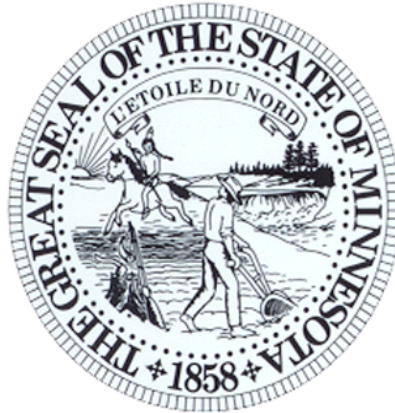




Legislative Coordinating Commission

Legislative Water Commission



Testimony from the Minnesota Cities Stormwater Coalition

Stormwater Infrastructure Challenges

by Jim Hafner, City of Blaine

Chair, MCSC Steering Committee

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Minnesota Cities Stormwater Coalition



“Traditional” stormwater

- **Quantity**

- Flooding
- Protecting downstream properties from water impacts from upstream
- Moving water out as quickly as possible

Cities have been doing this largely on their own for a long time

- We know how to do it well
- Quantity estimates, calculations, and computer modeling are fairly “well-behaved” and predictable
- Many cities have full-system quantity computer models – powerful tools
- Piping systems are designed to convey the 5 – 10 year storms
- Structures next to lakes, wetlands, and streams are designed to be safe to beyond the 100 year storms
- We have overflow storage and overland conveyance for extreme storm events
- Funded through stormwater utilities or general funds
 - Stormwater utilities are a real success story in Minnesota
 - State law supports stormwater utilities – similar to drinking water & wastewater utilities
 - They are simple and inexpensive to implement here
 - Western Kentucky University survey – **Minnesota has more stormwater utilities than any other state in the U.S.**

State has had only a relatively small role

- Funding support after extreme storm events – property damage
- Provide good science and climate data

Challenges

- **More rainfall coming during intense storms**
 - Atlas 14 – National Oceanic & Atmospheric Administration (NOAA)
 - Updated **historical** precipitation data
 - Replaced Technical Paper 40 – from 1961
 - Small storms are relatively unchanged
 - Large storms are more intense
 - Twin Cities – 100-year, 24-hour storm went from about 6” to about 8”
 - Some short duration intense storms are causing problems for public safety and property
 - Climate change predictions call for this trend to continue
- This means greater stress on city stormwater systems
 - See “super storms” of recent years and the associated damages – Duluth, Eagan, & others
- **The State should support city analytic work to predict impacts and vulnerabilities**
 - Update full-system models
 - Support new full-system models where they do not exist
 - Look for vulnerabilities and address them before they fail during an extreme event

Relatively new world of water quality and stormwater

Stormwater runoff (urban and rural) is now the **largest source of water pollution** in the United States

Cities recognize that:

- We contribute a significant share of the pollution loading
- We can do better – the technology and techniques are known and proven
- We should do better – we should build responsibly

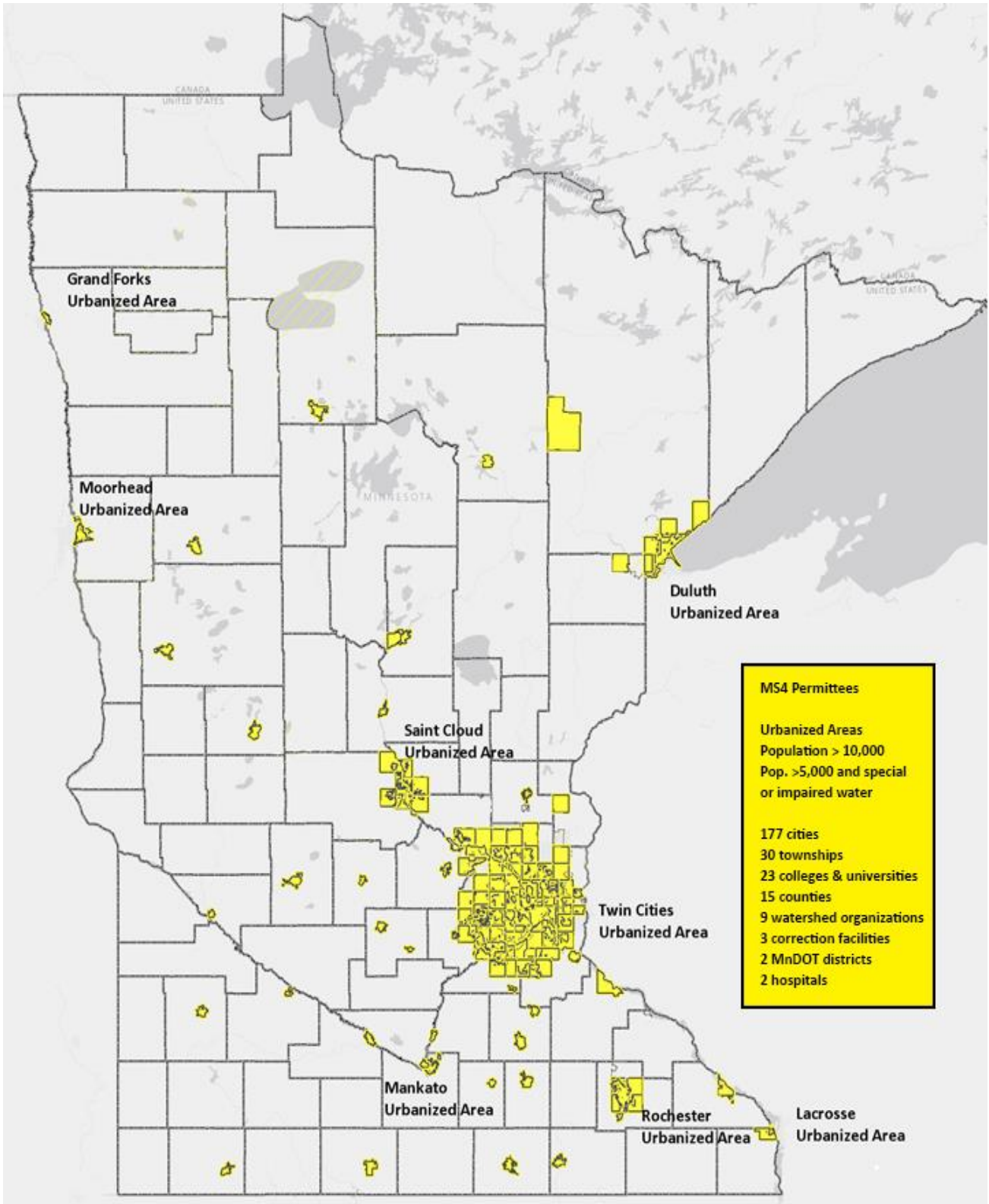
Very briefly

- Urbanization results in new impervious areas on the landscape
 - Paving, roofs, compacted soils
- Dirt and chemicals wash off of these surfaces and into receiving waters
 - Consider how filthy and polluted roads and parking lots are
- Water that used to infiltrate into the soil now washes off much more quickly
 - These “flashier” flows stress aquatic systems
 - Damage stream beds and banks
 - Diminish aquatic life diversity and vitality

These concerns resulted in regulations at all levels of government

- USEPA – The Clean Water Act
- States – Stormwater permitting – MS4s, construction sites, industrial sites
 - **M**unicipal **S**eparate **S**torm **S**ewer **S**ystems
- Watershed organizations
- Cities became local regulators, in addition to having their work regulated
 - We are responsible for how things are built in our jurisdictions

Map of MS4 Cities Urbanized Areas Labeled



Minnesota Cities with MS4 Permits - 177

Albert Lea	Detroit Lakes	Isanti	New Hope	Skyline
Albertville	Dilworth	La Crescent	New Ulm	South St. Paul
Alexandria	Duluth	Lake City	Newport	Spring Lake Park
Andover	Eagan	Lake Elmo	North Branch	Spring Park
Anoka	Eagle Lake	Lakeville	North Mankato	St. Anthony Village
Apple Valley	East Bethel	Landfall	North Oaks	St. Augusta
Arden Hills	East Grand Forks	Lauderdale	North St. Paul	St. Bonifacius
Austin	Eden Prairie	Lexington	Northfield	St. Cloud
Baxter	Edina	Lilydale	Nowthen	St. Francis
Bayport	Elk River	Lino Lakes	Oak Grove	St. Joseph
Bemidji	Elko New Market	Litchfield	Oak Park Heights	St. Louis Park
Big Lake	Excelsior	Little Canada	Oakdale	St. Michael
Birchwood Village	Fairmont	Little Falls	Orono	St. Paul
Blaine	Falcon Heights	Long Lake	Osseo	St. Paul Park
Bloomington	Faribault	Loretto	Otsego	St. Peter
Brainerd	Farmington	Mahtomedi	Owatonna	Stillwater
Brooklyn Center	Fergus Falls	Mankato	Pine Springs	Sunfish Lake
Brooklyn Park	Forest Lake	Maple Grove	Plymouth	Tonka Bay
Buffalo	Fridley	Maple Plain	Prior Lake	Vadnais Heights
Burnsville	Gem Lake	Maplewood	Proctor	Victoria
Cambridge	Glencoe	Marshall	Ramsey	Waconia
Carver	Golden Valley	Medicine Lake	Red Wing	Waite Park
Centerville	Grand Rapids	Medina	Redwood Falls	Waseca
Champlin	Grant	Mendota	Richfield	Wayzata
Chanhausen	Greenwood	Mendota Heights	Robbinsdale	West St. Paul
Chaska	Ham Lake	Minneapolis	Rochester	White Bear Lake
Circle Pines	Hanover	Minnetonka	Rogers	Willernie
Cloquet	Hastings	Minnetonka Beach	Rosemount	Willmar
Columbia Heights	Hermantown	Minnetrista	Roseville	Winona
Coon Rapids	Hibbing	Montevideo	Sartell	Woodbury
Corcoran	Hilltop	Monticello	Sauk Rapids	Woodland
Cottage Grove	Hopkins	Moorhead	Savage	Worthington
Crystal	Hugo	Morris	Scott County	Wyoming
Dayton	Hutchinson	Mound	Shakopee	
Deephaven	Independence	Mounds View	Shoreview	
Dellwood	Inver Grove Heights	New Brighton	Shorewood	

MS4 Permit Requirements

Local regulatory mechanisms

- **We control how things are built in our jurisdictions**

Enforcement response procedures

Lots of various types of Best Management Practices (BMPs)

Linkage to TMDL Waste Load Allocations (WLAs)

- Demonstrated progress toward meeting the WLA
- Estimated load reductions and reporting

Six Minimum Control Measures

- Public Education & Outreach
- Public Participation/Involvement
- Illicit Discharge Detection & Elimination
- Construction Site Runoff Control
- Post-Construction Stormwater Management
- Pollution Prevention/Good Housekeeping for Municipal Operations

Annual Reporting

Local design standard requirements

- New development – no net increase from pre-project conditions for volume, total suspended solids, and phosphorus
- Redevelopment – net reduction
- Limitations, restrictions, exceptions – alternative compliance options

Pond assessments and maintenance protocols

- Assess constructed stormwater ponds to assure they are performing their water quality functions
- Dredge ponds where and when needed

Stormwater regulations are unlike most drinking water or wastewater permits

- Discharge points are everywhere – every city has hundreds or thousands of them
- Flow and pollutant loads are erratic
- Measuring flows and pollutants is difficult and expensive
- Cities become both regulated and regulators
- Stormwater is not a typical “polluter pays” issue – **We all contribute**

Thus, stormwater regulations are generally:

- Not numeric – legal standard for the MS4 permit is Maximum Extent Practicable
- Based on the implementation of **large** numbers of decentralized Best Management Practices (BMPs)
 - Structural and non-structural – rain gardens, street sweeping, school programs
 - 15,000 to 20,000 constructed stormwater ponds since the 1980s
 - We have one city with more than 800 rain gardens
- Iterative – we are still learning about what is safe, works best, and most cost-effective
- Reliant on public education and household & individual behavior change
 - Similar to recycling

We are getting into “scary” territory for city public works departments

- Large numbers of “green infrastructure” BMPs
- Huge long-term operations & maintenance responsibilities
- Just tracking, inspecting, and reporting on all the BMPs is a significant burden
- Some BMPs are expensive and complicated – e.g.: underground vaults
- Retrofit in already-developed areas is expensive and challenging – especially for road projects
- The regulations reach a long way into the operations of city public works departments
- **Managing urban stormwater is increasingly expensive**

What we need from the State

- **Flexible and common sense regulations** – recognize the “state of the art” in stormwater and our limitations
- **Support urban stormwater research – CURRENT ISSUE**
 - The Clean Water Council’s recommendation for the Clean Water Fund
 - The University of Minnesota is doing excellent work in this area. It should be continued and expanded.
 - We still have much to learn and safety and cost-effectiveness
- Movement from the MPCA to resolve problems with PAHs in stormwater pond sediments
 - **The state-wide ban is a huge step forward – THANK YOU**
 - We still have a legacy problem
 - MPCA has a rough cost estimate of \$1 to \$5 billion
 - We need research and demonstration projects to arrive at solutions
- **Promote solutions – don’t put up new barriers – CURRENT ISSUE**
 - We are concerned about the DNR and MDH making stormwater reuse prohibitively difficult to implement at a wide scale
- Continue support for the Minnesota Stormwater Manual
 - This is a hugely useful reference produced and maintained by the MPCA
- Support the engagement of the community of stormwater stakeholders and practitioners in all aspects of regulations
 - The MPCA should not just promulgate and administer permits
 - The knowledge and experience of all practitioners is needed to arrive at good resolutions
- Find reasonable approaches for TMDL compliance
 - **Total Maximum Daily Loads**
- Continue and expand funding for city stormwater projects
 - We are working with the MPCA, BWSR, and the PFA to make the stormwater funding programs more effective
 - Don’t just fund watershed organizations and SWCDs. **Include funding for entities with permits**
- Help us with support for public education and behavior change
 - Everyone needs to be engaged to solve these challenges
 - **We cannot have local regulations get too far beyond public knowledge and support**
- Resolve two language and definition issues
 - Stormwater is non-point pollution in reality, but it is defined as point source pollution because of the permits
 - Constructed stormwater ponds and constructed stormwater wetlands should not be defined and regulated as Waters of the State (MPCA & DNR)
 - This issue was resolved in the recent new federal Waters of the United States rulemaking
- Support for work to address more intense storms
 - Affects both stormwater quantity & quality

Urban stormwater is a legitimate problem and deserves attention. Please recognize that the regulations place an unfunded mandatory burden on cities. We are willing to bear this burden, but we hope the State will pick up its share and work with us.