

Ramsey
Conservation District



Using Natural Resources to Enhance Resiliency

overview of

MINNESOTA

Minnesota

Overview of the land of 10,000+ lakes

82%

OF LAND
IS PRIVATELY
OWNED

5 MILLION

POPULATION



STATE BIRD:
LOON



STATE SPORT:
HOCKEY



STATE FISH:
WALLEYE

Minnesota

Overview of the land of 10,000+ lakes



Ramsey County
includes Capitol
City of St. Paul



“Land of 10,000
Lakes”
8.4% of total area



Established 1967



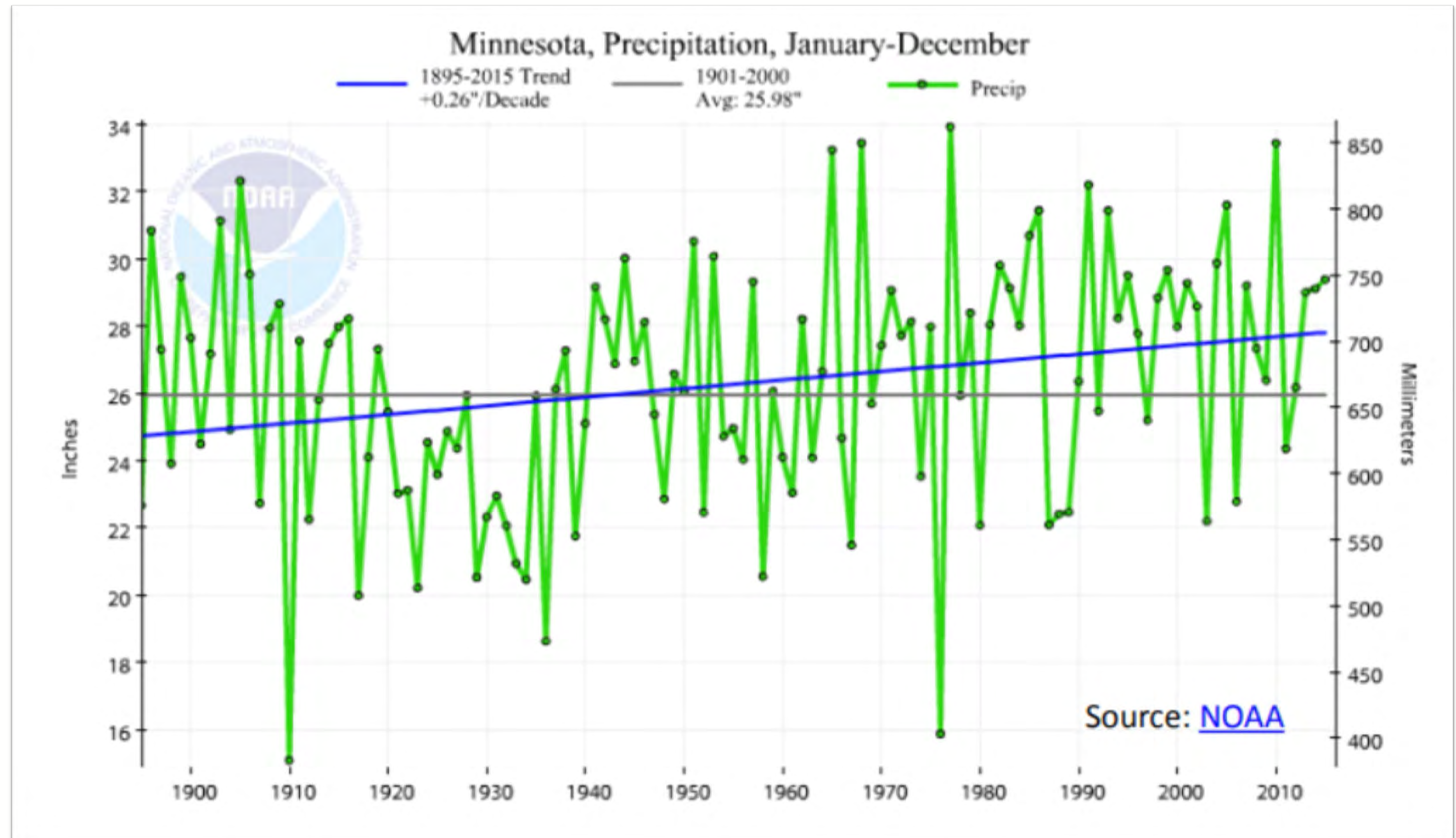
2008 Legacy
Amendment

Minnesota Buffer Law Effective 11/1/2017



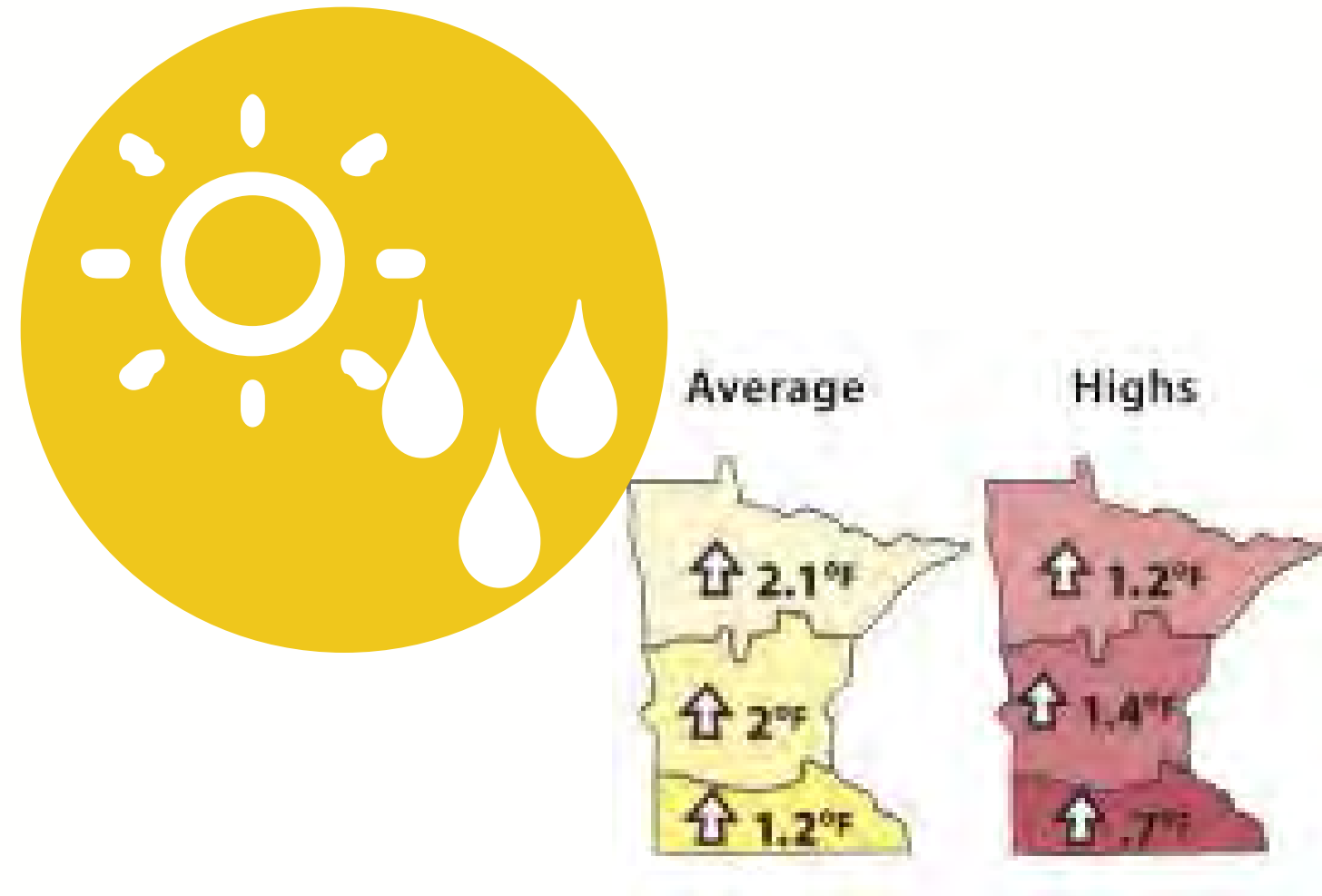
Image: <http://www.bwsr.state.mn.us/buffers/Note>: Aerial not from Ramsey County

Climate Change in Minnesota: Increase in Precipitation and Intensity



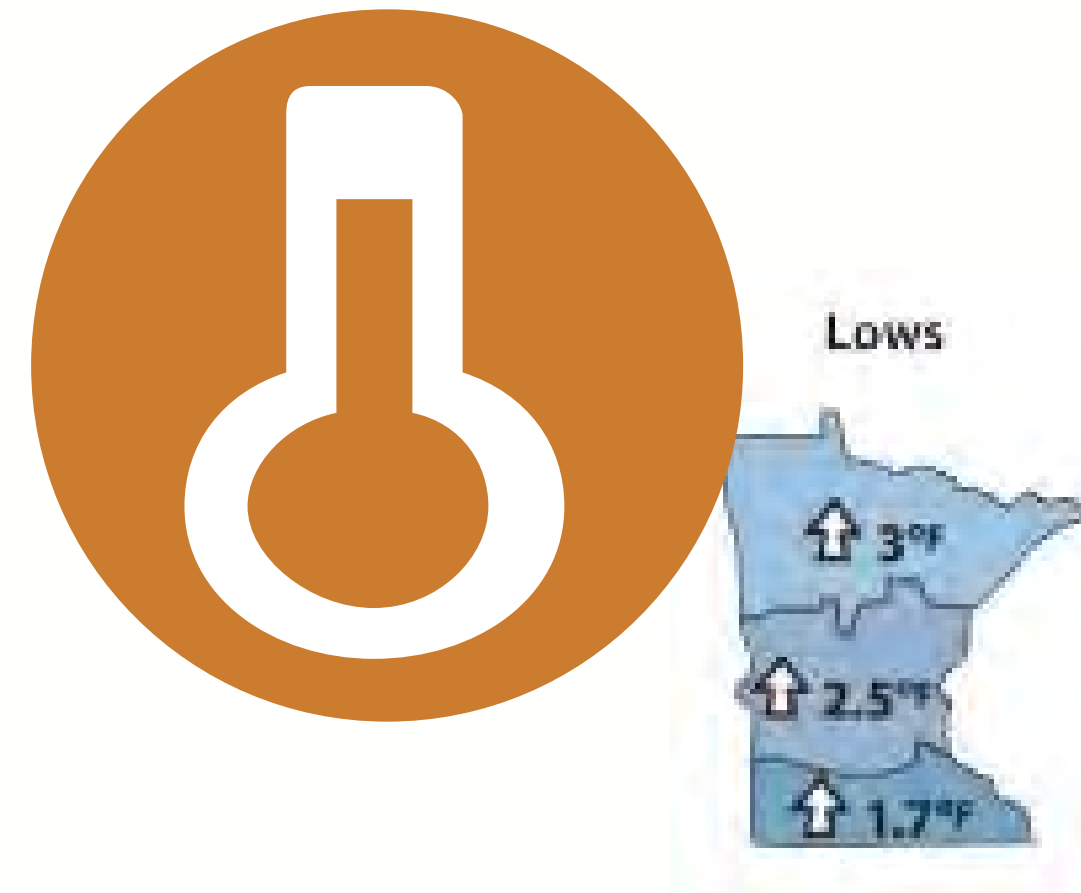
Minnesota's Most Pronounced Trends

...



**Minnesota is
warmer & wetter**

Major shift observed



**Average lows are
increasing**

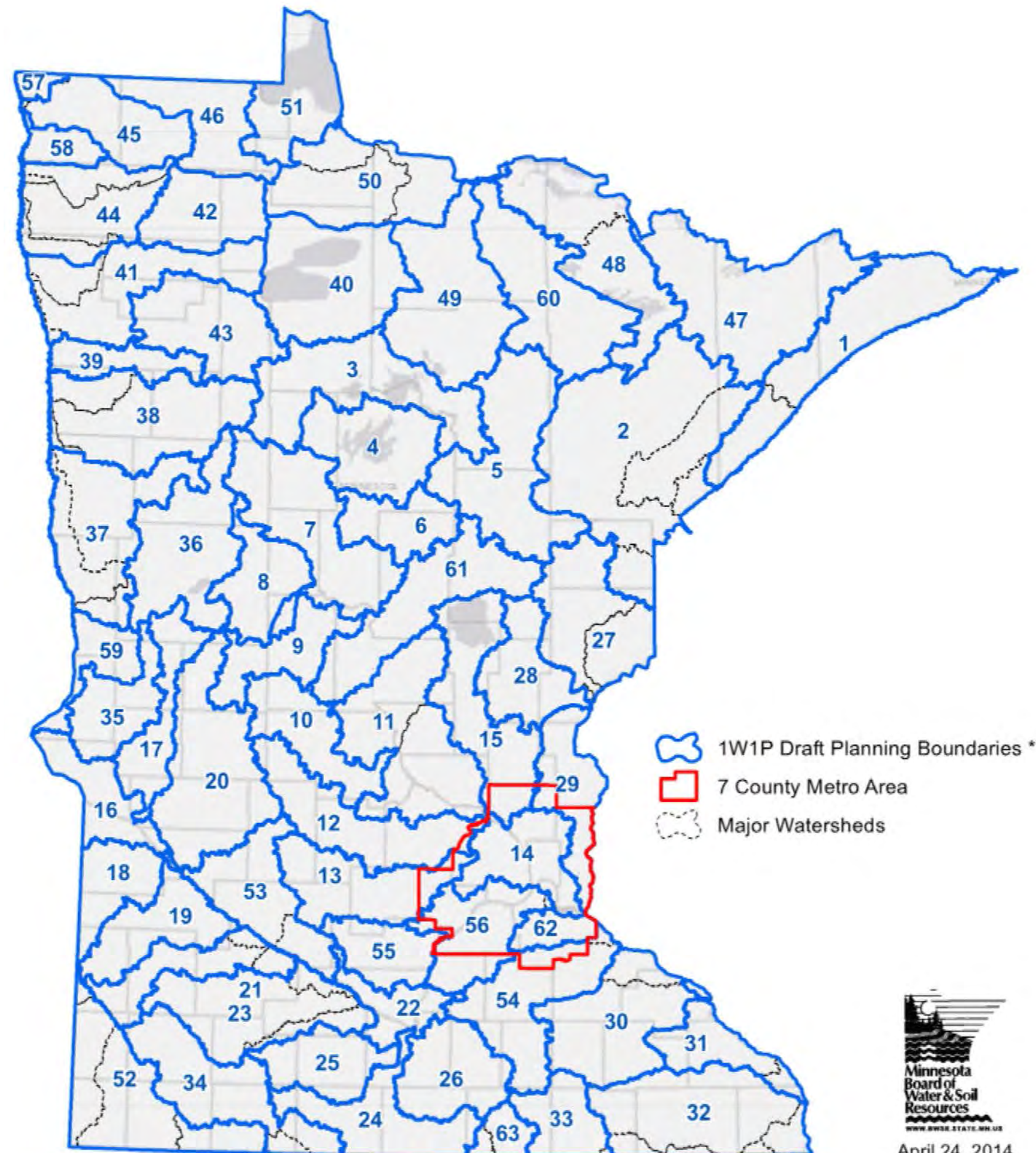
Rapid loss in cold extremes



**Extreme rainfall
increasing**

More and larger “big” events

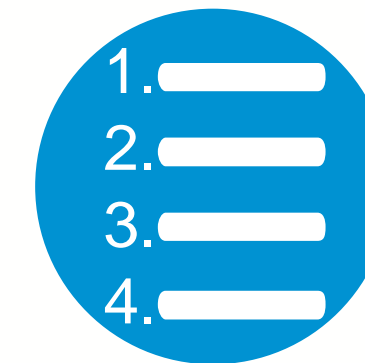
One Watershed, One Plan *Suggested Boundary Map*



*Not legal boundaries; intended for planning purposes through One Watershed, One Plan only.

Copyright: ©2013 Esri, DeLorme, NAVTEQ

One Watershed, One Plan



Prioritized



Targeted



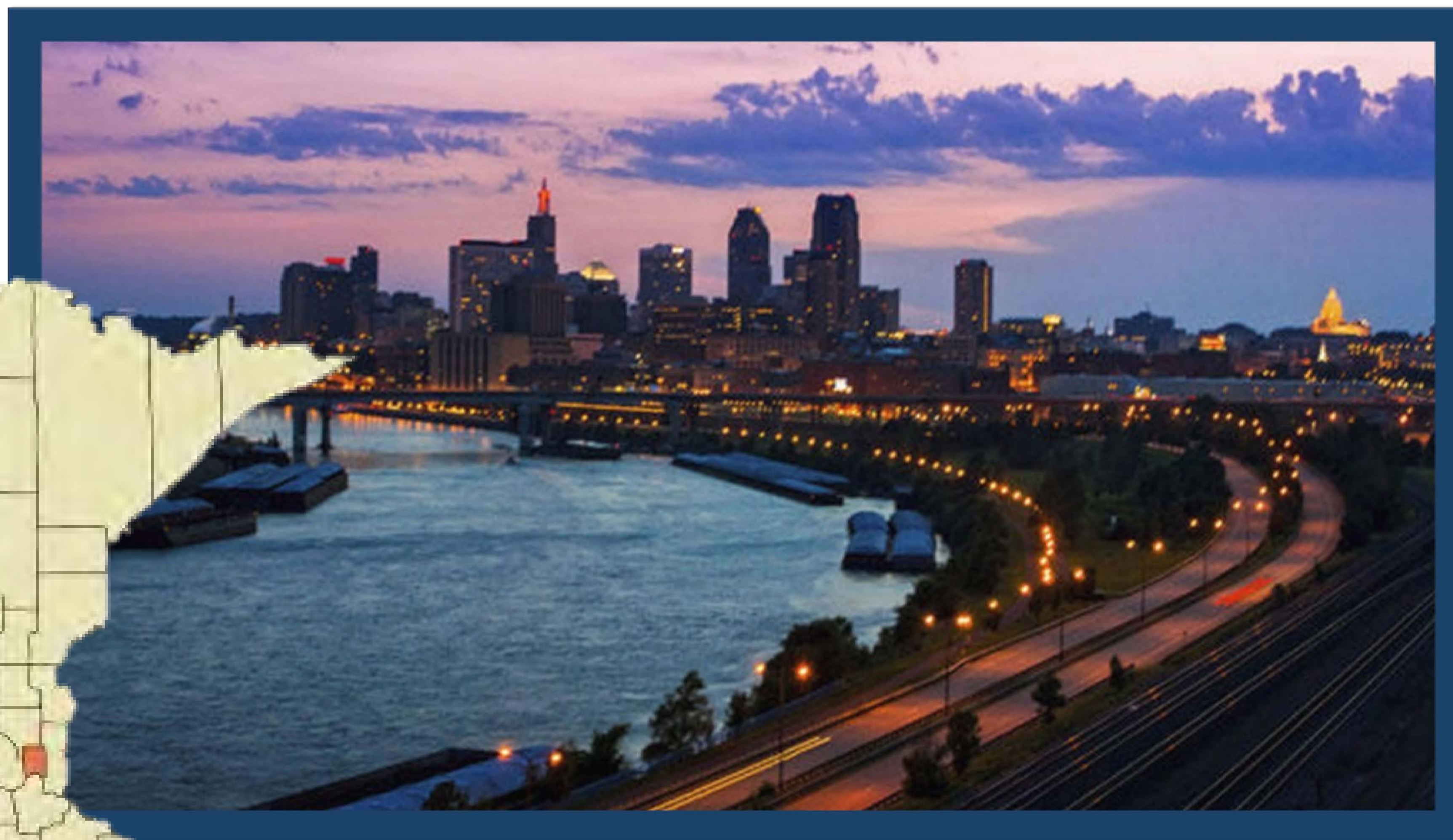
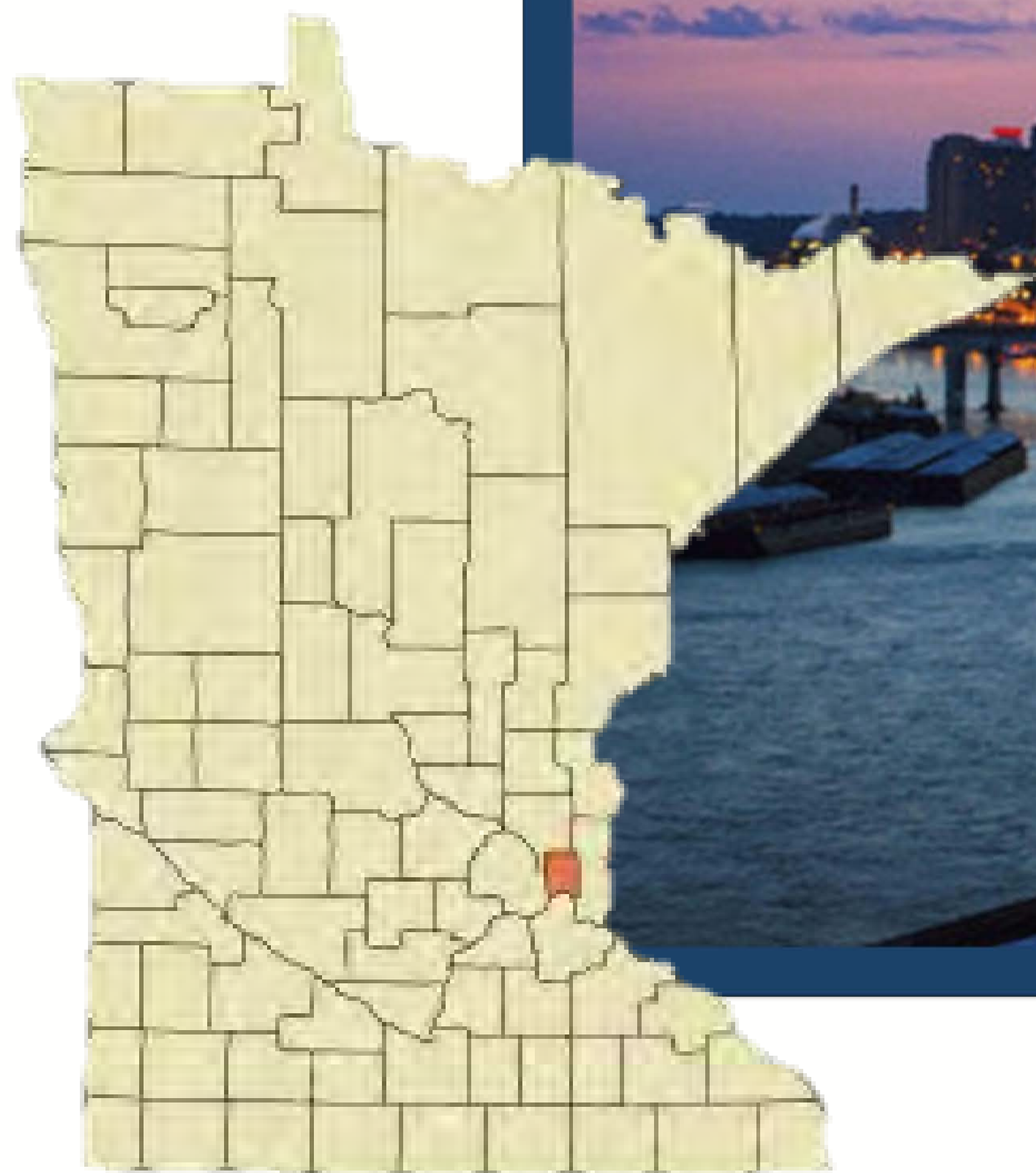
Measurable

overview of

Ramsey

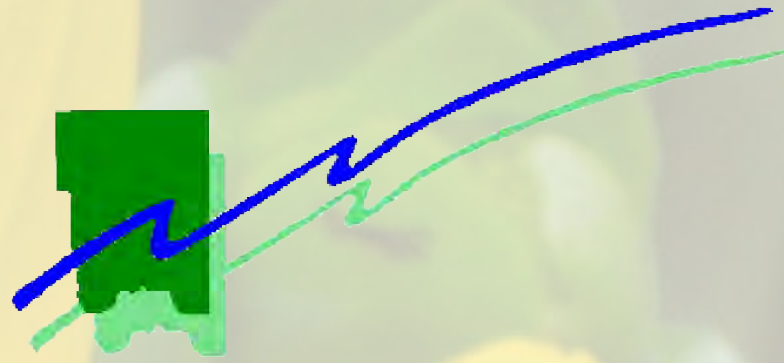
Conservation District





Ramsey

Conservation District



Our Mission



Conserve and Enhance Natural Resources

in Ramsey County by providing

Technical Support

Financial Support

and Educational Support

to residents, property owners, and state, local, and federal governmental agencies and environmental organizations

Objective: Adapt to
Climate Variabilities and
Minimize Flooding



Ramsey
Conservation District



COMPREHENSIVE PLAN

2017 - 2025

Strategy 1:

Staff Training & Community Education



TECHNICAL WORKSHOP

Hold a technical workshop for staff to update BMP design models to incorporate more intense precipitation events, in line with projected regional models, and to use the most updated floodplain delineations



HOST PUBLIC FORUM

Host a public conservation forum on climate variability and adaptation with actions people can take to minimize their footprint and increase adaptive capacity in their communities.



Are We Prepared?

*Community Resilience in a
Changing Environment*

June 20, 2017

9-11 a.m.

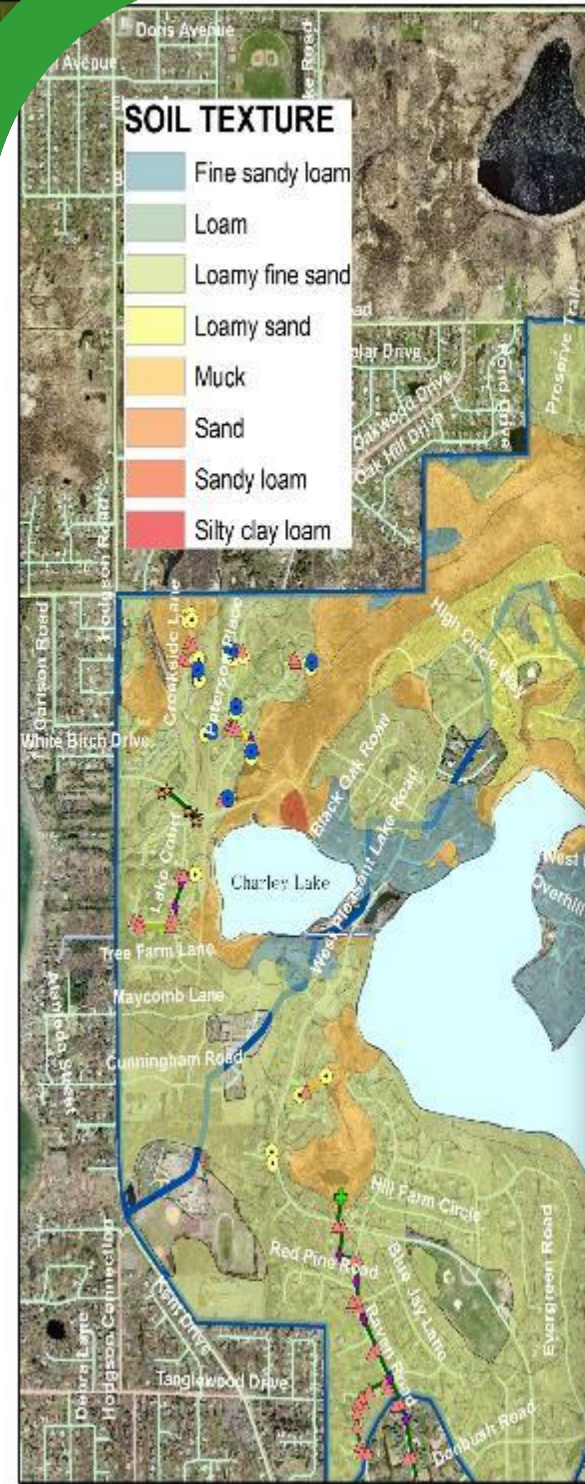
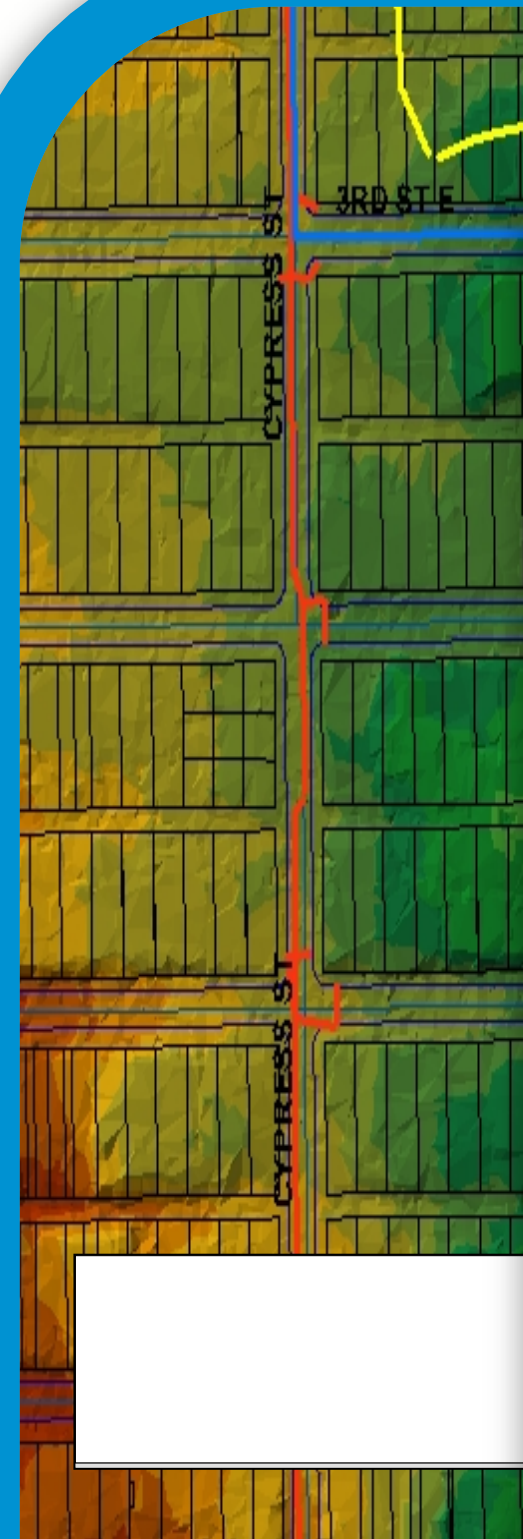
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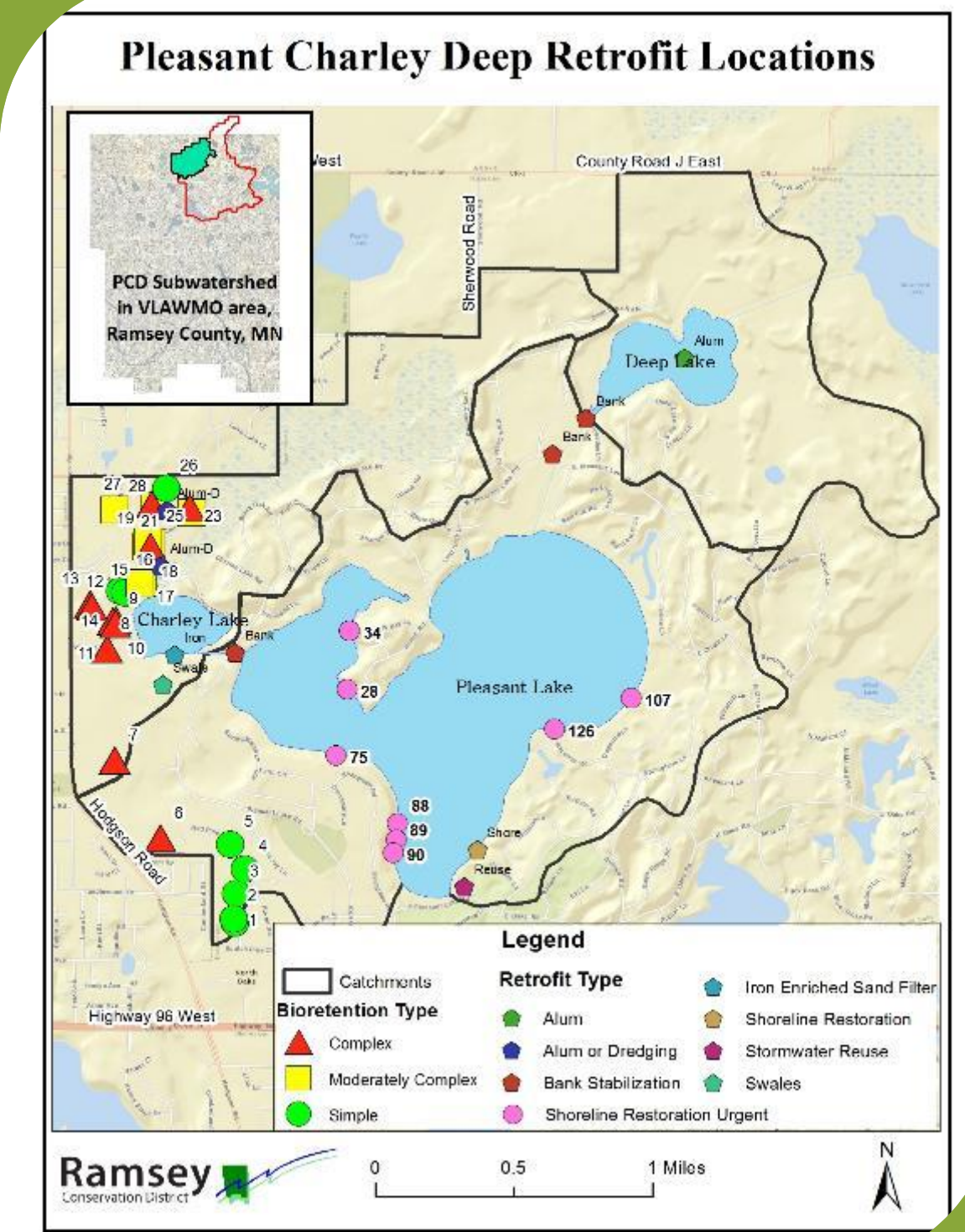


SUBWATERSHED ASSESSMENTS

Subwatershed Assessments



Land Use:					
Low Density Residential					
Source Area #	Source Area	Area (acres)	Source Area Parameters	First Control Practice	Second Control Practice
Roofs					
3	Roofs 3	0.362	Entered	--	--
4	Roofs 4	0.644	Entered	--	--
6	Roofs 6	0.235	Entered	--	--
8	Roofs 8	0.281	Entered	--	--
Parking					
13	Paved Parking 1	0.019	Entered	--	--
Driveways/Sidewalks					
25	Driveways 1	0.609	Entered	--	--
26	Driveways 2	0.137	Entered	--	--
27	Driveways 3	0.050	Entered	--	--
28	Driveways 4	0.060	Entered	--	--
31	Sidewalks 1	0.067	Entered	--	--
32	Sidewalks 2	0.037	Entered	--	--
33	Sidewalks 3	0.013	Entered	--	--
34	Sidewalks 4	0.016	Entered	--	--
Streets					
37	Streets 1	0.419	Entered	SC	--
38	Streets 2	0.799	Entered	SC	--
39	Streets 3	0.114	Entered	SC	--
Landscaped Areas					
51	Small Landscaped Areas 1	7.807	Entered	--	--



Delineate area into hydrologic catchments

GIS analysis of soil texture & land use

WinSLAMM pollution & runoff modeling

Stormwater BMP designs & modeling

Site visit to verify BMP placement

Final map & ranked list of cost-effective projects

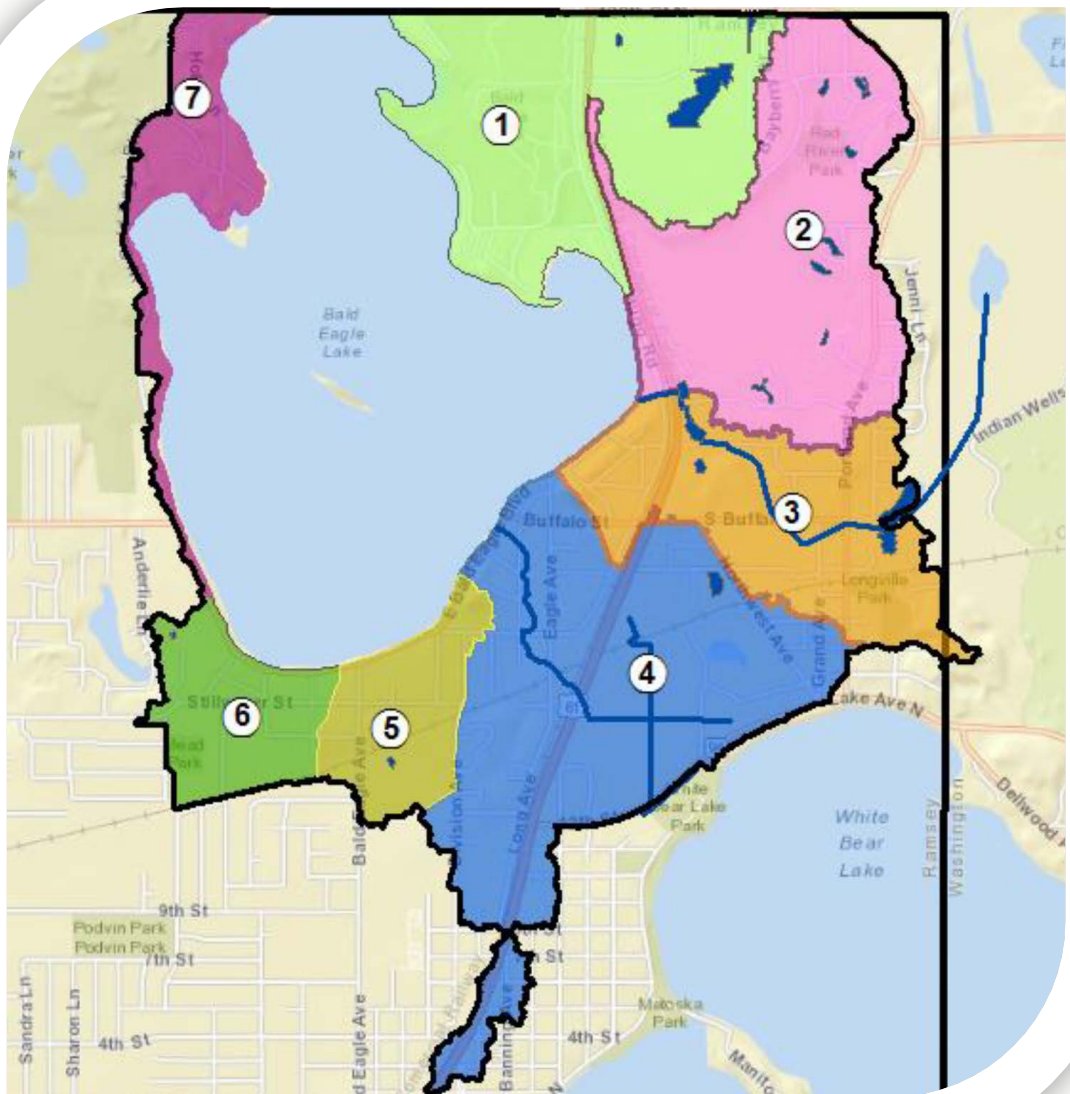
Subwatershed Assessment Customized to Local Needs

IMPAIRED WATERS

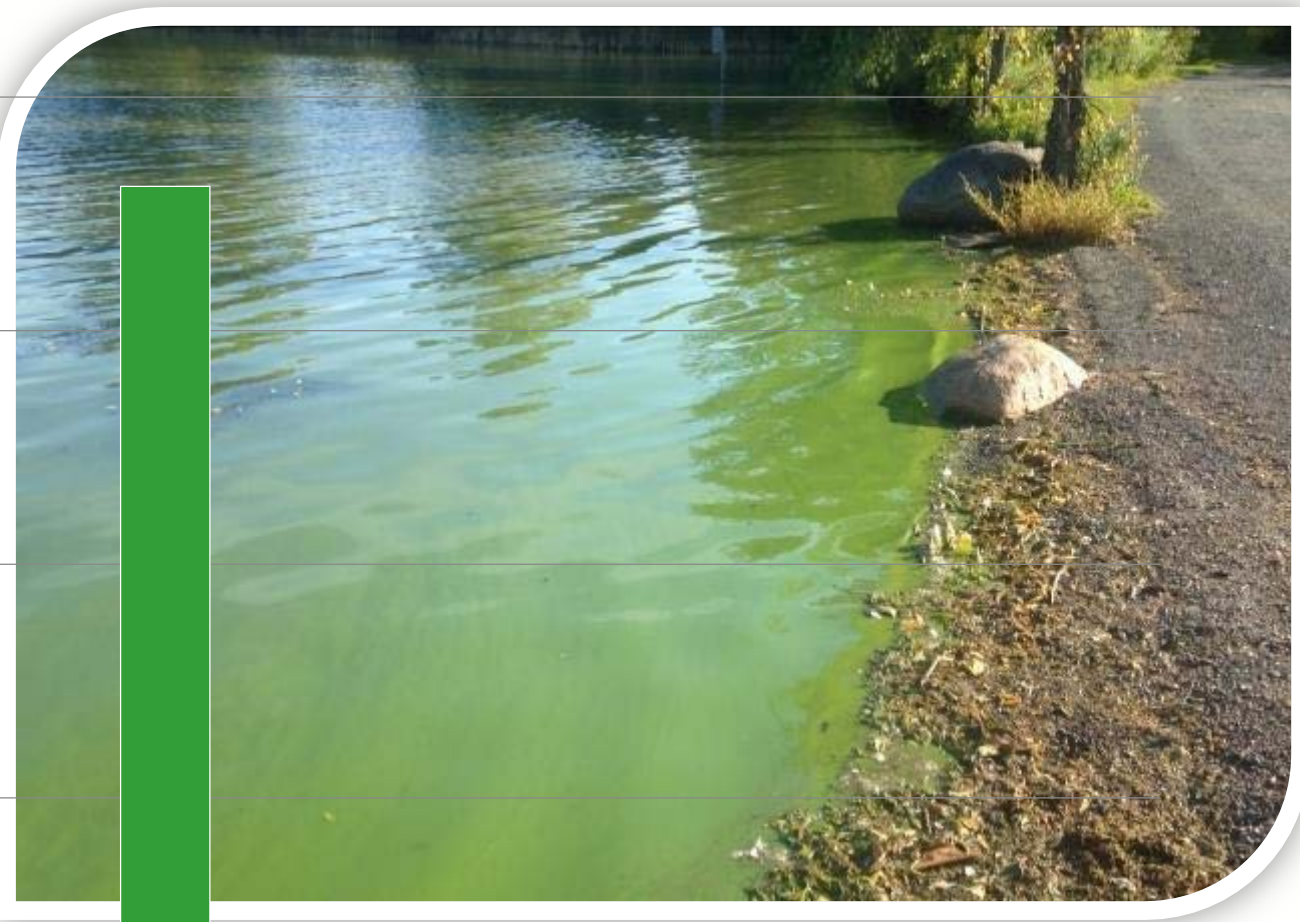
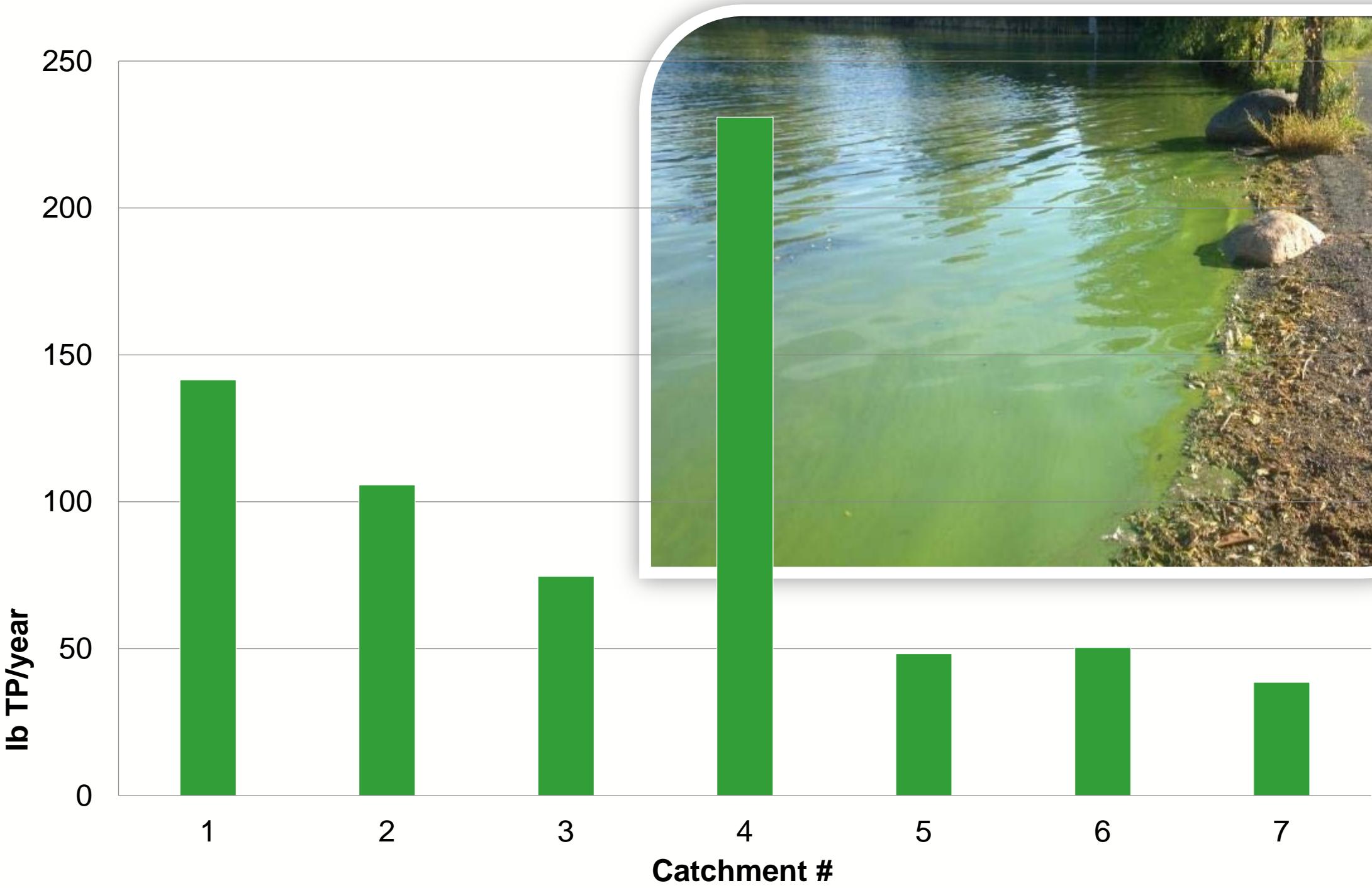
Goal: Phosphorus reduction

FLOOD-PRONE AREAS

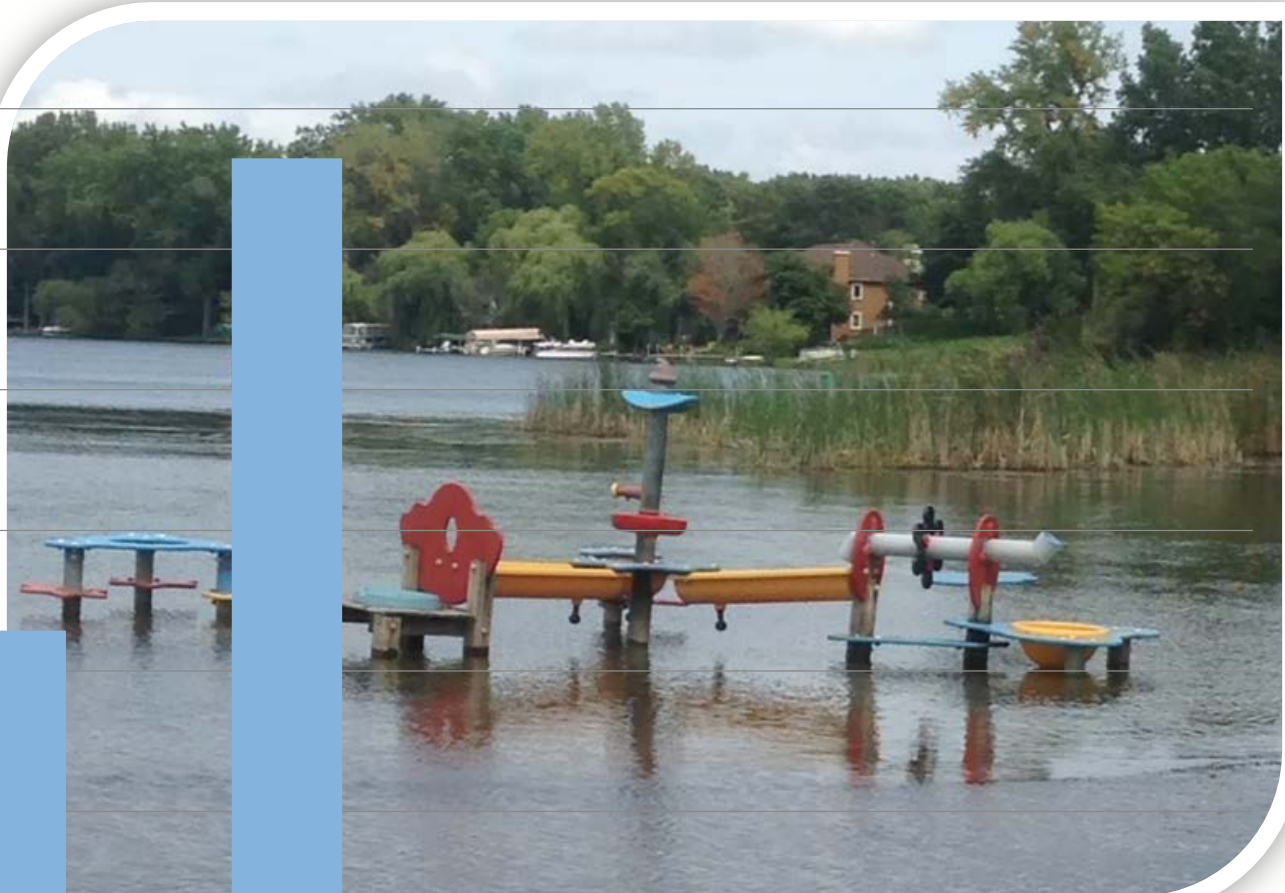
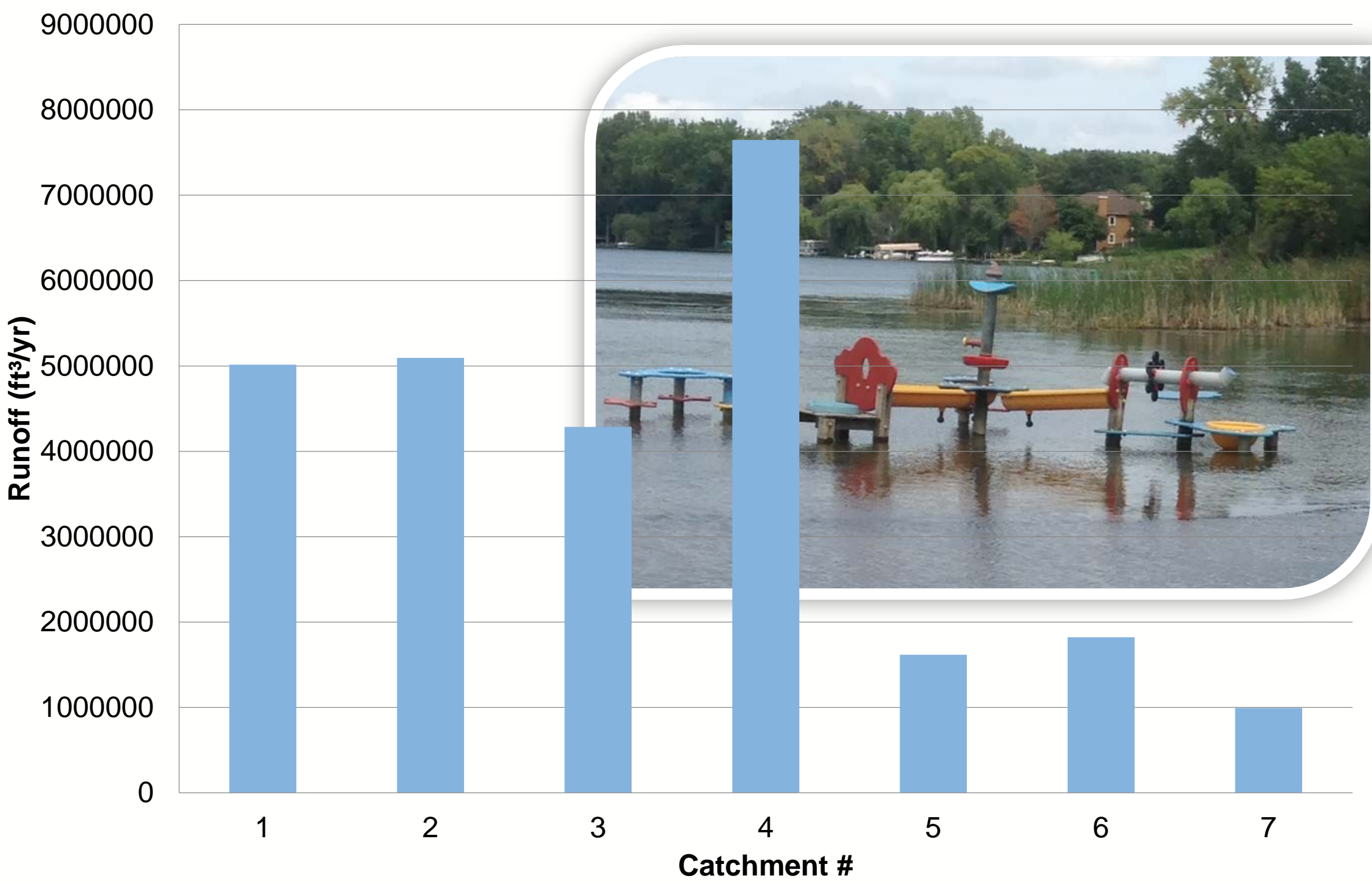
Goal: Runoff reduction



Modeled TP (lb/year) Base Load



Modeled Runoff (ft³/yr)



Strategy 2:

Assist LGUs to Prevent Flooding



COLLABORATE

Collaborate with LGUs to conduct Stormwater Interception Potential studies in catchments and 'sewersheds' of known areas of flooding to locate strategic areas to place BMPs to reduce stormwater volume and pollution levels



PROMOTE FLOODPLAIN PROTECTION

Promote floodplain protection policies and conduct stormwater interception studies among local units of government



ALLEVIATE STRESS ON FLOOD-PRONE WATERS

Alleviate stress on flood-prone water bodies by designing and implementing BMPs that infiltrate and filter runoff locally, lessening loading to stormwater conveyance system and improving water quality

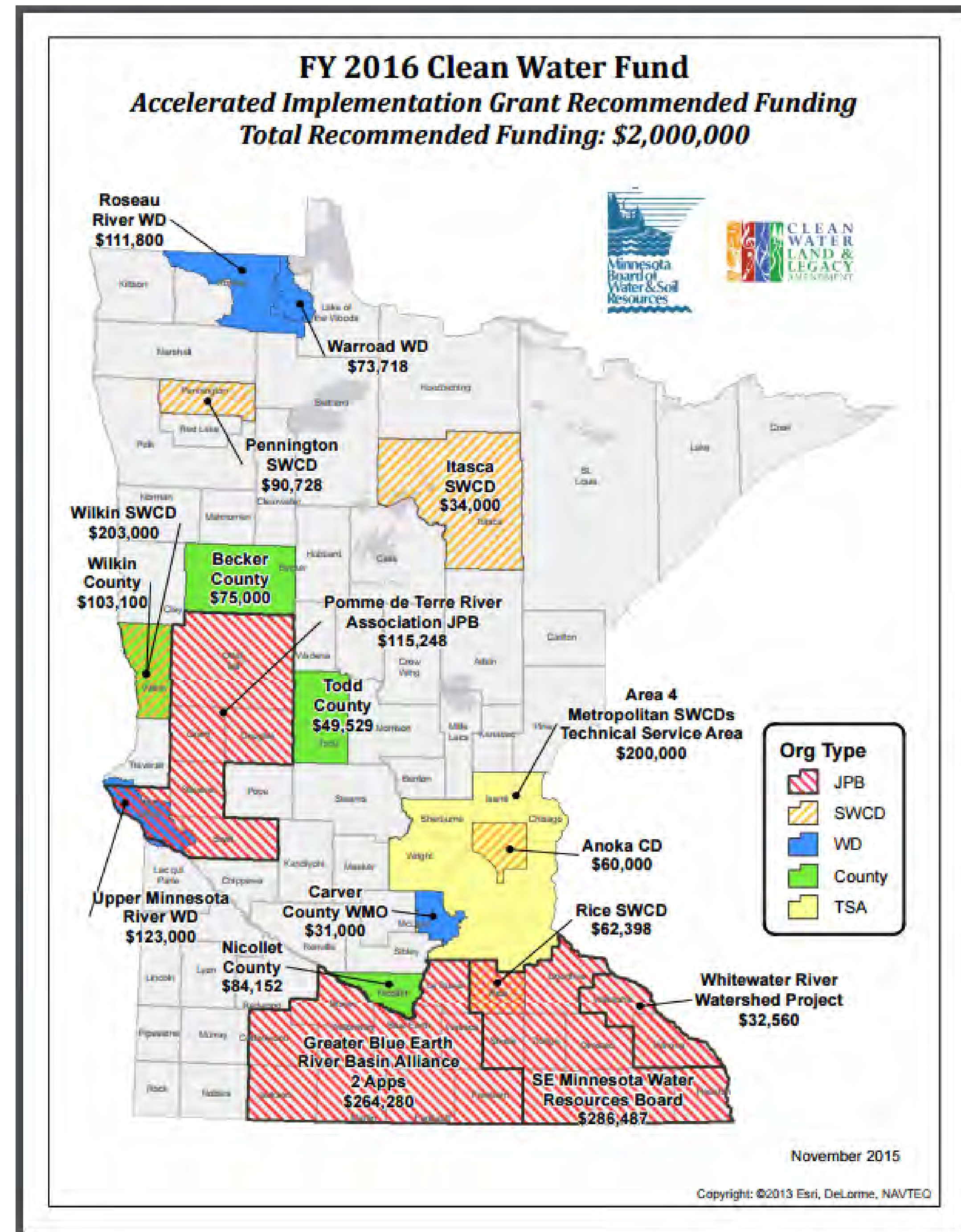
Clean Water Fund

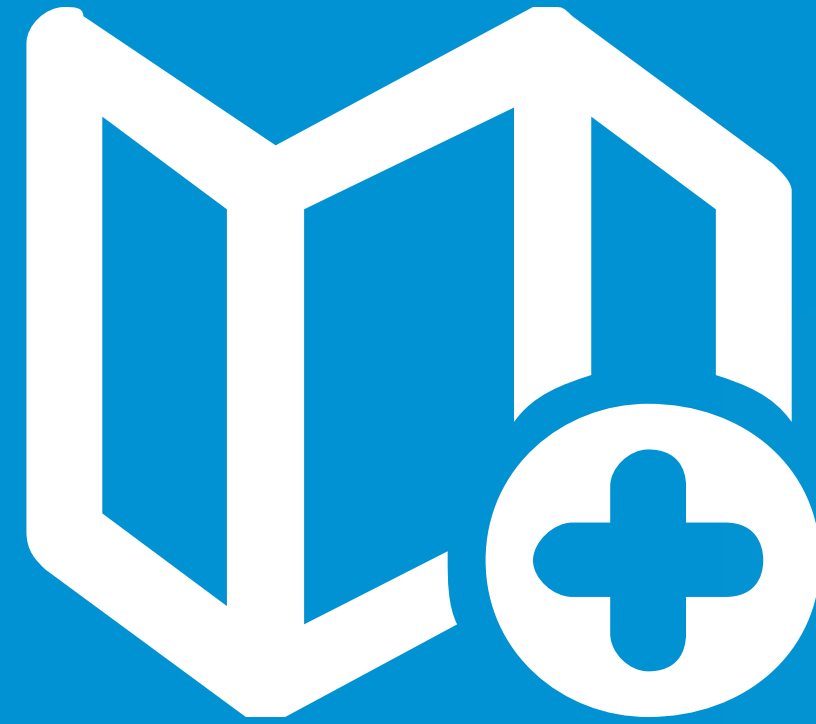
Starting in 2009, <1% state sales tax went to the Clean Water Fund to protect, enhance, and restore wetlands, surface water, and groundwater. The CWF supports:

- Water improvement Projects
- Studies to prioritize projects for the most effective resource protection



Algal bloom in Lake Byllesby
Dakota County





DESIGNING BMPs

Project One: Site Resiliency



PROJECT
GOALS



Stormwater Volume &
Rate Control



Infiltration & Filtration for
Pollutant Reduction



Education & Outreach

Project One: Site Resiliency



Project One: Site Resiliency



Project Two: Community Resiliency



PROJECT
GOALS



Stormwater Volume &
Rate Control

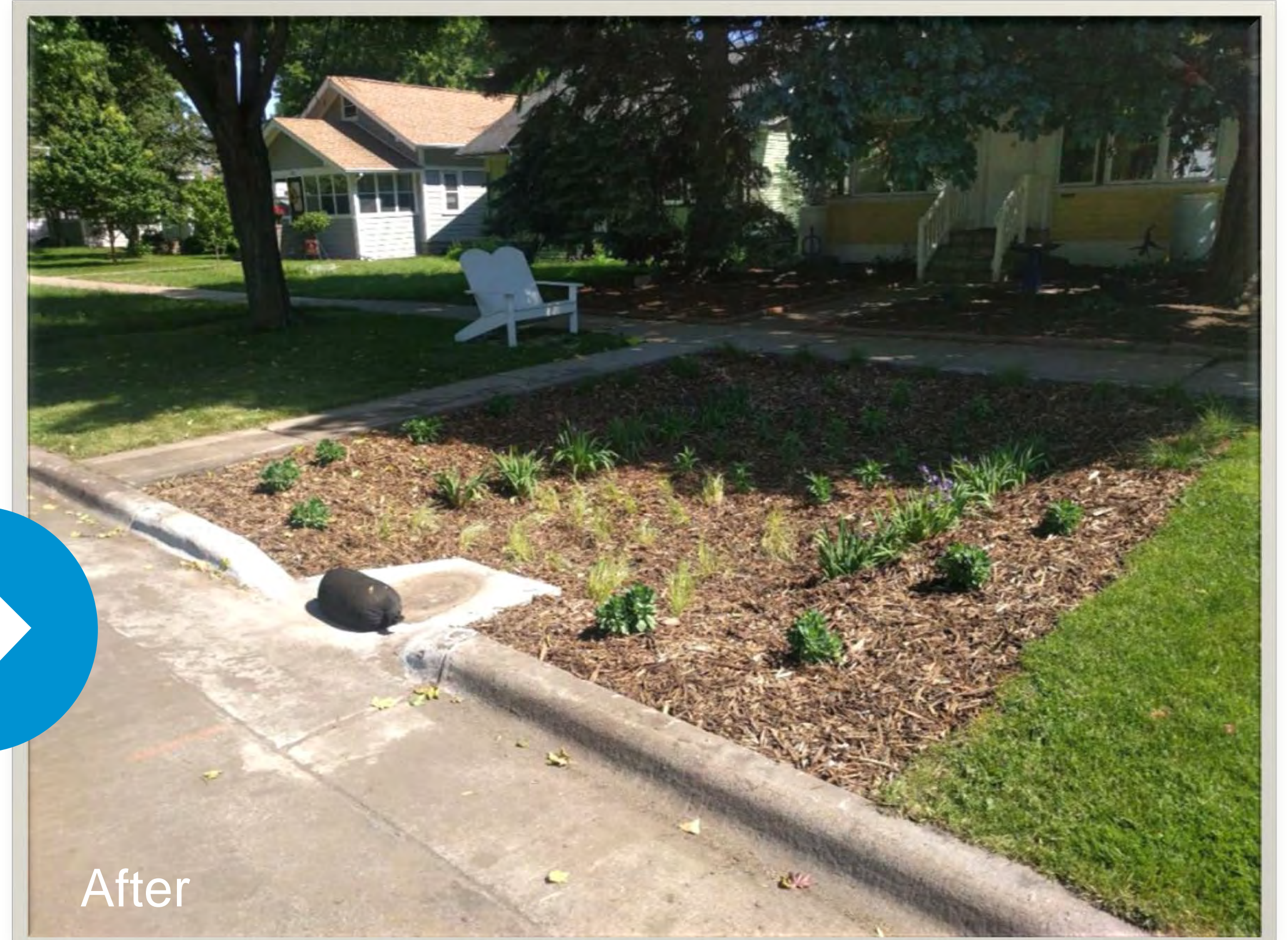
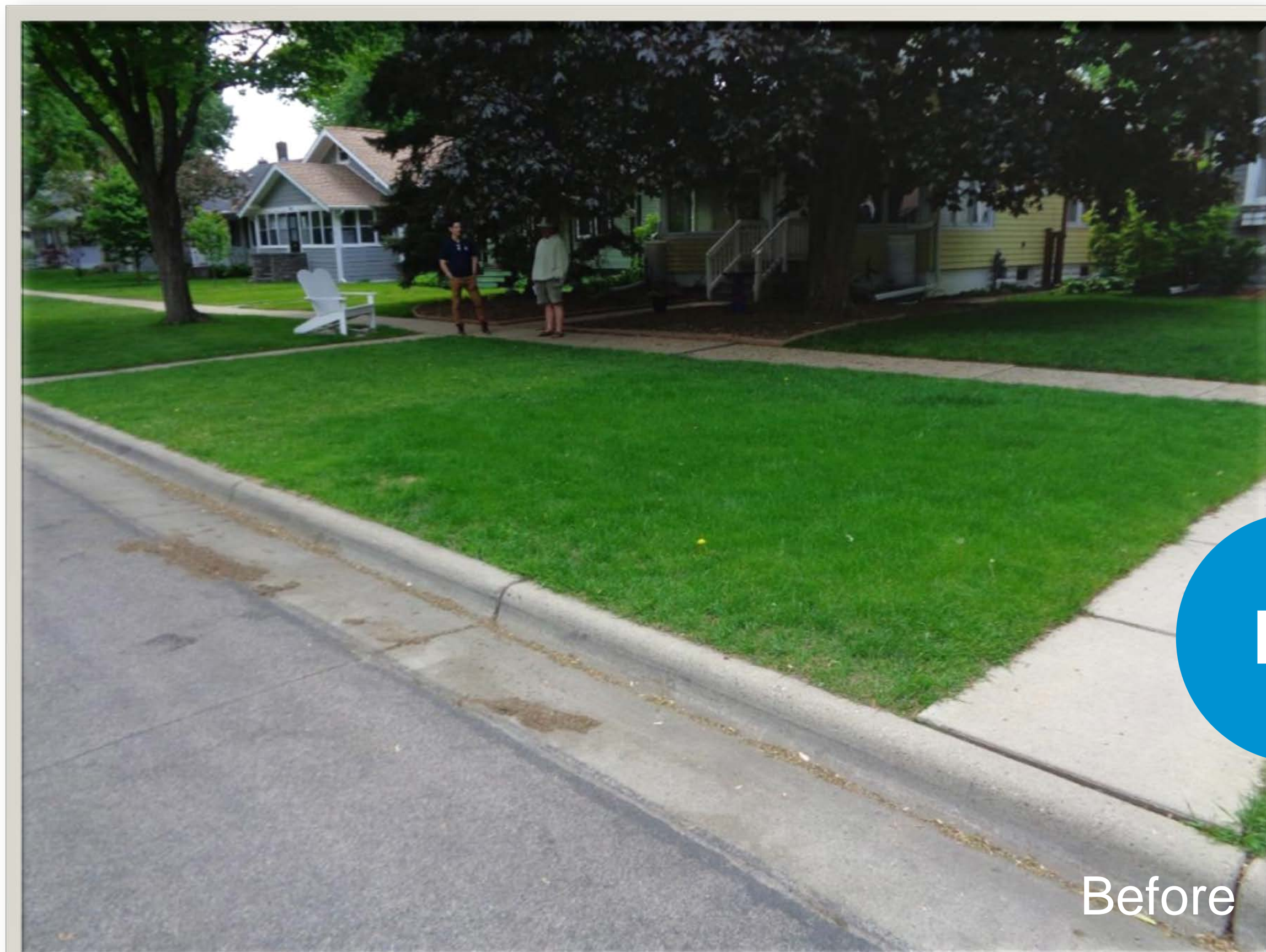


Infiltration & Filtration for
Pollutant Reduction



Education & Outreach

Project Two: Community Resiliency



Project Three: Resource Resiliency



PROJECT GOALS



Shoreline Protection & Stabilization for Sediment Loss



Infiltration & Filtration for Pollutant Reduction

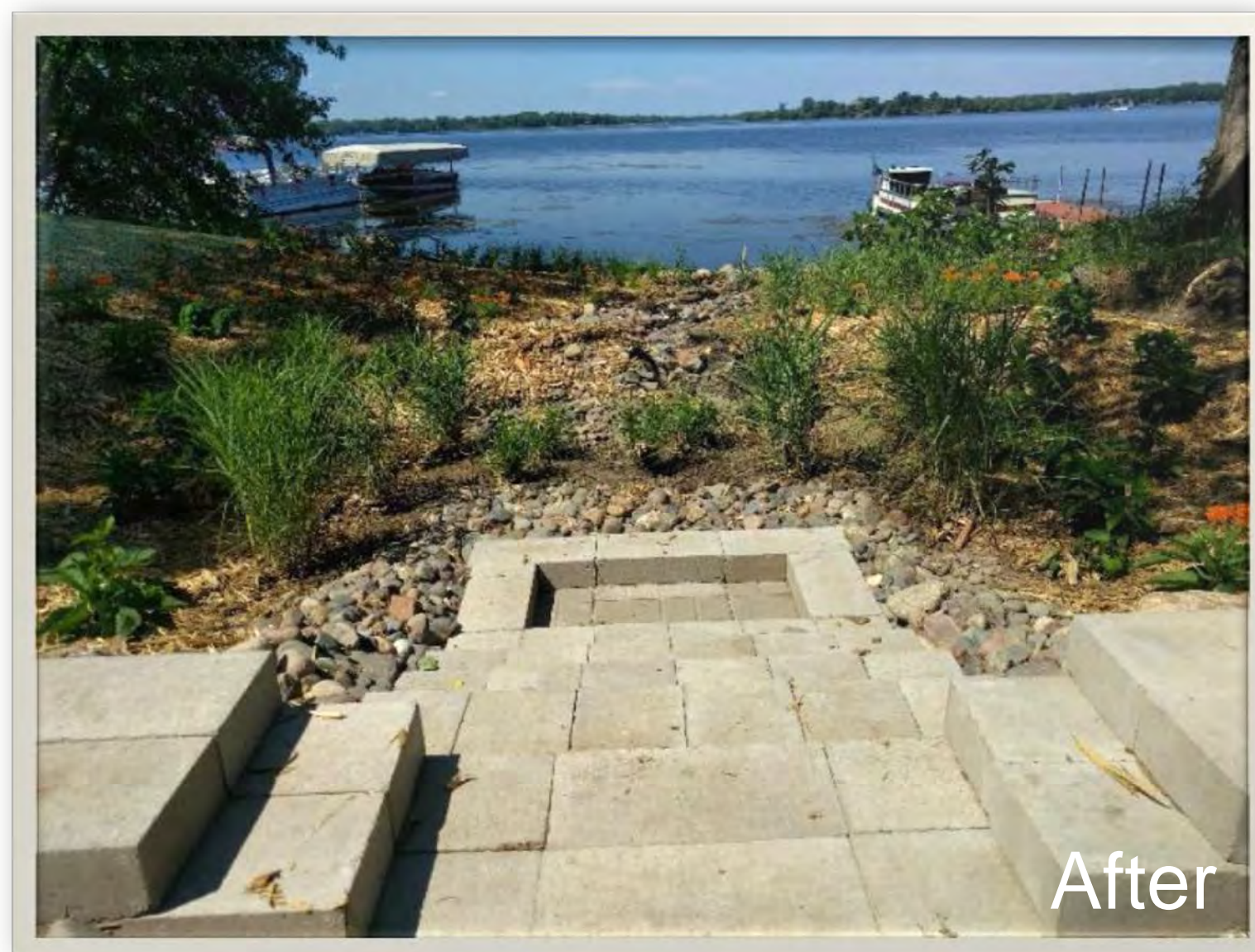


Stormwater Volume & Rate Control



Education & Outreach

Project Three: Resource Resiliency



Project Four: Resource Resiliency

Before



Before



Before



PROJECT
GOALS

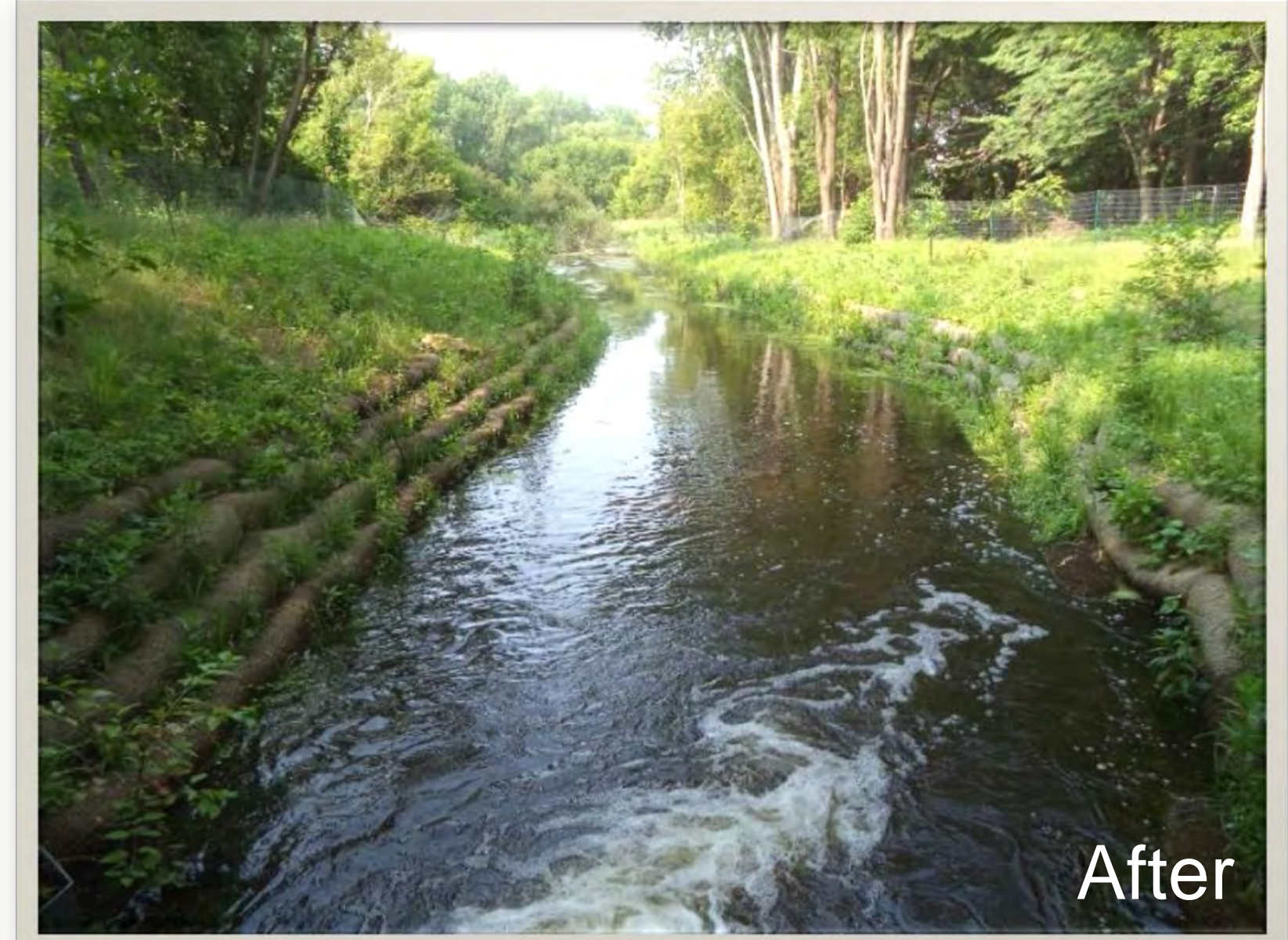
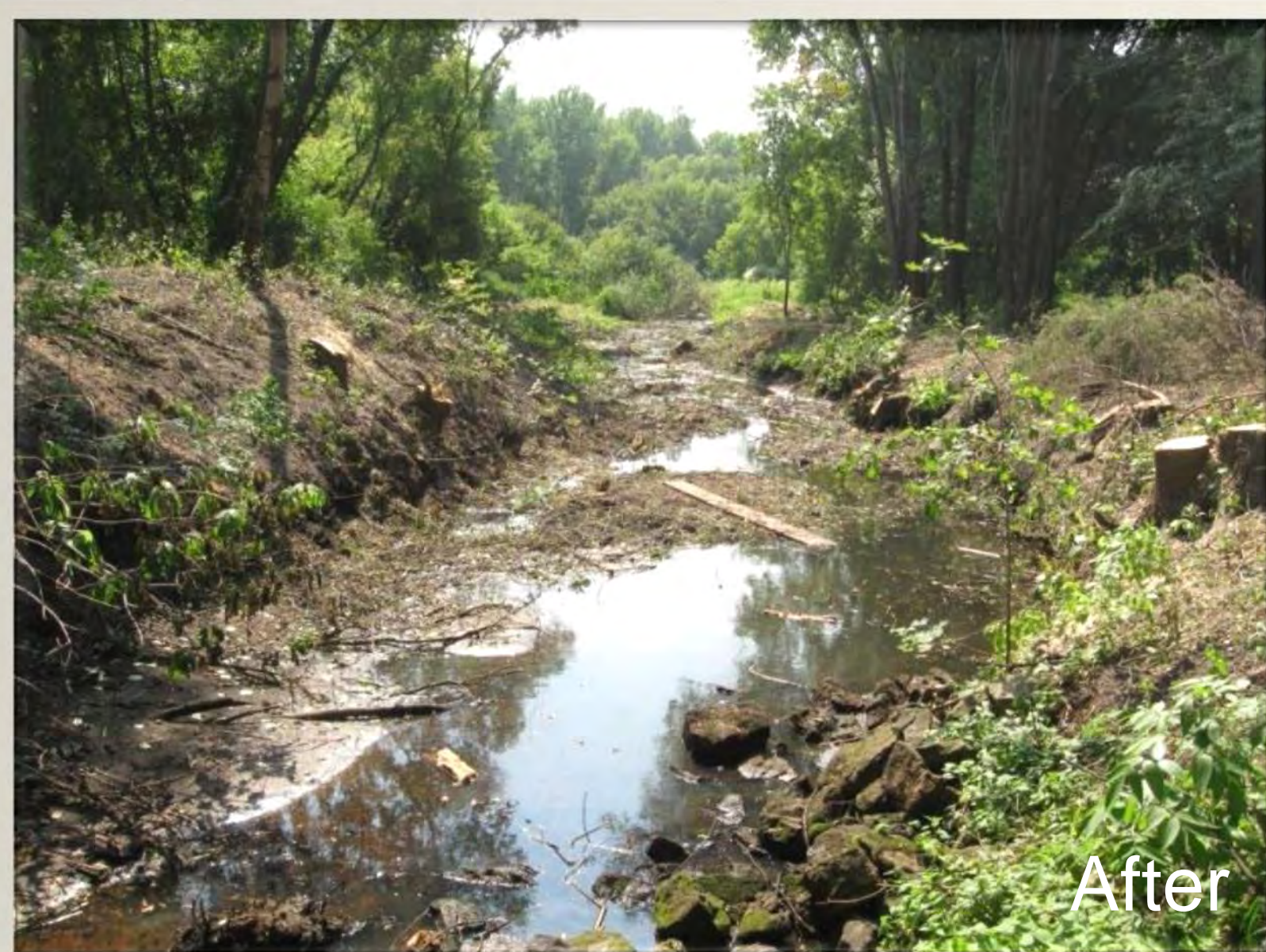


Invasive Species Removal & Habitat Improvement



Streambank Stabilization for Sediment Loss & Pollutant Reduction

Project Four: Resource Resiliency



Project Four: Resource Resiliency



Project Four: Resource Resiliency



THANK YOU FROM

Ramsey

Conservation District



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