

# Northfield Wasteload Allocation (WLA) Implementation Plan



**Greg Wilson**  
September 18, 2024



# Agenda

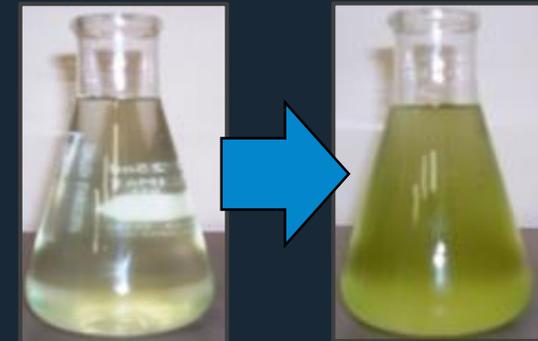


1. **Background**
2. **Water Quality Modeling**
3. **Pollutant Loading Assessment**
4. **Pollutant Reduction Goal Setting**
5. **Wasteload Allocation (WLA) Implementation Plan**

# Abbreviations



MPCA	Minnesota Pollution Control Agency
TP	Total Phosphorus
TSS	Total Suspended Solids
TMDL	Total Maximum Daily Load
WLAs	Waste Load Allocations
MS4	Municipal Separate Storm Sewer System
GIS WQM	Geographic Information System Water Quality Model
BMP	Best Management Practice



# Background



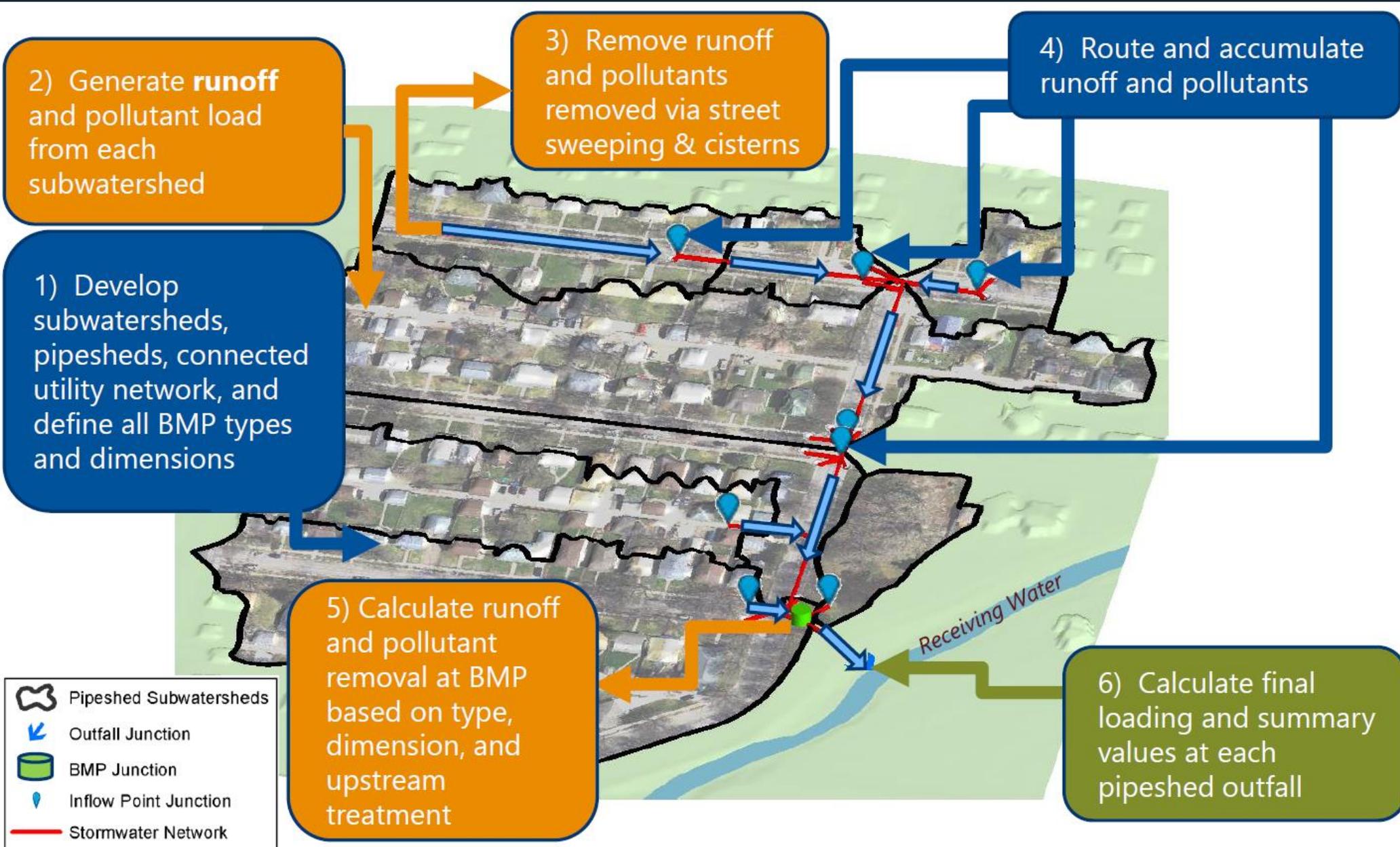
Northfield authorized coverage by MPCA under MS4 General Permit

Under this permit, the city received WLAs from the TMDLs prepared in Cannon River Watershed and Restoration Protection Strategies report

Study intended to identify ways the City can further reduce storm water pollution and implement strategies to assist in meeting WLAs over next several decades

Barr was hired to develop WLA Implementation Plan and adaptive tool to support future modeling scenarios and plan development

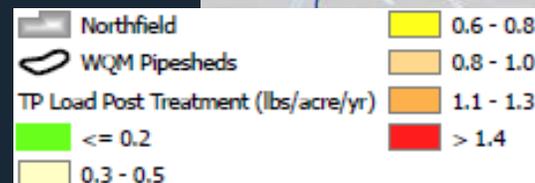
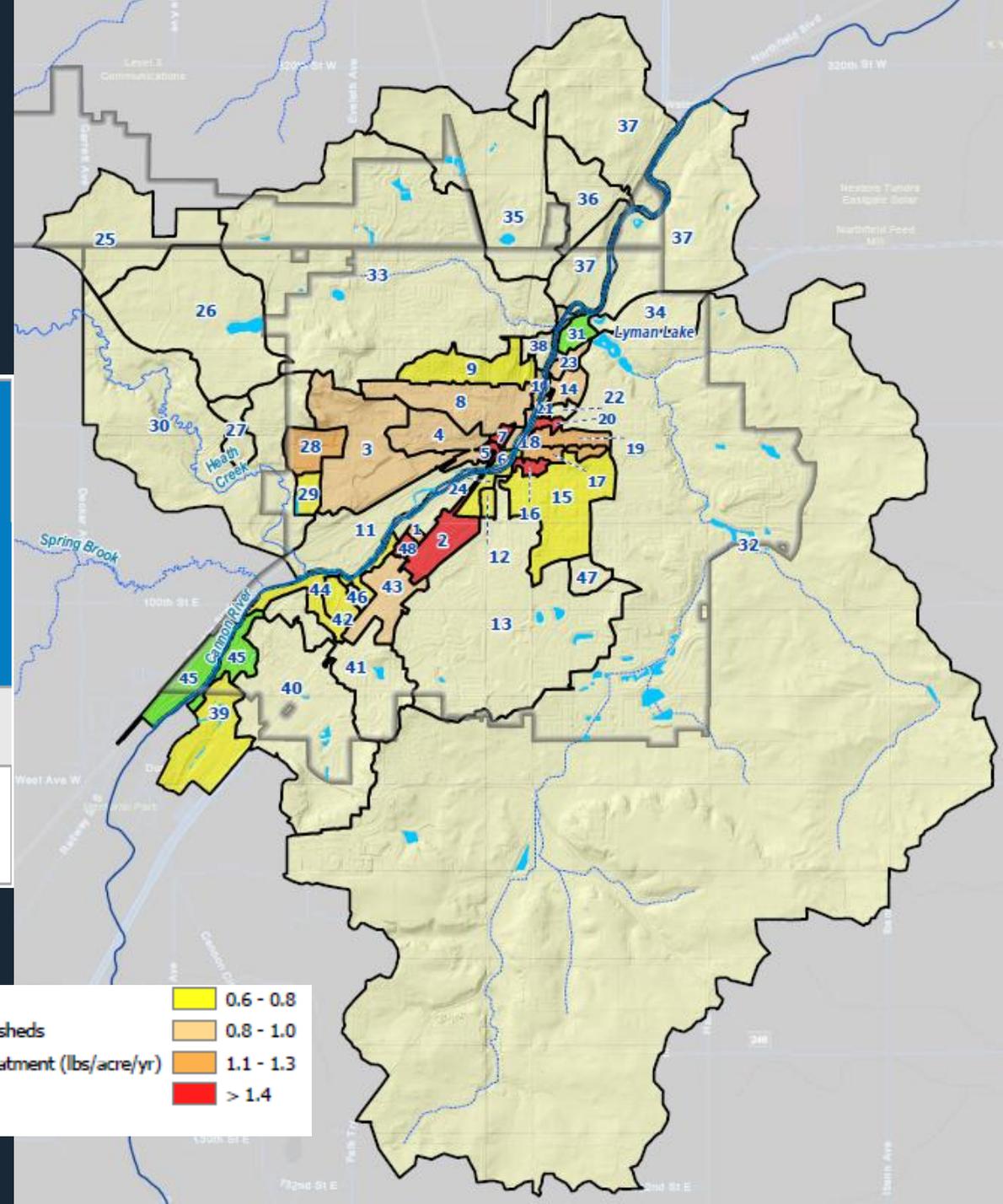
# GIS WQM



# GIS WQM—Pollutant Loading Assessment



Pollutant	Estimated Loading and Pollutant Removal in Northfield Assuming No Tributary Inflow			Estimated Loading and Pollutant Removal in Tributary Areas Only			Estimated Removal of Tributary Pollutants Provided by Northfield BMPs (lbs.)
	Total Raw Load (lbs.)	Pollutant Removed (lbs.) in BMPs/Street Sweeping	Load to River (lbs.)	Total Raw Load (lbs.)	Pollutant Removed (lbs.) in BMPs/Street Sweeping	Load to River (lbs.)	
Total Phosphorus	3,043	742	2,301	2,762	54	2,709	431
Total Suspended Solids	903,520	322,086	581,433	629,307	15,834	613,473	180,148



# Applicable TMDL WLAs



## TMDL MS4 WLAs for City of Northfield

TMDL Receiving Water	TP WLA (lbs/ac/yr)	TSS WLA (lbs/ac/yr)
Lake Byllesby	0.20 <sup>(1)</sup>	
Cannon River Reach 509		63.1 <sup>(2)</sup>
Chubb Creek Reach 528		61.7 <sup>(2)</sup>
Lower Cannon River Reach 502		45.8 <sup>(3)</sup>
Lower Cannon River Reach 646		47.5 <sup>(3)</sup>
South Metro Mississippi River		154

[1] 2003 baseline year

[2] 2012 baseline year

[3] 1998 baseline year

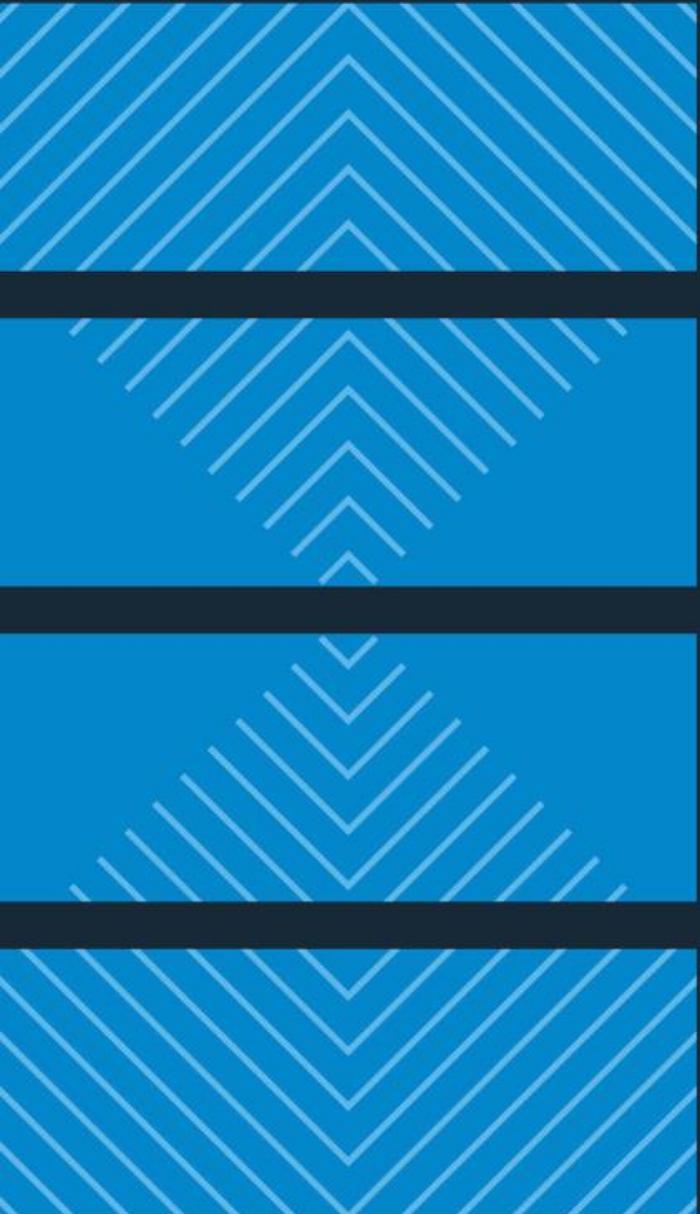
# Pollutant Reduction Goal Setting



1. Quantified gaps between existing TP and TSS loading and WLA requirements
2. Lake Byllesby TMDL controls pollutant load reduction
3. Corresponds with 45% TP reduction from existing conditions
4. MPCA—must show progress toward meeting WLAs, compliance dates not specifically mandated, and credit can be applied towards other TP sources
5. TP load reduction rate of 4.5% per year results in 100-year compliance period
6. 4.5% load reduction rate corresponds with 20 pounds of additional TP loading that would need to be reduced each successive year

TMDL MS4 WLAs for City of Northfield		
TMDL Receiving Water	TP WLA (lbs/ac/yr)	TSS WLA (lbs/ac/yr)
Lake Byllesby	0.20	
Cannon River Reach 509		63.1





# Questions??



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