



MS4 Annual Report

Board of Public Works

Phil Gaebler - City of Madison Engineering Department

3/12/2024

Report Overview

- ▶ Minimal Control Measures
- ▶ Fiscal Analysis
- ▶ Progress

Minimal Control Measures - Each Required a Written Program

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Pollutant Control
5. Post-Construction Storm Water Management
6. Pollution Prevention - SWPPPS Required
7. Storm Sewer System Map
8. TMDL Progress and Plan

1. Public Education and Outreach

- ▶ Waterways Newsletter
 - ▶ Lower Badger Mill Creek
 - ▶ Rain garden
 - ▶ Watershed Studies
- ▶ Ripple-Effects
 - ▶ <https://www.ripple-effects.com/>
 - ▶ Storm Drain Murals - 3 completed in 2024
 - ▶ Capital High school, Crestwood elementary school, Westmoreland
 - ▶ Plant Dane
 - ▶ Native Plant Workshops
- ▶ Everyday Engineering Podcast
 - ▶ 7 Episodes in 2024 - 3 water quality focused
- ▶ Conference Presentations
 - ▶ Municipal response to Climate change-EWRI
 - ▶ AWPA Bike tour in Madison





2. Public Involvement

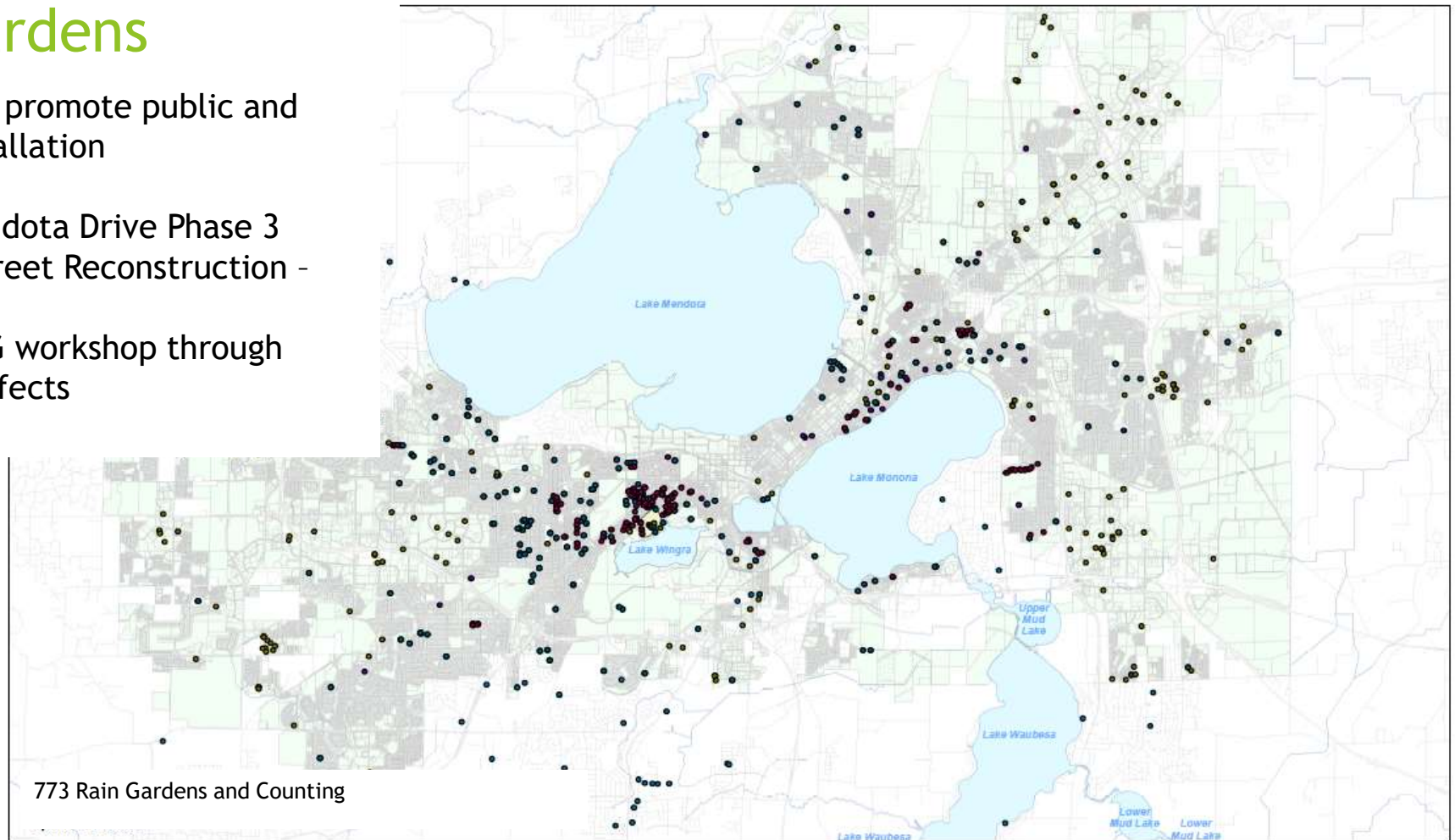
- ▶ SWU fee Adjustment policy
 - ▶ \$5 for terrace rain garden residents
- ▶ Public Information meetings
 - ▶ Watershed studies
 - ▶ Implementation
 - ▶ Reconstruction Projects
- ▶ Friends Groups Grants
 - ▶ Wingra Chloride Monitoring
- ▶ Volunteer Native Plant Growers
- ▶ Rain Garden Workshops
- ▶ UW Capstone



2. Public Engagement Rain Gardens

Continue to promote public and private installation

- Lake Mendota Drive Phase 3
- Meyer Street Reconstruction - 2025
- 1 on 1 RG workshop through Ripple Effects



3. IDDE

- ▶ Illicit Discharge Detection and Elimination
 - ▶ Tests all 590 outfalls on a four year rotation
 - ▶ 111 tested in 2023:
 - ▶ No issues found
 - ▶ Starting new inspection cycle (111/590) : 19% done
 - ▶ Water that should go to Madison Metro Sewerage District that goes to Storm Sewer
 - ▶ Cross Connections
 - ▶ Dumping
 - ▶ Concrete
 - ▶ Carpet Cleaners
 - ▶ Painters
 - ▶ Gave in person trainings in 2024 to field staff



Outfall in dry weather

3. IDDE

- ▶ Illicit Discharge Detection and Elimination
 - ▶ 70 complaints in 2024
 - ▶ Addressed by Public Health
 - ▶ 30 citations and 39 notices of violation
 - ▶ Storm dumping can be reported here:

<https://www.cityofmadison.com/reportaproblem/dischargedumping.cfm>



Concrete washout in curb

4. Construction Site Pollution Control Erosion Control

- ▶ Issued 62 Permits over 1ac for 2024 (63 in 2024)
 - ▶ 620 inspections
 - ▶ 44 Citation
- ▶ Green Tier Erosion Control Tour



Acacia Ridge Erosion
Control

5. Post Construction Stormwater Management

Review and maintenance of Private Stormwater Treatment

- ▶ 16 new facilities added
- ▶ 418 inspection reports filed (up from 78 last year)
 - ▶ County wide effort to improve reporting happening in 2025
- ▶ Vegetation Management Plan approved 2024



6. Pollution Prevention Ponds and Greenways

- ▶ 478 Ponds in our system
- ▶ 288 Ponds owned and managed by the City
 - ▶ Inspected for sediment depth, bank erosion and clogging
 - ▶ Goal to inspect all ponds over 8 yrs old in permit cycle (5 years).
 - ▶ **55** ponds in 2024 (20%)
 - ▶ 28 Benthic survey
 - ▶ 27 consultant survey
- ▶ 190 Ponds Managed by others in our system
- ▶ 1560 catchbasins
 - ▶ 447 tons removed 2024
 - ▶ down from 1111 tons material removed 2023
- ▶ 244 Greenways in system
 - ▶ **25** greenways in 2024



Nautilus Sand Filter Rejuvenation

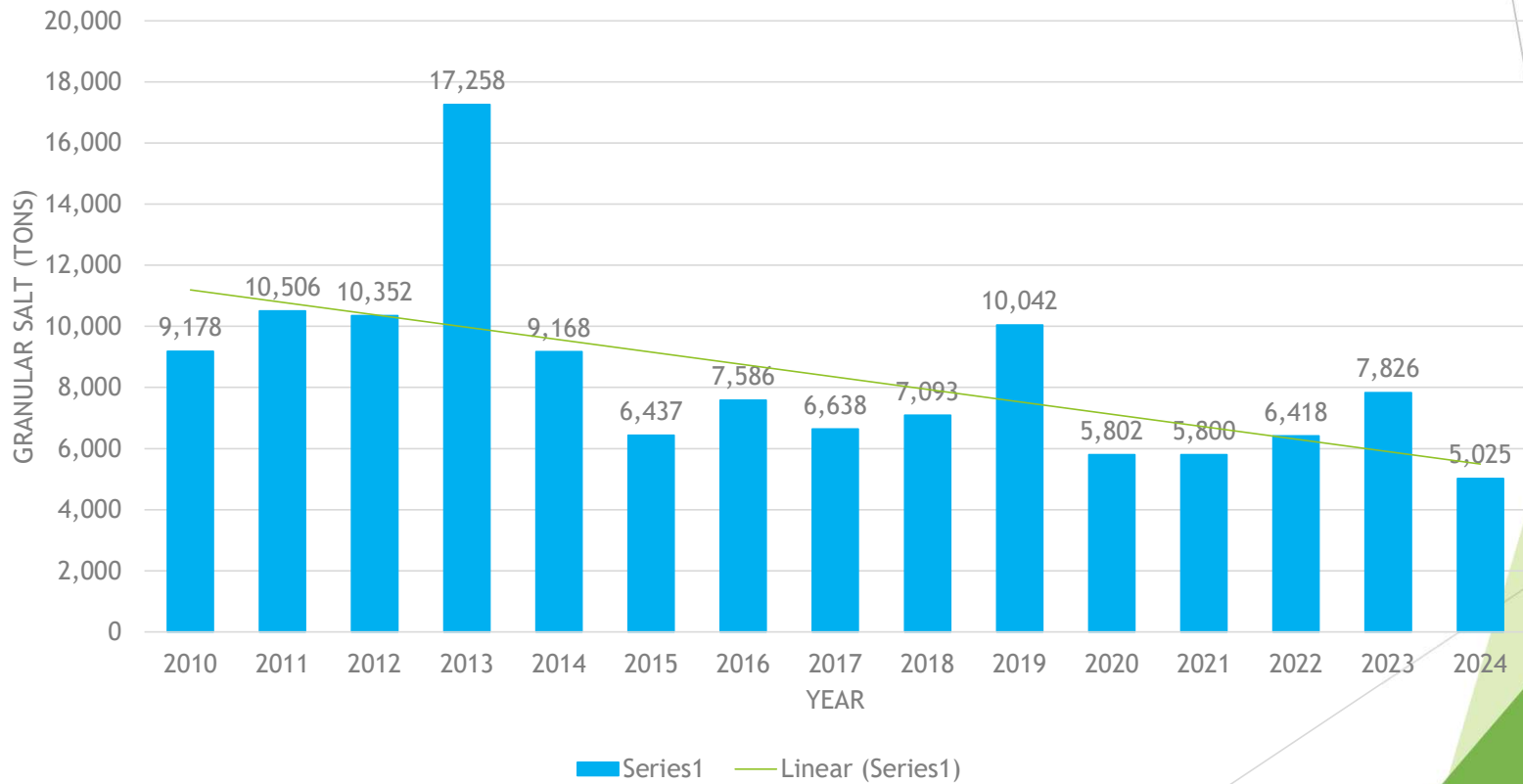
6. Pollution Prevention Winter Maintenance

- ▶ Certification program to get public and private applicators educated on ways to effectively reduce de-icing salt.
 - ▶ Co-hosted 3 trainings with Saltwise
- ▶ CARPC led Starkweather Creek Chloride Management Plan- Realtime monitoring of SWC
- ▶ Ordinance update to require residual salt be swept up from sidewalks: 10.28(1) of the Madison General Ordinances: 5 citations in 2024.
 - ▶ Only municipality in state to have this ordinance.

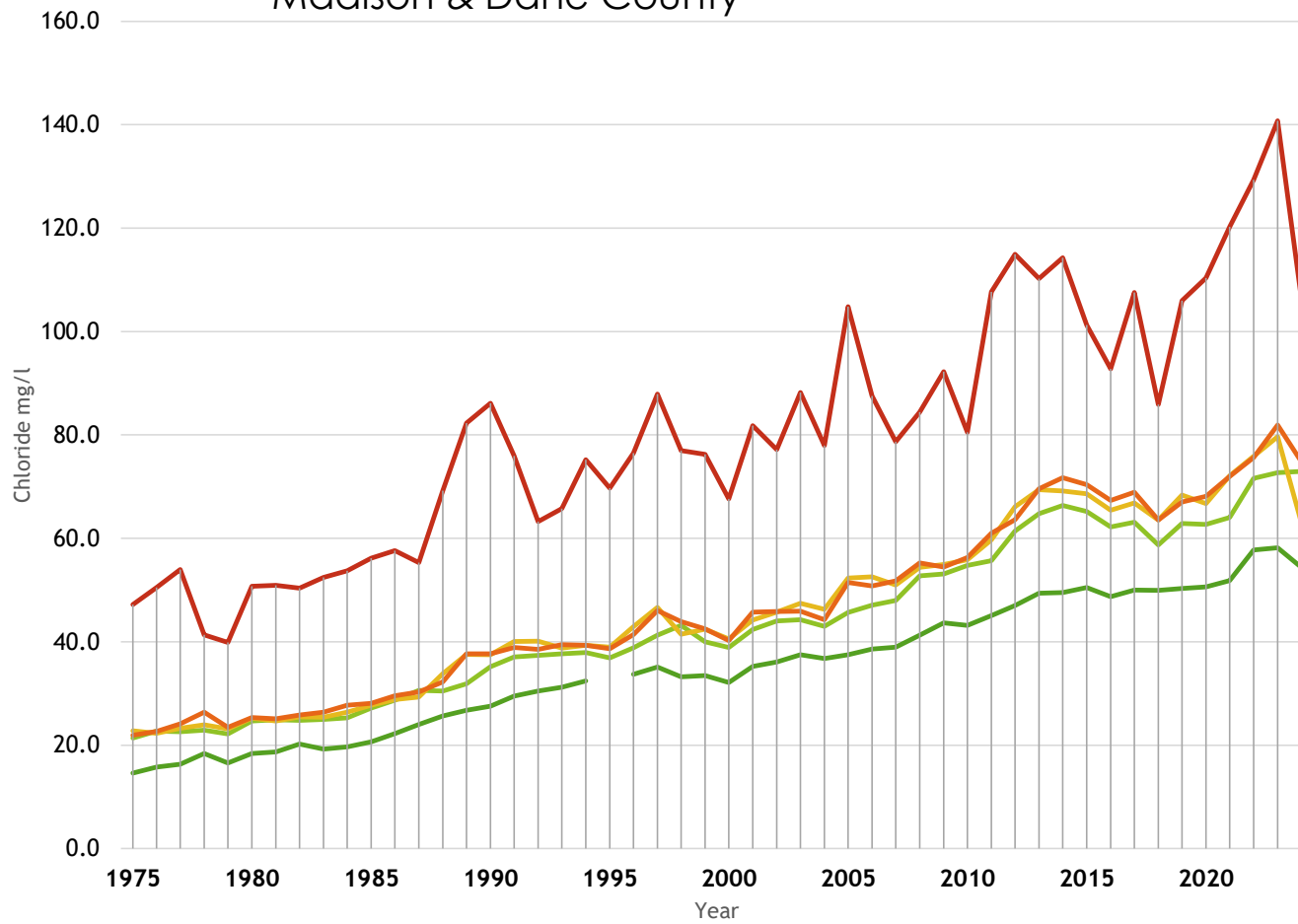


<https://www.cityofmadison.com/news/city-updates-salt-use-ordinance-for-public-sidewalks-lots>

6. Pollution Prevention Winter Maintenance City Salt Use 2010-2024



Average yearly chloride concentration in Dane County lakes in mg/L, measured by Public Health Madison & Dane County



- Kegonsa
- Mendota
- Monona
- Waubesa
- Wingra



6. SWPPPS- Stormwater Pollution Prevention Plans



Sycamore Street Facility
Madison, WI



- 9 Sites with SWPPPs
- South point improvements complete
- Olin improvements happening in 2025

1	2	A		B		C		D	E	F	G	H	I		J	K	L
		ACTIVITY/MATERIAL	LOCATION MAP ID		Indoors	Outdoors	Sediment	Nutrients	Metals	Hydrocarbons	Toxins	other	Likelihood of Contact	Risk of release	CURRENT PRACTICE		
3	4																
5		Vehicle repair and maintenance	B-2				○	-	●	●	●			Leaks and spills - Fuel benzene, oil, hydraulic oil, transmission fluids, brake fluids, ethylene glycol, lead acid	○	○	<ul style="list-style-type: none"> ● Vehicles repaired and maintained indoors ● Floor drains in these facilities are connected to the sanitary sewer system
6		Vehicle storage and parking	B-1C B-4C		M-1		●	-	●	●	○			Leaks and spills - Fuel benzene, oil, hydraulic oil, transmission fluids, brake fluids, ethylene glycol, lead acid	●	○	<ul style="list-style-type: none"> ● Outside vehicle storage drains to stormsewer
7		Vehicle washing	B-1D				●	●	○	○	●				○	○	<ul style="list-style-type: none"> ● Vehicle washing is performed indoors ● Washbays are connected to the sanitary sewer system
8		Metals recycling			M-11		-	-	●	●	-				●	○	<ul style="list-style-type: none"> ● Material stored in uncovered dumpsters outside
9		Refuse			M-13		-	-	●	●	-				○	○	<ul style="list-style-type: none"> ● Garbage collected in standard covered municipal garbage can ● Single walled outside storage tank without secondary containment ● Vehicles fueled outside
															○	○	<ul style="list-style-type: none"> ● Stored indoors in bunker
															○	○	<ul style="list-style-type: none"> ● Stored indoors in bunker
															○	○	<ul style="list-style-type: none"> ● Stored indoors in bunker
															○	○	<ul style="list-style-type: none"> ● Stored indoors in 55 gallon drums
															●	○	<ul style="list-style-type: none"> ● Stored outdoors uncovered
															●	●	<ul style="list-style-type: none"> ● Conducted on concrete slab outdoors
															○	○	<ul style="list-style-type: none"> ● Stored in building
															○	○	<ul style="list-style-type: none"> ● Stored in tanks outside



6. Street Sweeping

- ▶ Clean Streets Clean Lakes Initiative
 - ▶ Weekly Sweeping with Parking Restrictions
 - ▶ 4,882 Tons Collected from 51,103 lane miles.
 - ▶ 2024 Costs: \$2.53 million



6. Leaf and Yard Waste Collection 2024

- ▶ Madison Collected:
 - ▶ 13,846 tons of leaves
 - ▶ 1,686 tons of yard waste in 2023
- ▶ Cost :
 - ▶ \$3.01 Millions (up from \$2.63 million in 2023) for Leaves
 - ▶ \$991,008 (down from \$932,000)for Yard Waste
- ▶ Ordinance prohibiting leaves in Street
 - ▶ 10.18 - COLLECTION OF REFUSE AND RECYCLING OF WASTE.
- ▶ Promotion of leaf removal from street
 - ▶ Text alerts
 - ▶ Working on Leaving whole leaves in yards for 2025. Improved pollinator habitat.



Stormwater Utility

Stormwater Utility

Capital Improvement Plan (CIP) Overview

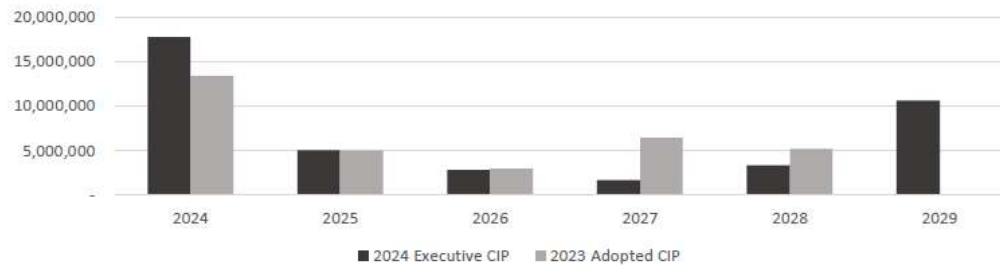
Budget Phase: Executive

Summary Table

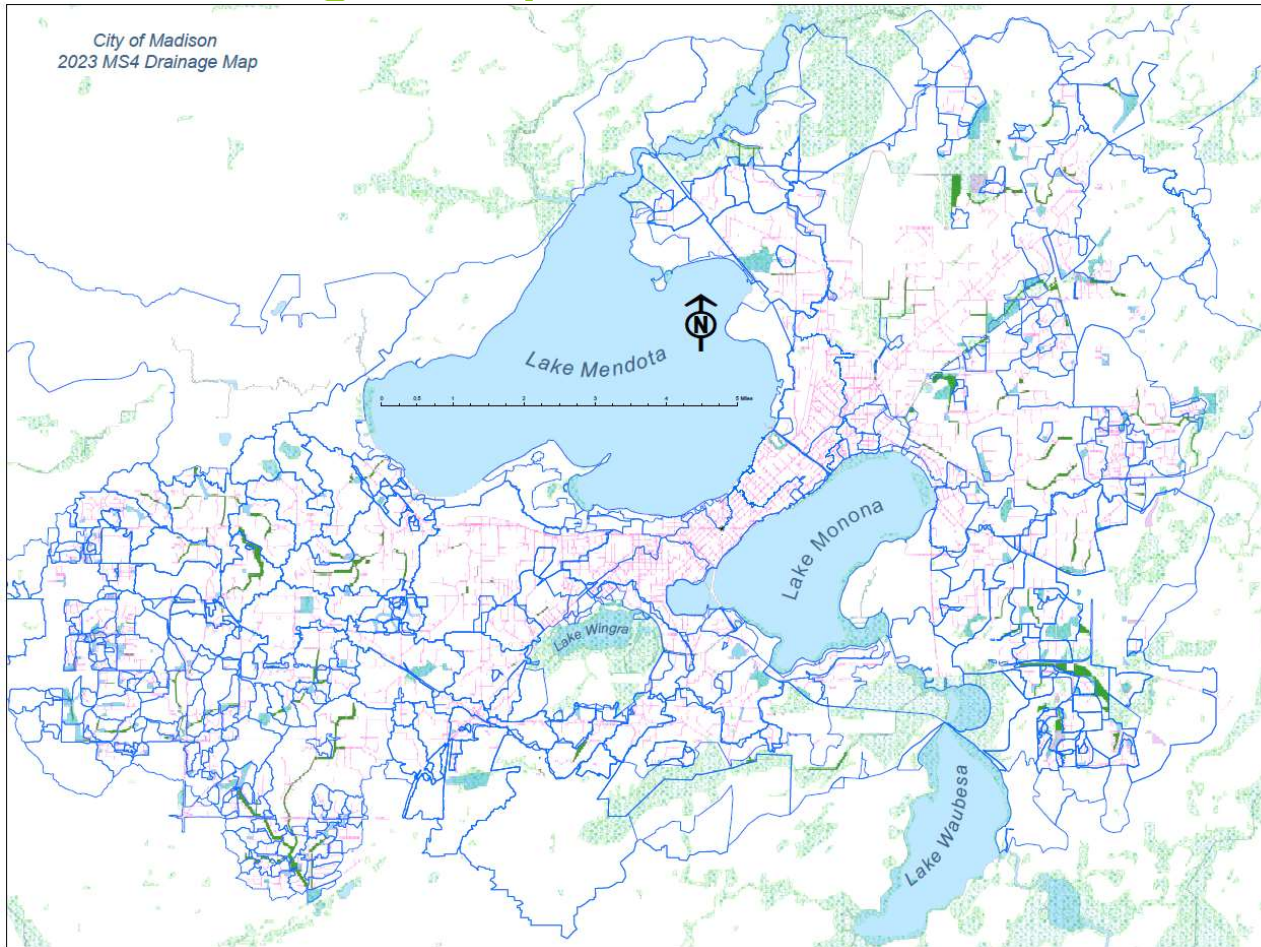
	2024	2025	2026	2027	2028	2029
Citywide Flood Mitigation	15,210,000	2,740,000	1,010,000	260,000	1,710,000	1,360,000
Lower Badger Mill Creek Pond at Mineral Point Rd	-	-	-	-	-	1,800,000
Storm Sewer System Improvements	445,000	180,000	180,000	180,000	190,000	210,000
Stormwater Quality System Improvements	1,530,000	1,540,000	1,005,000	400,000	900,000	1,975,000
Street Cleaning Equipment - Streets	557,000	596,000	638,000	824,000	526,000	780,000
Warner Lagoon Dredging	-	-	-	-	-	4,500,000
	\$ 17,742,000	\$ 5,056,000	\$ 2,833,000	\$ 1,664,000	\$ 3,326,000	\$ 10,625,000

Changes from 2023 Adopted CIP

2024 Capital Improvement Plan
2024 Executive Compared to 2023 Adopted

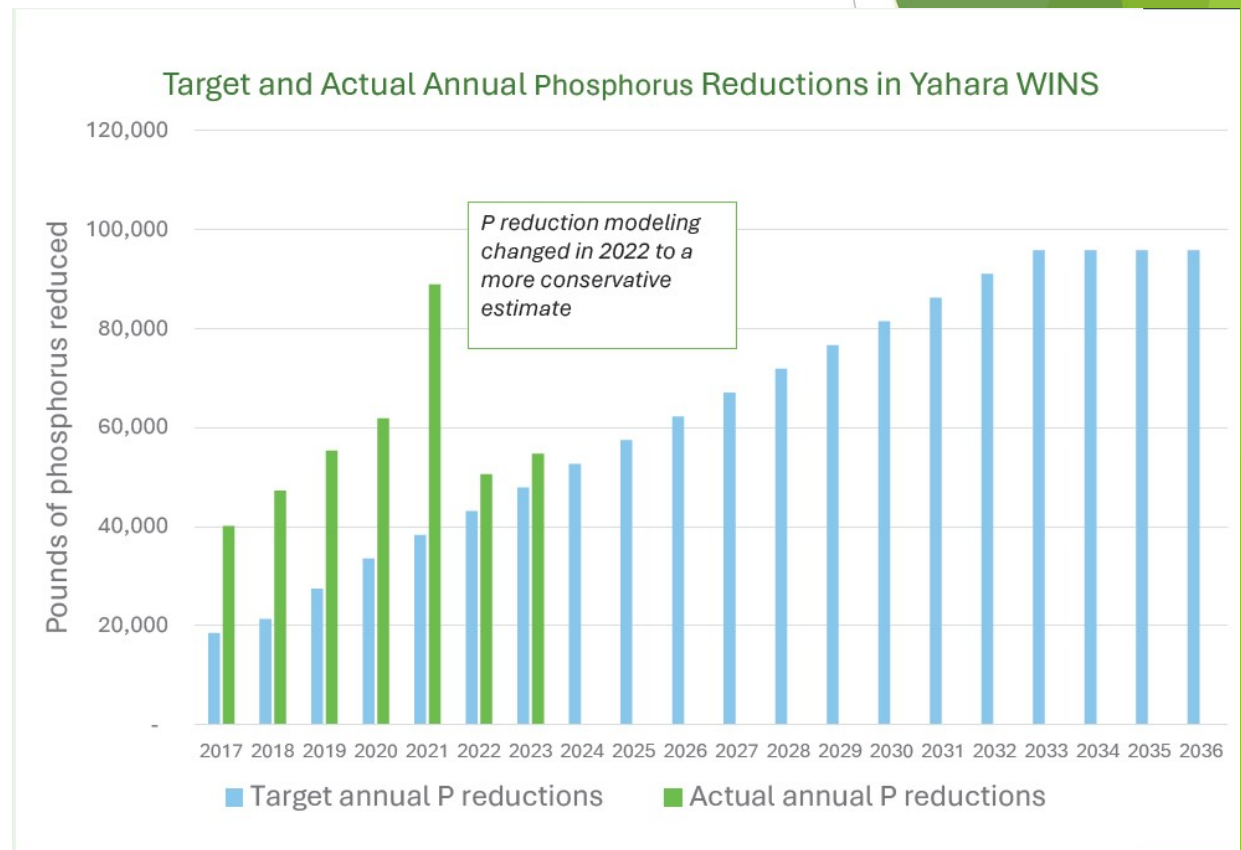


7. Drainage Map



8. Adaptive Management TMDL Compliance

- ▶ Madison Contributed
 - ▶ \$504,394 in 2024
 - ▶ Addresses 10,254 lb of TP .
- ▶ 54,541 lb TP Captured vs 47,862 lb TP Goal for 2023
- ▶ TP \$/lb is lower than initially thought
- ▶ Ultimate Goal 104,000 lb
- ▶ Madison’s MS4 produces 29,839 lb TP a year in the TMDL
- ▶ Madison Currently Captures 7,877 lb annually
 - ▶ Adaptive management covers the 10,254 lb gap.



Going Forward

- ▶ Continue Outreach and Education Efforts
- ▶ Green Infrastructure Pilot
 - ▶ Additional permeable pavement 2025 - Meyer Ave
- ▶ Increase Private Stormwater Management Inspection and Reporting -Dane County and Green Tier
- ▶ Work to Reduce Phosphorus and TSS
 - ▶ Dry Pond SOC / sand filters (2025 target)
 - ▶ Enhanced phosphorus removal with additives (Out for review)
 - ▶ (Aluminum, Iron, Proprietary)
- ▶ Improve and Expand Salt Certification - Increase Brine Usage
- ▶ Continue with Erosion Control Inspections and IDDE Education
- ▶ SWPPP Inspections into Cityworks
- ▶ Water Quality Model update 2025