Information Item:

Comprehensive Water Quality Assessment of Select Metropolitan Area Streams

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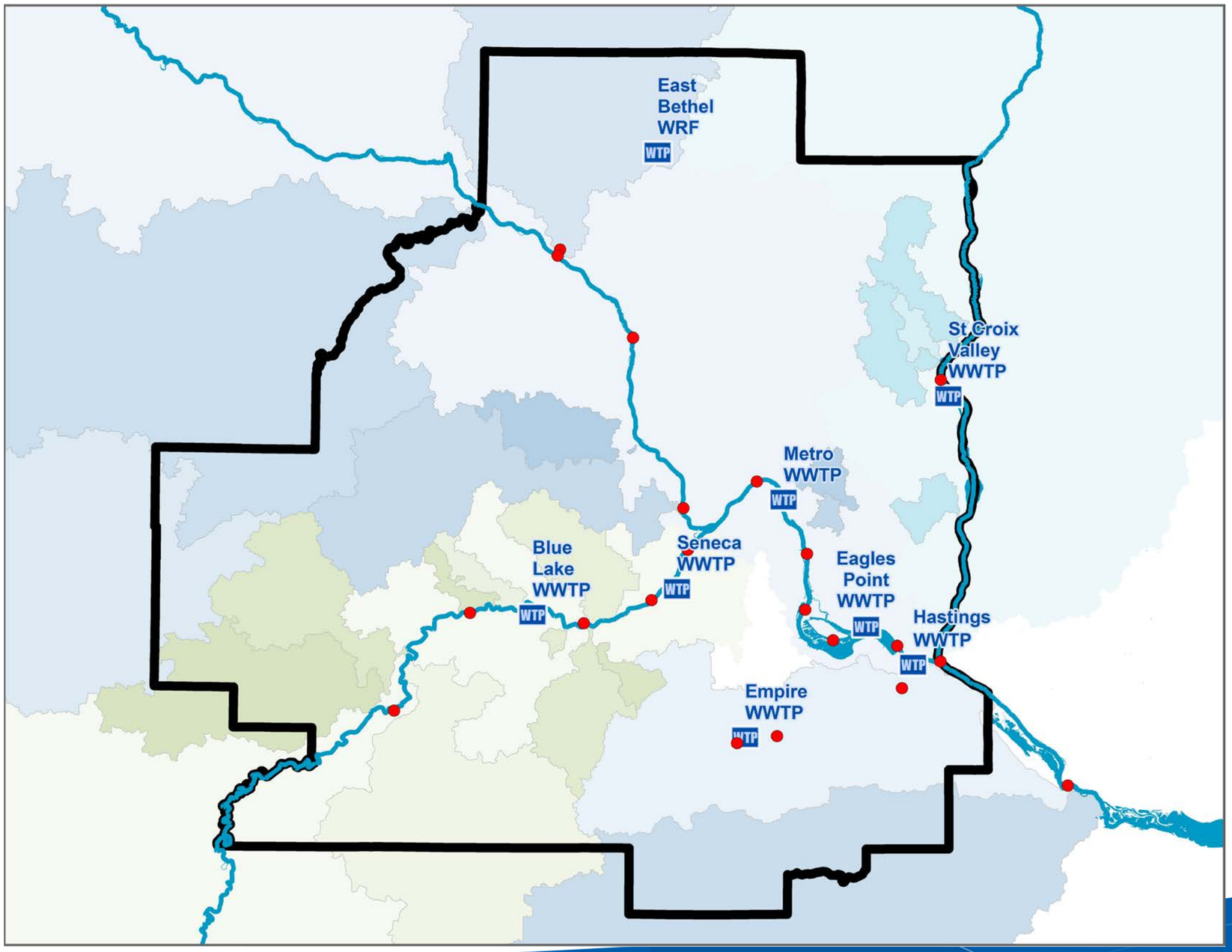
Environment Committee: October 27, 2015

Background:
MCES Monitors Wastewater Treatment Plants and Major Rivers



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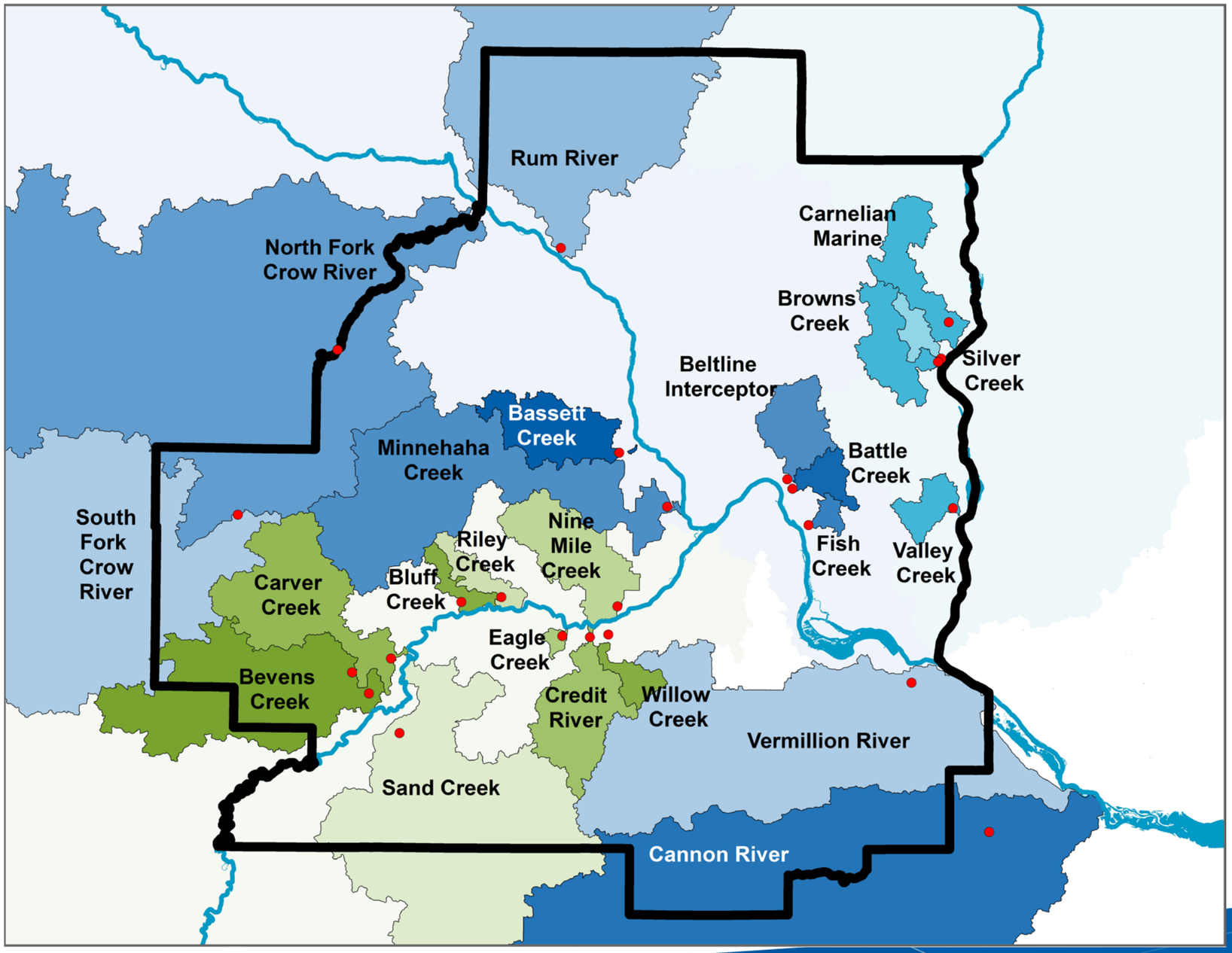
Monitoring:
MCES Began Monitoring Streams Draining to Major Rivers in 1989



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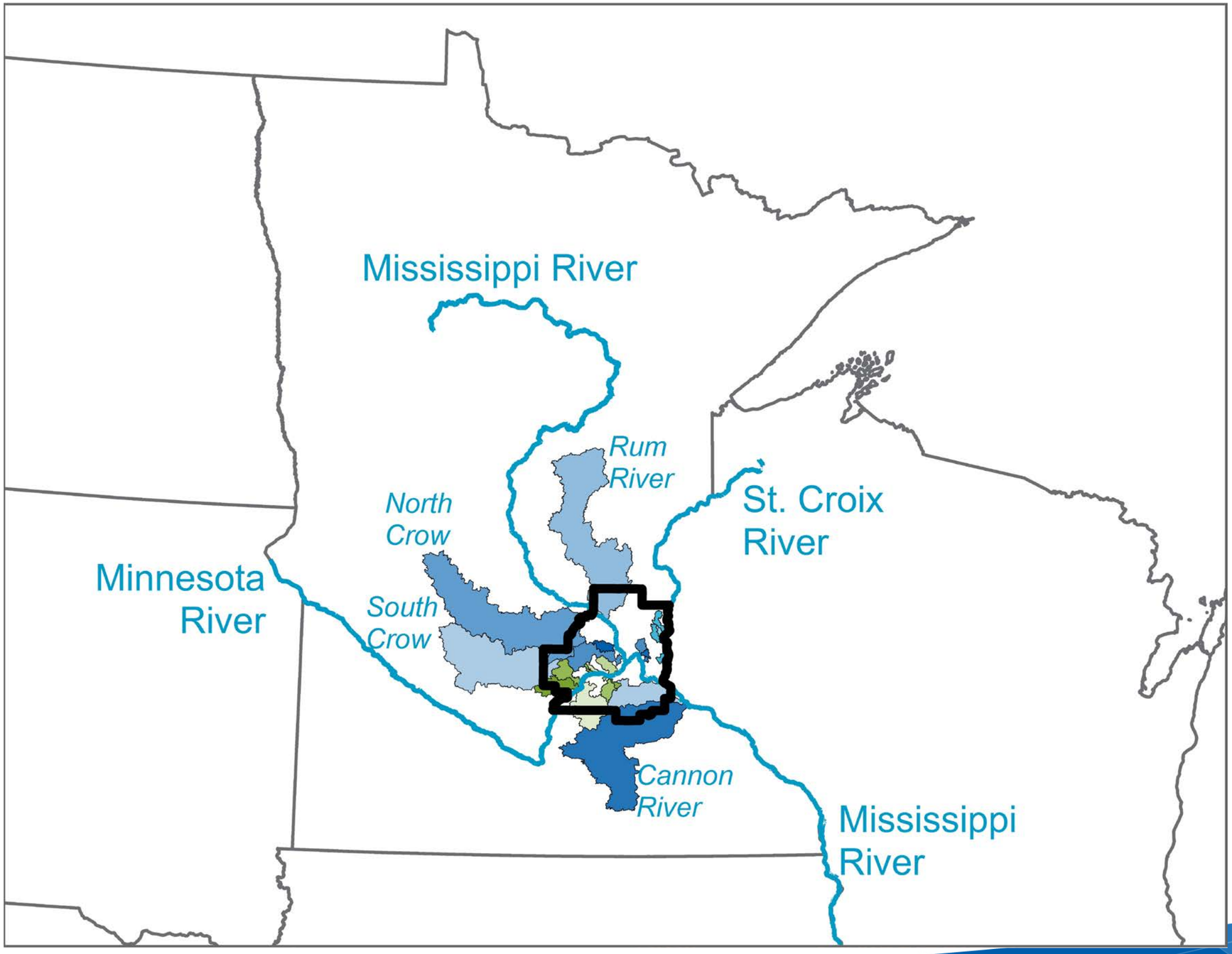
Stream Watersheds:
8% of Minnesota, 50% of the Metropolitan Area



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Stream Watersheds Vary Greatly in Size

- Eagle Creek = 2 square miles
- Crow River = 3,600 square miles
  (Seven-county Metro Area = 3,000 square miles)

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Unique in Quality and Character

- Three are MN State Water Trails / Canoe Routes

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Unique in Quality and Character

- Four are DNR Designated Trout Streams

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Areas of Special Ecological Significance

- Rum River has wild rice and rare plants
- Silver Creek has limestone springs and rare plants

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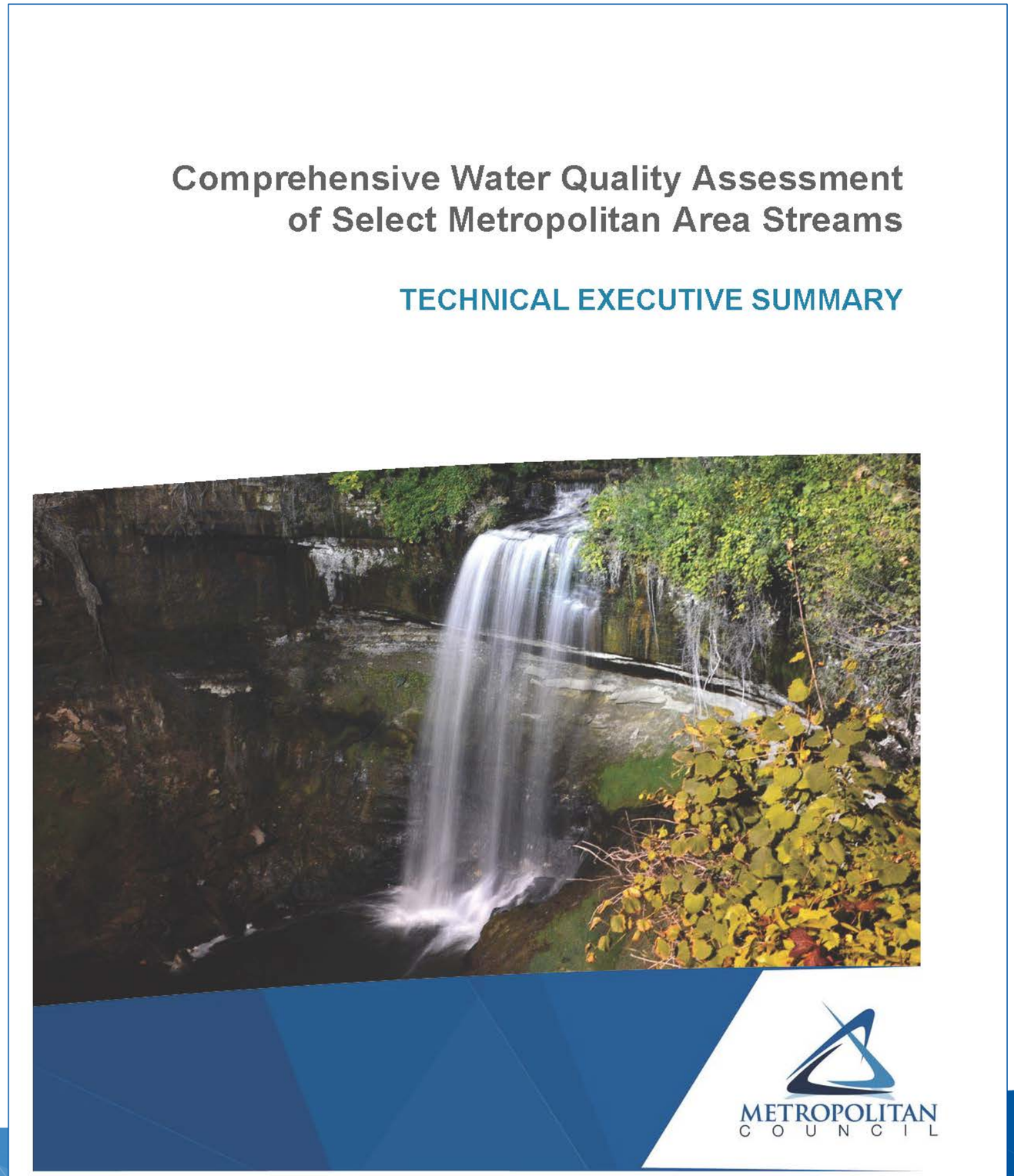
Varied Pollutant Sources

- Urban streams:
  - Affected by stormwater runoff from paved surfaces
- Rural streams:
  - Affected by runoff from fields, feedlots, and draintile systems
- About 90 small non-MCES municipal wastewater treatment plants discharge to streams:
  - 19 discharge to Cannon River
  - 39 discharge to Crow River
  - 17 discharge to Rum River
  - 4 discharge to Sand Creek

Web-Based Report



Includes:

- Plain Language Fact Sheets
- Individual Section for Each Stream
- Technical & Support Sections

www.metrocouncil.org/streams

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Data Collected

- 1989 – 2012: monitored 21 streams
- 9,000+ samples collected
- 54,000+ laboratory tests conducted at MCES lab
- Average flow collected each day
- Water samples evaluated for:
  - nutrients (phosphorus, nitrogen)
  - sediment
  - chloride (road salt)
  - beneficial water insects

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Comparing Water Quality

- In general, the highest nutrient (phosphorus and nitrogen) concentrations were found in agricultural streams

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Comparing Water Quality

- In general, the highest sediment concentrations in Minnesota river streams

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Comparing Water Quality

- In general, the highest chloride (road salt) concentrations in urban streams

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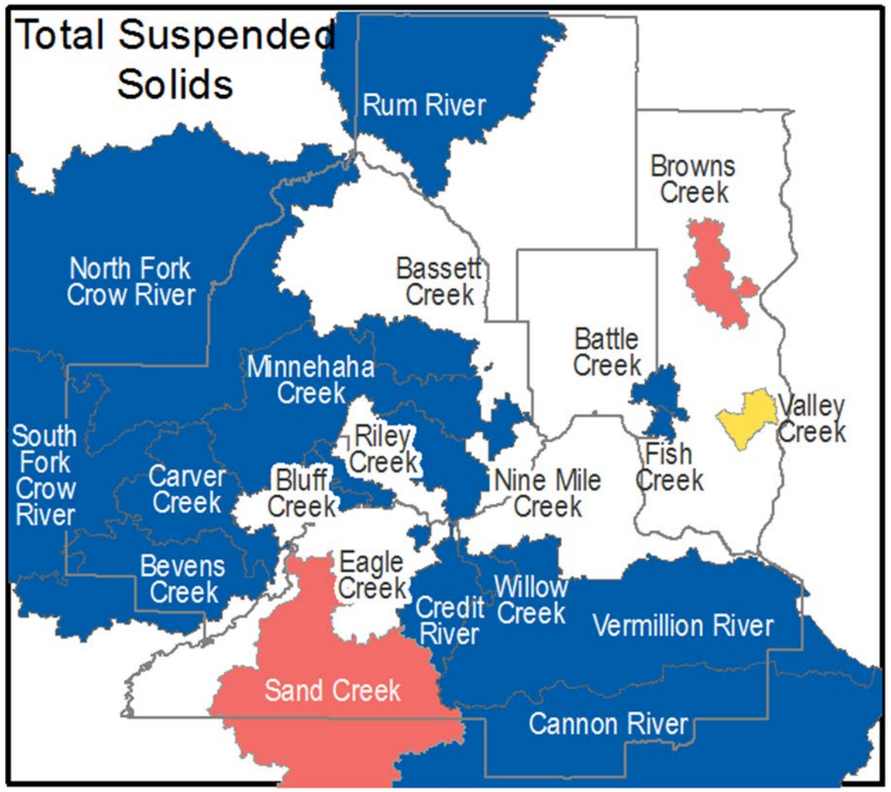
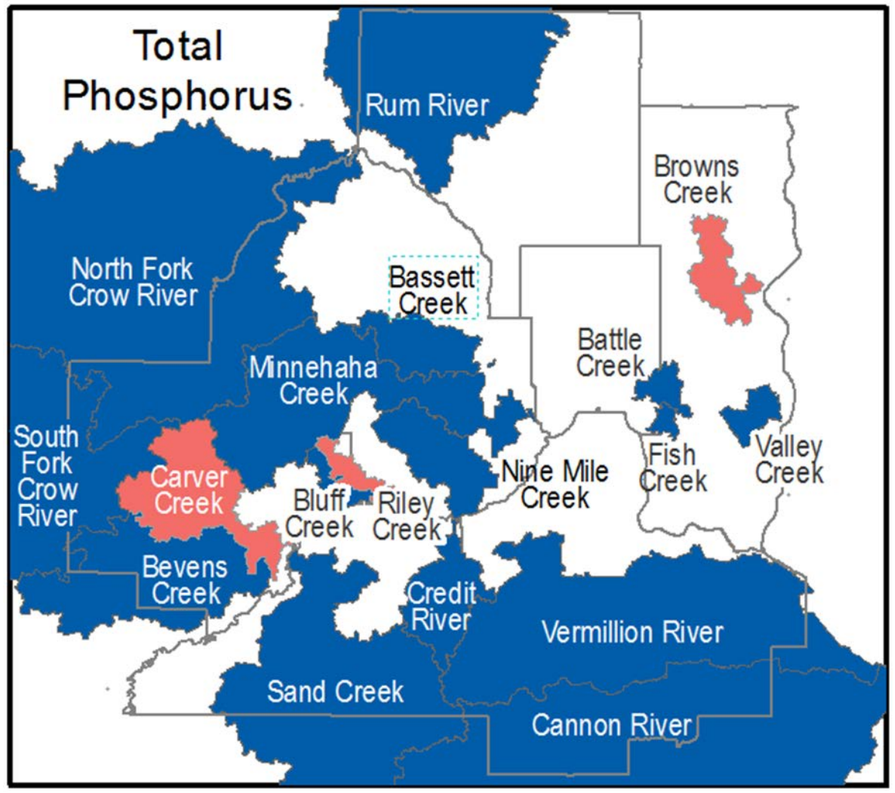
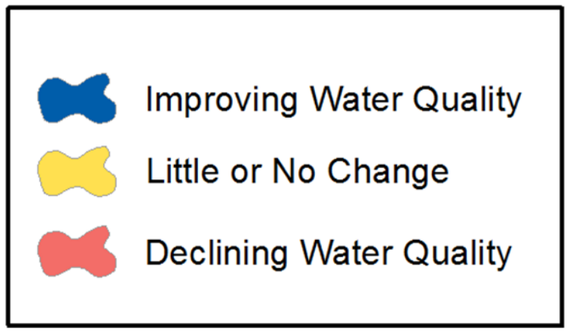
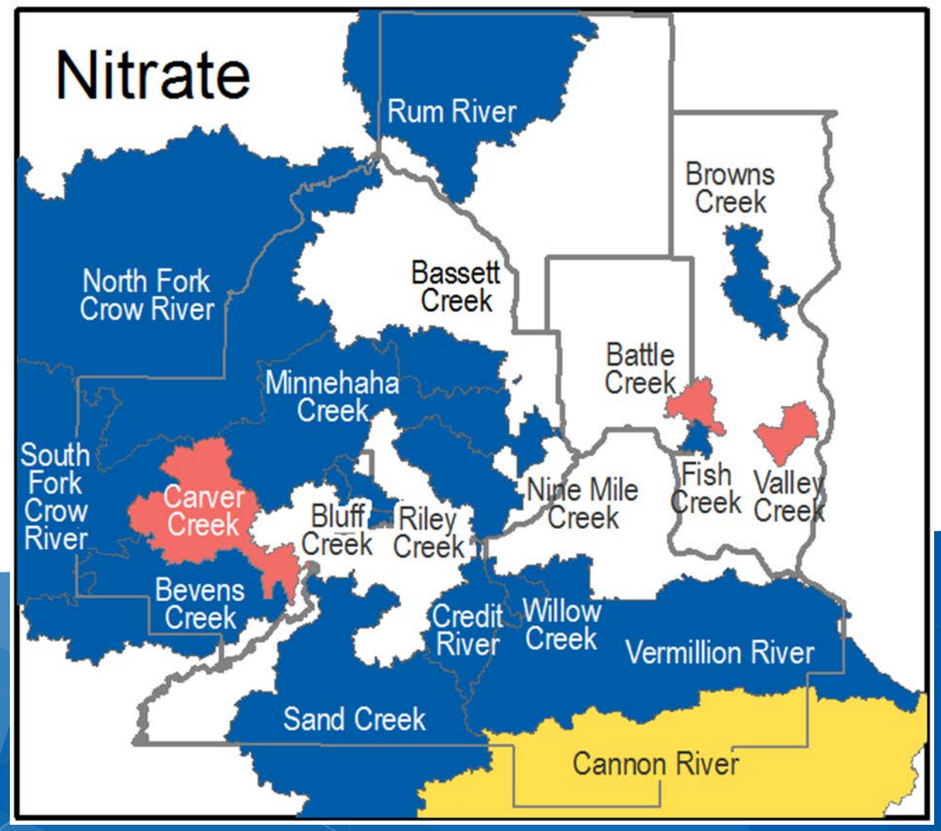
Key Finding: Water Quality Improvement Between 2008 and 2012









- Sediment, phosphorus, and nitrogen has improved in most streams

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Using the study results:

- Presenting results at local and national conferences
- Presenting results to state agencies, local water management organizations, and others
- Communicating results through newsletter articles and social media
- Working with regional partners to identify which practices are resulting in improved water quality
- Continuing to monitor streams
- Repeating trend analysis in five years
- Conducting a similar study using MCES river data

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Questions

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