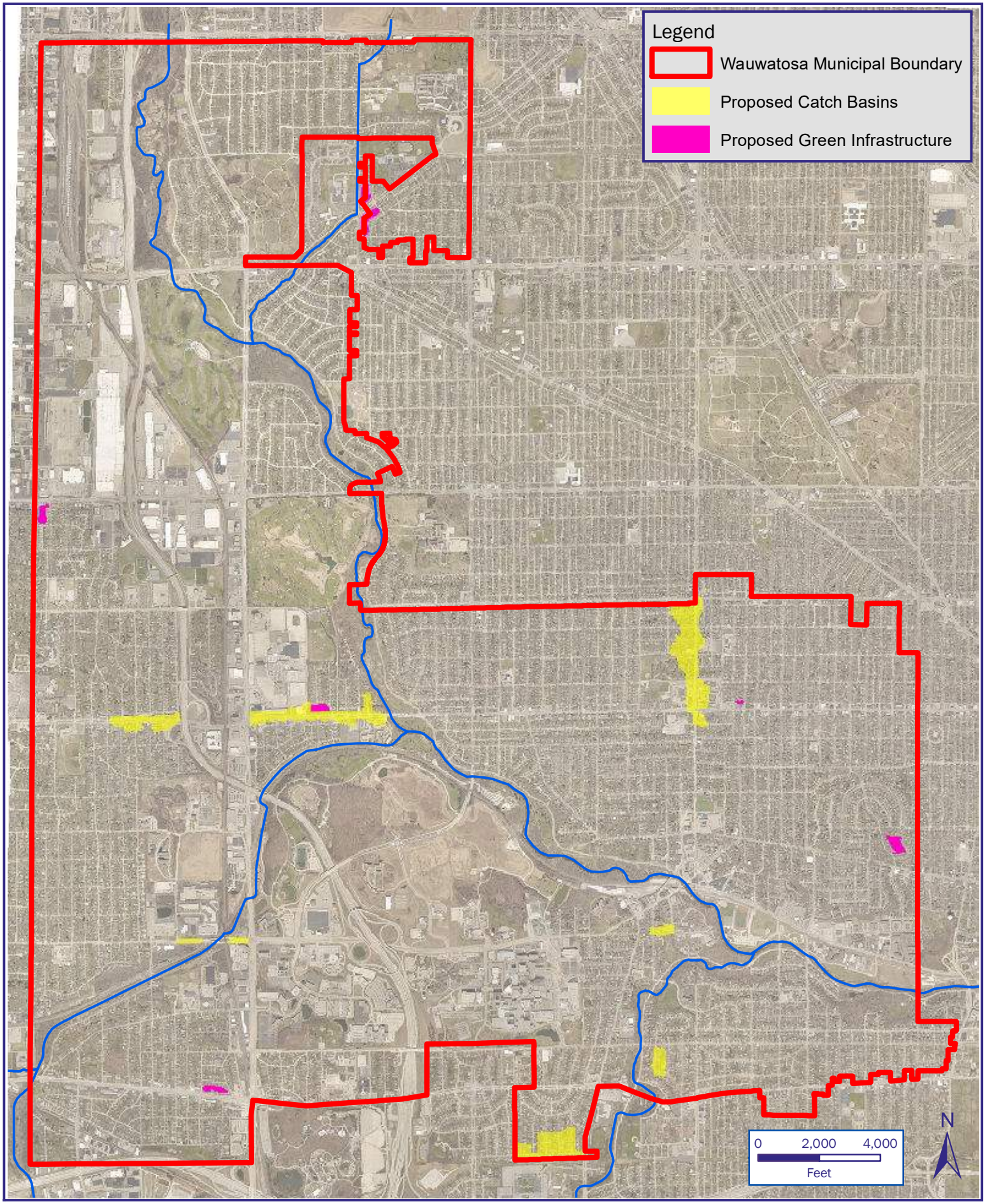
3/9/2023

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 3-6 Existing Conditions TP Loads by City Basin.mxd

Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 3-6
With Controls TP Load Per Acre
City of Wauwatosa
Stormwater Quality Management Plan



3/9/2023

Path: V:\157925 - Wauwatosa Stormwater Mgmt Plan\GIS\MXDs\Figures\Figure 4-1 Proposed Catch Basins and City Green Infrastructure.mxd

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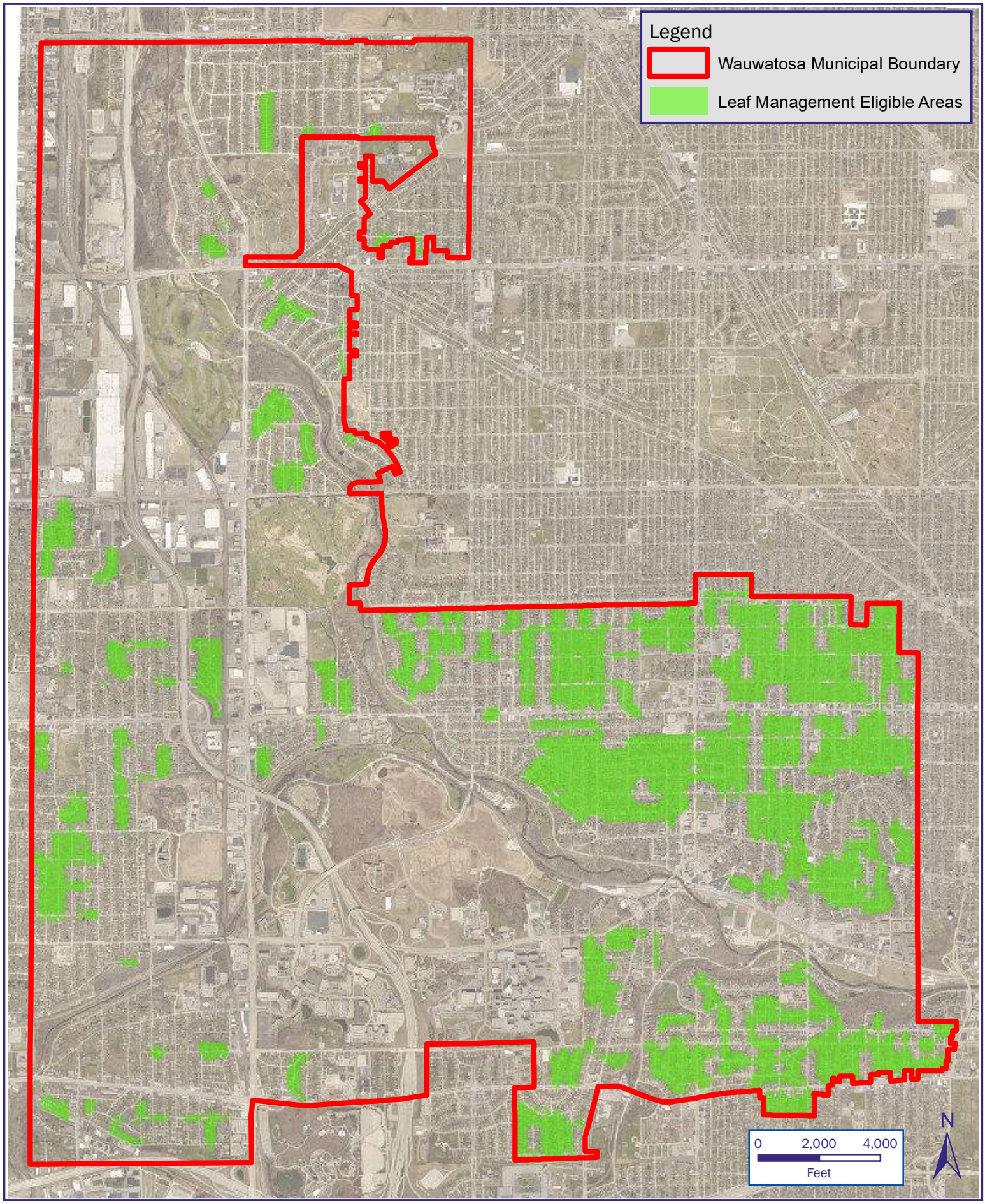
Figure 4-1
2022-26 Catch Basin and City GI Project Treatment Areas
City of Wauwatosa
Stormwater Quality Management Plan



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Author: Fill out Map Document Properties

Brown AND Caldwell

Figure 4-2
Areas Eligible for Leaf Management TP Credit
City of Wauwatosa
Stormwater Quality Management Plan

Legend

- City of Wauwatosa Municipal Boundary
- City of Wauwatosa MS4 Conveyance
- Other MS4/Private Conveyance
- Wauwatosa Municipal Garage
- Industrial Facility with WPDES Permit

Wauwatosa MS4 Outfall

- Major
- Minor
- Impaired Receiving Waters
- City-Owned Storm Water Control Drainage Area
- Privately-Owned Storm Water Control Drainage Area
- City of Wauwatosa MS4 Drainage Basin
- Street Centerlines
- Publicly Owned Parks and Open Lands
- City of Wauwatosa TMDL Planning Area
- Industrial Facility with WPDES Permit
- Riparian/Other Excluded Area
- State MS4 Area
- County MS4 Area from Milwaukee County

0 1,200 2,400 Feet

N

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Brown AND Caldwell

Figure 5-1
MS4 Map
City of Wauwatosa
Stormwater Quality Management Plan

WAUWATOSA IN GOD WE TRUST

ponds) associated with Federal Aviation Administration requirements due to the proximity of Timmerman field.

Potential future regional practices that are being considered by the City include the new 116th Street Park, which is currently in the planning stages by the City and has secured a consultant to assist with evaluating options for the drainage areas tributary to the new park project, and an area near the western limits of Chippewa Park on the City's south side. Options for stormwater treatment associated with the 116th Street Park will be further evaluated by a consultant in 2023, but the Chippewa Park area was evaluated as part of this project. The project in consideration would divert the storm sewer on W. Mt Vernon Avenue to the south along 116th Street along with the W. Park Hill Avenue storm sewer, discharging at Chippewa Park, creating a 39-acre drainage area. WinSLAMM modeling suggests that a wet detention pond with a surface area of 0.5 acres situated in the western limits of Chippewa Park would remove 63.3 percent TSS (2.46 tons) and 46.4 percent TP (18.5 lbs). The pond footprint includes a 20-foot buffer from roadways.

Challenges with implementing this alternative include the presence of potential wetlands in the identified wet pond area based on a review of the WDNR Surface Water Data Viewer. An endangered resources preliminary assessment was conducted and indicated that an Endangered Resources (ER) Review by the WDNR would be necessary to comply with Wisconsin's Endangered Species Law and the Federal Endangered Species Act. A wetland delineation would be required as well as discussion with the WDNR on permitting the project and the potential increased cost to purchase wetland mitigation credits if wetlands are impacted. The cost of this potential project was not estimated at this time due to uncertainty related to features that would impact the cost effectiveness such as wetland mitigation measures.

While the City has not given up on the potential to implement regional practices, it is recognized that they will be more challenging and/or expensive. The City will look to potential projects to partner with other Menomonee River Watershed permittees as well as developers if opportunities arise and can also consider alternatives to traditional wet pond surface detention, such as underground wet detention facilities. Additionally, the WDNR is in the process of developing a guidance document (anticipated to be completed in 2023) to using sand filters based on research conducted by the University of Minnesota. These practices would typically contain a sediment forebay or chamber to trap heavier particles, a dry detention basin to temporarily store water and allow it to run through a sand filter area that can have additives incorporated into the sand such as iron filings or slag to improve total phosphorus removal. The facility would be designed to drain down within approximately a 48-hour period so would not contain long-standing ponded water and are anticipated to have high TSS and TP removals when constructed according to the guidance document.

4.5 Leaf Management

The City of Wauwatosa operates a bulk leaf collection program as a service to the public. The WDNR has recognized that there may be beneficial changes in municipal leaf management programs that can reduce phosphorus discharges to waters of the state. Based on research conducted by the WDNR and USGS, the WDNR developed guidance ("Municipal Phosphorus Reduction Credit for Leaf Management Programs", effective February 17, 2022) to provide criteria for numeric credit for leaf collection programs outside of the WinSLAMM modeling tool. The existing City of Wauwatosa bulk leaf management program was evaluated and compared against the WDNR guidance as summarized in the following sections.

4.5.1 Existing City Bulk Leaf Management Program

The existing City leaf collection program currently starts in early October and goes until late November. Specific information on the City's annual program (schedule and interactive map) are posted on the City's website. Leaves are collected throughout the City up to four times during the season (three passes and one final collection after the final posted rake out deadline). Currently, like many communities, the City asks residents to rake their leaves in the fall into the gutter of the roadway for pickup by the City.

The City utilizes several pieces of equipment in this operation including:

- 7 – Mt Trackless Units
- 5 – Rear Loader Refuse Trucks
- 1 – Freightliner FL80 Buncher Truck
- 1 – John Deer Loader
- 1 – Leaf Vacuum Trailer
- 1 – Freightliner, Elgin Megawind (street cleaner)
- 1 – Elgin Pelican NP (street cleaner)

City DPW Operations Staff push the leaves together, bunches them to reduce the leaf volume and then take them to the public works yard for composting. The streets are swept following the bulk pickup operation. On average the City collected about 4,000 tons of leaves annually however the total tonnage is quite variable, ranging from 3,205 tons in 2021 to 5,436 tons in 2019 (information based on "2011-2021 Fall Leaf Collection Comparison" document provided by the City).

The City currently receives no specific stormwater quality credit or reduction for their leaf collection program. The WDNR has developed a guidance document that allows a municipality to take credit for a bulk leaf collection program that meets the criteria in residential land use areas as outlined in their 2022 guidance. Future research may allow credit in additional land use areas or applications but are not considered in the current guidance document. The City can only take credit for increased numeric stormwater pollution reduction as allowed under WDNR guidance when the conditions outlined in the guidance are met by the City. Non-numeric credit can be taken for other land uses that are not currently outlined for numeric credit and can be a component of the City's implementation plan and evidence of working towards TMDL pollutant reduction goals. The current and potential WDNR leaf collection program modification options and the City's evaluation of potential changes are discussed in the following sections.

4.5.2 Eligible Areas for Numeric Credit from Leaf Management

Under WDNR guidance, there are conditions that define the area that is eligible for leaf management credit. To be eligible, the area must have a residential land use, curb and gutter streets, a high level of tree canopy, and not be treated by a downstream structural SMP (such as a pond).

To determine whether there is a high level of tree canopy, there are two options provided by the WDNR as follows:

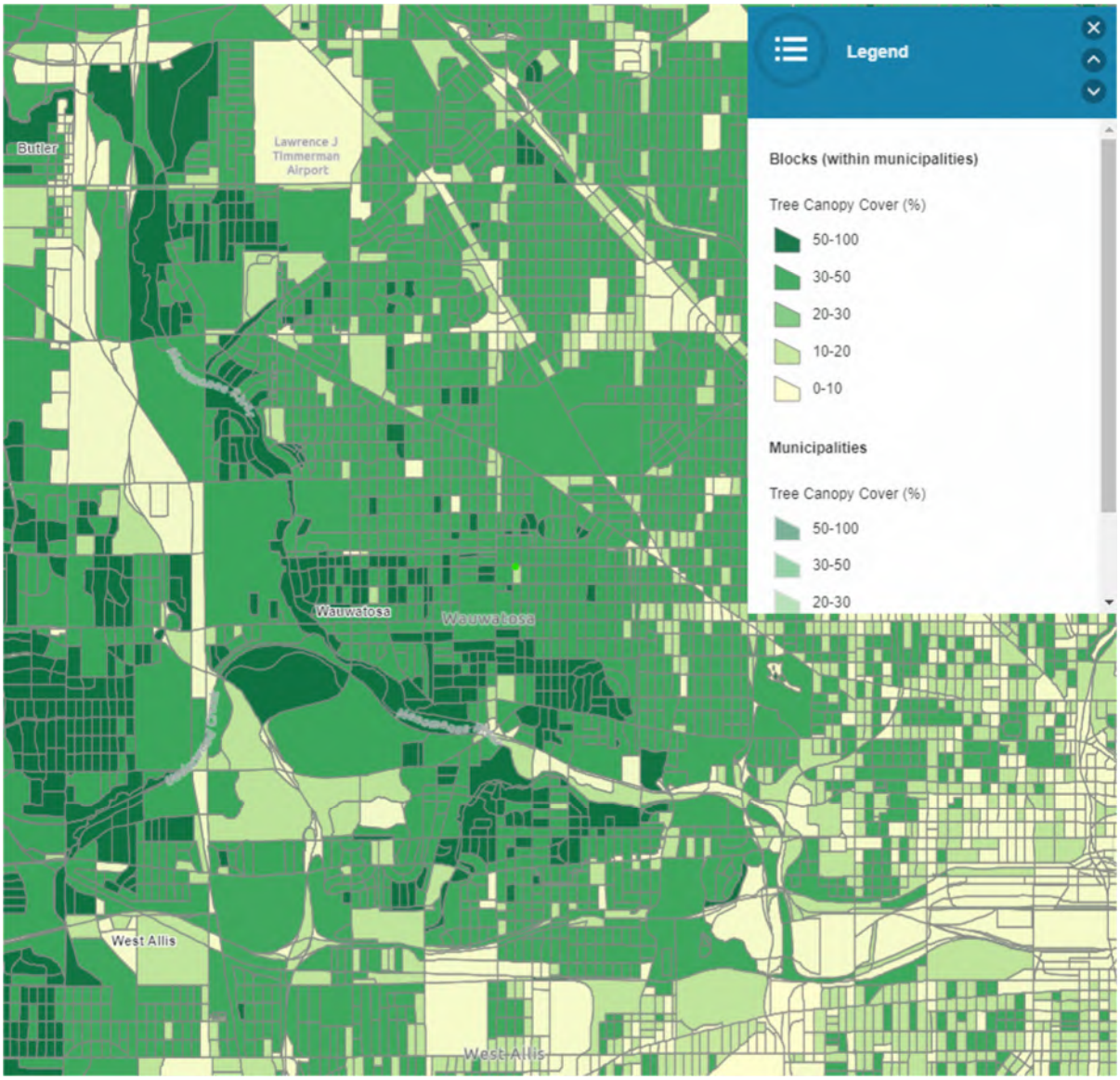
- Option A: An average of one or more medium to large canopy trees located between the sidewalk and the curb for every 80 linear feet of curb.
- Option B: An average of 40 percent or greater leaf canopy over the pavement, or 45 percent tree canopy or greater over the right-of-way determined using leaf-on aerial photography.

The analysis was conducted using Option A, utilizing the City of Wauwatosa GIS tree dataset. This dataset represents trees within City property which includes the right-of-way and parks. The dataset includes various attributes regarding trees, including the tree diameter. It was assumed that a

diameter at breast height of 12-inches or greater equated to a medium to large trees. In conjunction with the tree data, the City's street centerline GIS file was utilized. The street centerline file was clipped to areas meeting the land use and street section criteria. The number of medium or large trees along each segment (intersection to intersection) was then counted. The length of the street segment was then multiplied by two to account for curb and gutter on both sides of the street. This length was divided by the count of trees along each segment to calculate the average medium or large tree spacing. If the tree spacing was less than 80-feet the segment was identified as eligible. Figure 4-2 shows the areas within the City that meet these criteria.

The resulting areas were compared to other available sources to see if the identified areas were reasonable. The following items were considered:

1. Google street view was utilized to spot check residential areas throughout the City. It was generally observed that the images in street view correlated with the tree dataset.
2. The WDNR community tree canopy mapping application (https://dnr.wisconsin.gov/topic/urbanforests/ufia/plan-treecanopy) was reviewed. This mapping data showed a city-wide tree canopy of 37.9 percent. The data could be further reviewed at a detailed level. At the "Block" level (see tree canopy image), most blocks in the City are in the upper two tree canopy designations (between 30 and 100 percent tree coverage).



City of Wauwatosa Tree Canopy

Image Courtesy of WDNR Tree Canopy Mapping Application

4.5.3 Existing Leaf Management Program and WDNR Guidance Criteria

In addition to the criteria regarding areas that are eligible for leaf management credit, the WDNR guidance document established leaf management programmatic criteria. The following section describes the requirements of the WDNR guidance document and how the City's program compares:

1. WDNR Criteria #1: The municipality has an ordinance prohibiting residents from placement of leaves in the street.
   a. The City's Municipal Code currently does not include a provision that prohibit the placement of leaves in the street.
   b. To comply with this criteria, the City would need to make a code change.
2. WDNR Criteria #2: The municipality has a policy that leaves are placed by residents on the street terrace and collected at a specified frequency and timing. As part of the collection, the leaves are collected by loading them into an enclosed vehicle without being left in the street overnight.

   a. Per the "Fall Leaf Collection" guidance on the City's website, residents are directed to place leaves in the gutter of the street for City pickup.
   b. To comply with this criteria, the City would need to change their leaf collection operation and guidance. Further complicating this potential practice is the narrow terraces in many areas of the City.
3. WDNR Criteria #3: If on street parking densities are greater than "light", there is an ordinance or enforceable policy to restrict parking during leaf collection and street cleaning.
   a. Within residential areas of the City, the parking densities are light.
4. WDNR Criteria #4: The leaf collection program starts no later than October 7 each year. The guidance document should be consulted for further information regarding when street cleaning and bulk collection activities associated with street cleaning begins.
   a. The "Fall Leaf Collection" guidance on the City's website identifies a start date of October 10, 2022, for the leaf collection program.
   b. This date is close to the October 7 date indicated by WDNR and no major program change is anticipated; however, based on the WDNR guidance, the leaf accumulation conditions in the street will need to be monitored, and collection and street cleaning activities may need to begin earlier.
5. WDNR Criteria #5: The leaf collection program occurs three to four times throughout October and November.
   a. Per the "Fall Leaf Collection" guidance on the City's website, the City generally makes three passes through the City with one final collection occurring after the final rake out deadline (November 20, 2022).
   b. It is believed that the City complies with this criteria as the adequate number of collection cycles is completed. It is possible that the City's program may need to be extended to the end of November to meet the requirements. The WDNR should be consulted to verify how long collection activities should occur.

With meeting the criteria above, there are two levels of TP reduction that can be achieved by leaf management activities under the current guidance document. These levels are described below:

1. Numeric Credit Option #1: Within 24-hours of leaf collection the streets within the collection area are cleaned with either a mechanical or high-efficiency street cleaner. A 17 percent TP reduction credit is achieved under this option.
   a. Currently the City is not believed to be complying with this requirement due to resource limitations.
2. Numeric Credit Option #2: Weekly street cleaning occurs with high efficiency street cleaners in addition to the loose-leaf collection. A 25 percent TP reduction credit is achieved under this option.
   a. Currently, the City does not feel it has the resources to implement a weekly street cleaning program and therefore would not be eligible for Credit Option #2 at this time.

4.5.4 Leaf Management Program Potential Modification Considerations and Costs

Based on Section 4.5.3, the City's current leaf management program would not qualify for any additional leaf management credit. However, the City has explored the possibility of modifying its program and conducted a small leaf collection pilot study in 2019. For this project, an analysis of the potential phosphorus reduction and cost associated with modifying the City's program to meet the WDNR Credit Option #1 was calculated. The "with controls" database was utilized to calculate the TP

pollutant loads from eligible areas and the associated numeric credit was applied for the identified eligible land use areas as summarized in Table 4-10.

Table 4-10. Potential Leaf Management Total Phosphorus Load Reduction Results

TMDL Reachshed	Total Potential Eligible Area (ac)	No Controls TP Load (lbs/year)	With Controls TP Load (lbs/year)	With Controls TP Reduction % (compared to no-controls total load)	Potential TP Reduction Increase Due to Leaf Collection (lbs/year)	Potential TP Reduction % Increase Due to Leaf Collection
MN-10	74.5	66.4	61.0	8.1%	5.9	8.9%
MN-12	143.3	130.9	122.4	6.5%	13.7	10.5%
MN-13	22.6	21.9	20.6	5.5%	2.5	11.5%
MN-14	141.2	135.4	120.0	11.4%	7.6	5.6%
MN-15	52.6	51.2	48.4	5.6%	5.9	11.4%
MN-16	901.3	900.1	832.0	7.6%	84.9	9.4%
Totals	**1,335.5**	**1,306.0**	**1,204.5**		**120.5**	

The impact of a potential leaf management program to reduce TP on a Citywide basis is shown in Table 4-11. There is no credit for TSS in this program, so TSS loads and reductions would remain unchanged.

Table 4-11. Proposed Leaf Management Pollutant Loading Results

TMDL Reachshed	Analyzed Area (ac)	With Controls TP Load Reduction (lbs/year)	Potential TP Load Reduction (lbs/year)	Potential TP Load Reduction %
MN-10	1,046	72	78	8.3%
MN-12	1,775	217	230	14.8%
MN-13	152	8	11	7.5%
MN-14	509	47	56	11.6%
MN-15	133	8	14	10.5%
MN-16	2,307	301	390	17.4%
Totals	**5,921**	**654**	**780**	**14.2%**

As noted previously, the City conducted a pilot test in 2019 to compare the effort and cost of modifying the City's leaf collection activities to be more aligned with the WDNR's criteria in order to be eligible to obtain the additional phosphorus reductions. The pilot consisted of modifying the leaf collection process for a portion of the leaf collection operation that year. Table 4-9 summarizes a comparison of the two programs based on this relatively small pilot project.

Table 4-12. Program Cost Comparison		
Comparative Element	Current Leaf Collection Method	Modified Leaf Collection Program
Leaves Collected (tons)	5,572	149
Labor Cost	127,842	8,272
Labor Cost Per Ton	23	56
Equipment Cost	57,859	8,411
Equipment Cost Per Ton	10	56
Total Cost	185,701	16,683
Total Cost Per Ton	33	112

Based on the pilot, the results suggest that a modified leaf collection program sufficient to meet the WDNR's criteria could be almost 3.4 times the cost of the current program. However, it could be suggested that the staff's limited experience with this approach of leaf management resulted in inefficiencies and over time the program could increase in efficiency. It was also initially assumed that the City has the staff resources and equipment to be able to implement a program change.

In 2021, labor and equipment costs over the 49 days of the leaf management operation, were $131,301 and $93,444.90 respectively for a total of $224,745.90. Total program costs have generally risen and estimating an inflation of 5 percent from 2021 costs, the current program costs are estimated at approximately $235,000. If one were to assume that a modified leaf management program cost increase was only 3 times that of the current program, then using the estimated 2022 program cost, the incremental increase in cost for the program would be approximately $470,000.

Applying this cost to the potential phosphorus reduction credit of 120.5 lbs/year under Alternative 1 would result in a cost of over $3,900/lb of TP. To implement Alternative 2 would require adding in the annual street cleaning Alternative 2 costs of approximately $380,000/yr (for incremental staff needs only), resulting in a much higher annual program increase but a slightly better cost effectiveness of $3,800/lb of TP. However, based on feedback from the City on the feasibility of implementing a weekly street cleaning program, this alternative is also not considered feasible at this time.

Additionally, in discussion with the City as part of the alternatives evaluation workshop, there was a consensus that additional costs and challenges exist to implementing the program. The City has not conducted an equipment needs evaluation but anticipates additional equipment would be needed to collect leaves based on the pilot program and also to meet the street cleaning requirements. Additionally, as discussed as part of the street cleaning alternatives evaluation, additional staff time would be needed for the program but in a very focused timeframe during the year. It is possible, and reasonable, that staff could be shared between the leaf management and street cleaning program efforts. Finally, the City is concerned with the physical constraint that exist to implement a program of this nature. Terraces on the majority of City streets are very narrow and with the density of trees in the City, are likely unable to contain the leaf matter. This could result in overflow into the street (a violation of program credit requirements) or into sidewalks (a safety concern).

The City does have some areas of wider terraces on the west side and will continue to look into the potential to create a focused implementation of a leaf management program change in the future, especially if these areas are in reachsheds with higher TP reduction goals. In the meantime, the City will make an effort to limit the amount of time that leaves are in the street and in addition to

evaluating terrace sizes in areas of the City, will also utilize their extensive GIS tree inventory to see if, based on tree type, other modifications to their leaf management program may be possible to make incremental progress to improve stormwater quality.

4.6 Impacts of Redevelopment

As part of this Citywide water quality plan, it was desired to understand the impacts that future redevelopment of existing areas will have on water quality pollutant loadings. As the City redevelops, there will be an incremental positive impact on the City's overall level of pollutant reduction. A few Wisconsin municipalities are changing their ordinances to require higher levels of pollution control/reduction to place more of the burden on new development and redevelopment sites, such as in the Fox Valley area, but as of the time of this report, no municipalities in the Menomonee River Permit group have done so. These changes can provide increased incremental improvements in water quality but are also impactful to developers and can be challenging to convince development stakeholders (internal and external) to accept such a change.

4.6.1 Redevelopment Impact Potential

The impact of future redevelopment areas on the City's ability to make progress towards meeting the various TMDL reachshed goals was evaluated under two scenarios. The first scenario considered the impact of redevelopment under the City's current ordinance and the second scenario considered the impact of modifying the City's ordinance to require development to achieve the various TMDL reduction targets.

The City's current post-construction stormwater management ordinance requires sites of one acre and larger to reduce TSS by 40 percent for parking lot and road/driveway source areas. This would have an approximate impact of 27 percent reduction in TP following a common rule of thumb used by the WDNR.

Because different land uses and developments have differing source areas and sizes, for the first scenario analysis it was assumed that the resulting impact on a parcel wide basis of the ordinance was a TSS reduction of 30 percent and a TP reduction of 20 percent. From data provided by the City for permit requests, the average number of redevelopment acres per year from 2014 to 2021 was approximately 30 acres. Estimating the impact of redevelopment over 10-, 20-, and 30-years would mean that a corresponding total land area of 300, 600, and 900 acres would redevelop.

To understand the impact this would have on a reachshed basis, the amount of land available to be redeveloped first needs to be estimated. This was accomplished by identifying parcels of one acre or larger in the City that had land uses corresponding to commercial, industrial, institutional, parks, open space, and multifamily residential. The current no-controls for each parcel was then checked based on the evaluations conducted in Section 3 of this report. Those areas that are already achieving a parcel based TSS reduction of 40 percent or greater were removed from consideration as those parcels would need to provide TSS reduction equal to or greater than the current parcel wide performance. Parcels with less than a 40 percent TSS reduction were aggregated on a reachshed basis and the no controls and with controls loads were summed. Potential reachshed loads were then calculated for the available areas by assuming a 30 percent reduction for TSS and 20 percent reduction for TP were achieved. Based on the nearly 2,000 acres of available redevelopment acreage, the percentage of available land area estimated to redevelop over the 10-, 20-, and 30-year time periods is approximately 15, 30, and 45 percent. These reductions were then compared to the reachshed existing reductions with controls, to calculate the potential incremental TSS and TP reductions. The redevelopment acreage was then prorated equally among all reachsheds for 10-, 20-, and 30-year increments to estimate the TSS and TP reductions for each of the