Regional Water Quality Update (2012)

Metropolitan Council Environment Committee
February 11th, 2014

Judy Sventek, Manager
Water Resource Assessment

CLEAN WATER LAND & LEGACY AMENDMENT

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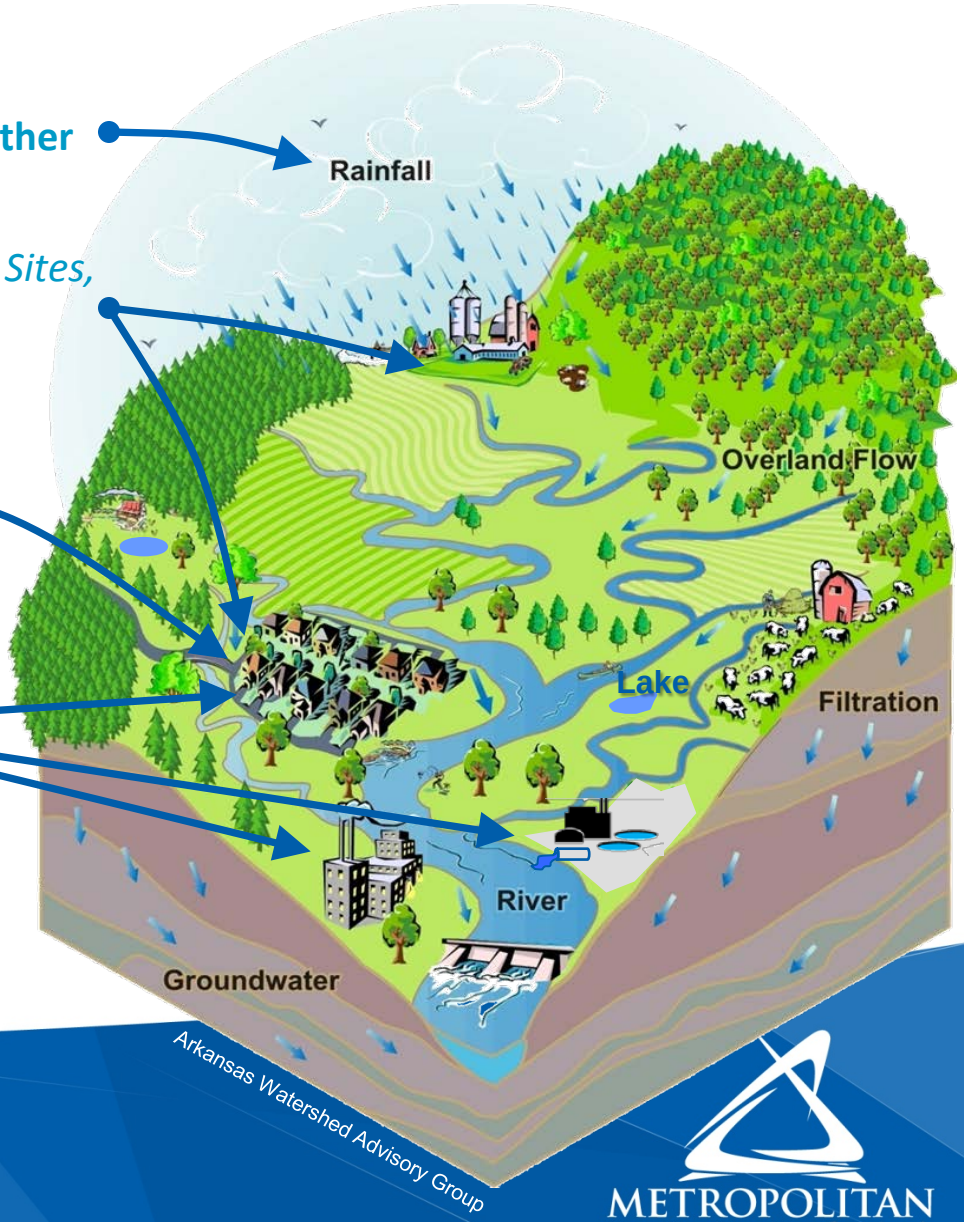
Factors Contributing to Water Quality

Weather

Nonpoint Sources
(*Parking Lots, Lawns, Farm Fields, Construction Sites, Bluff & Streambank Erosion***)**

Population Growth

Point Sources
(*WWTP, Industry, Storm Sewers***)**



Arkansas Watershed Advisory Group

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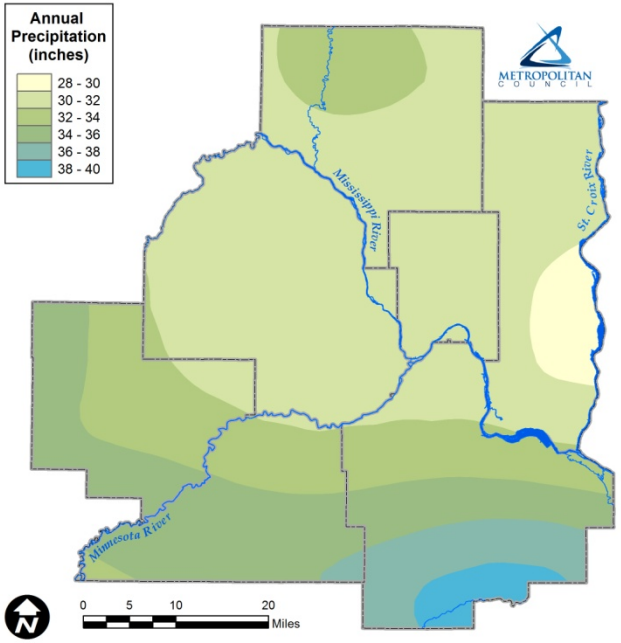
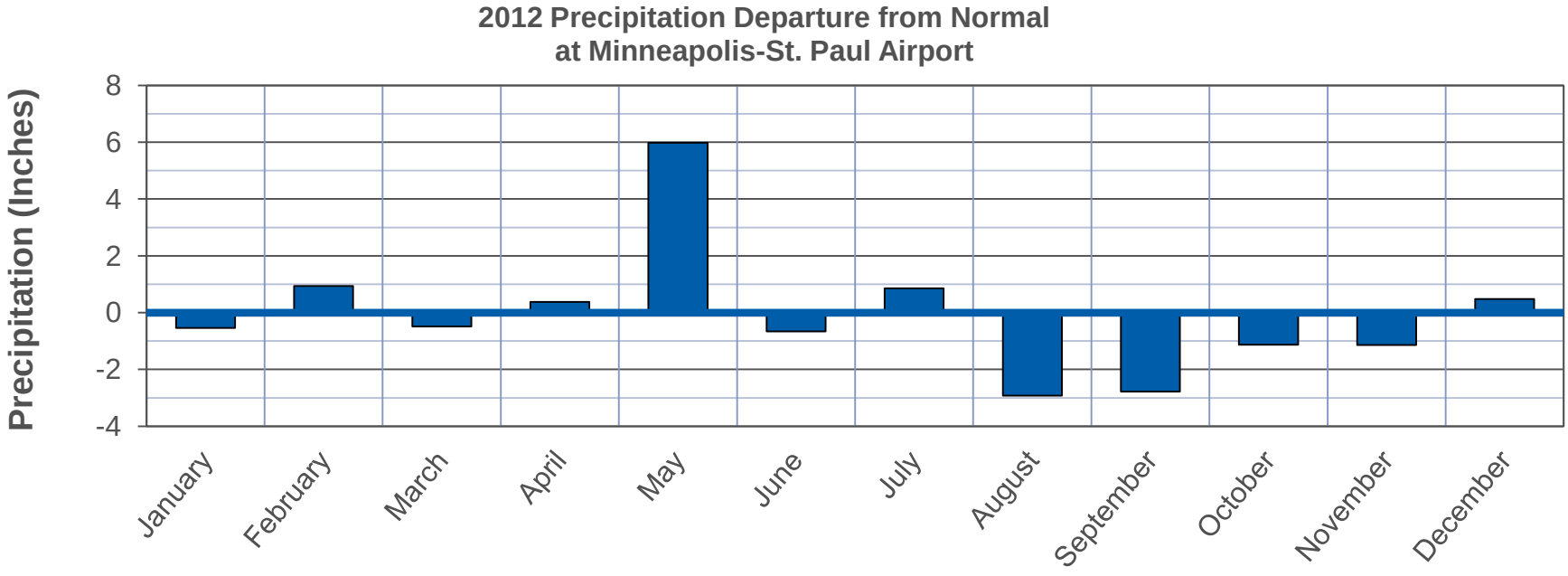
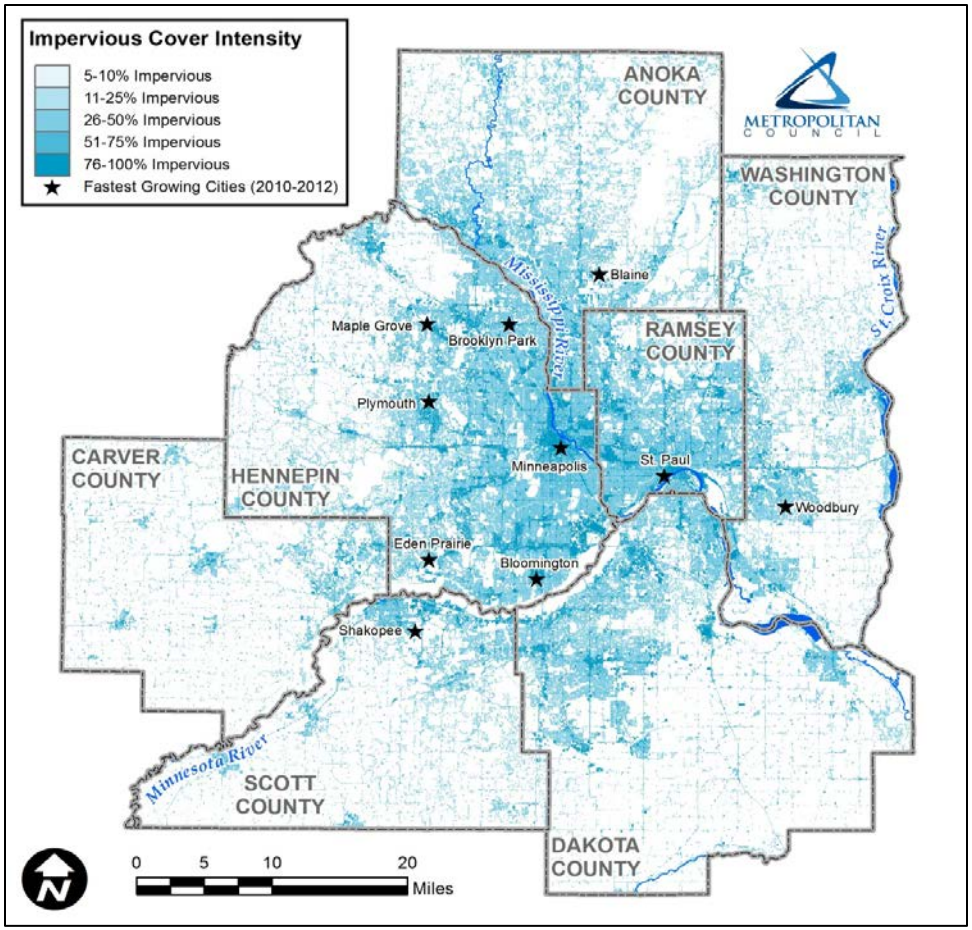
2012 Precipitation





Metropolitan Area Impervious Cover



2011 coverage analysis provided by University of Minnesota Remote Sensing Geospatial Laboratory

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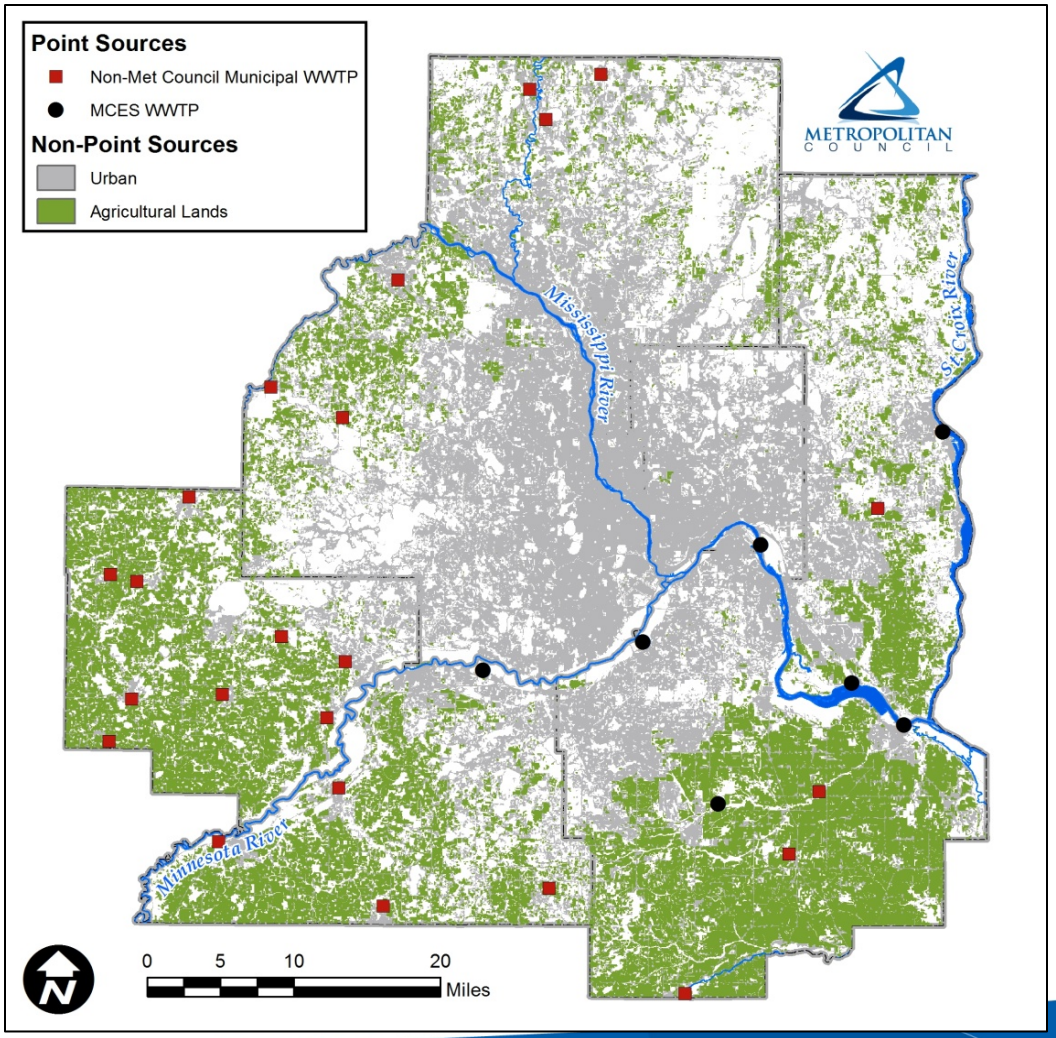
Metropolitan Area Point & Nonpoint Sources



Note: Other industrial and commercial point sources not shown.

2011 coverage analysis provided by University of Minnesota Remote Sensing Geospatial Laboratory

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Water Quality Assessment Nonpoint Source Pollutants

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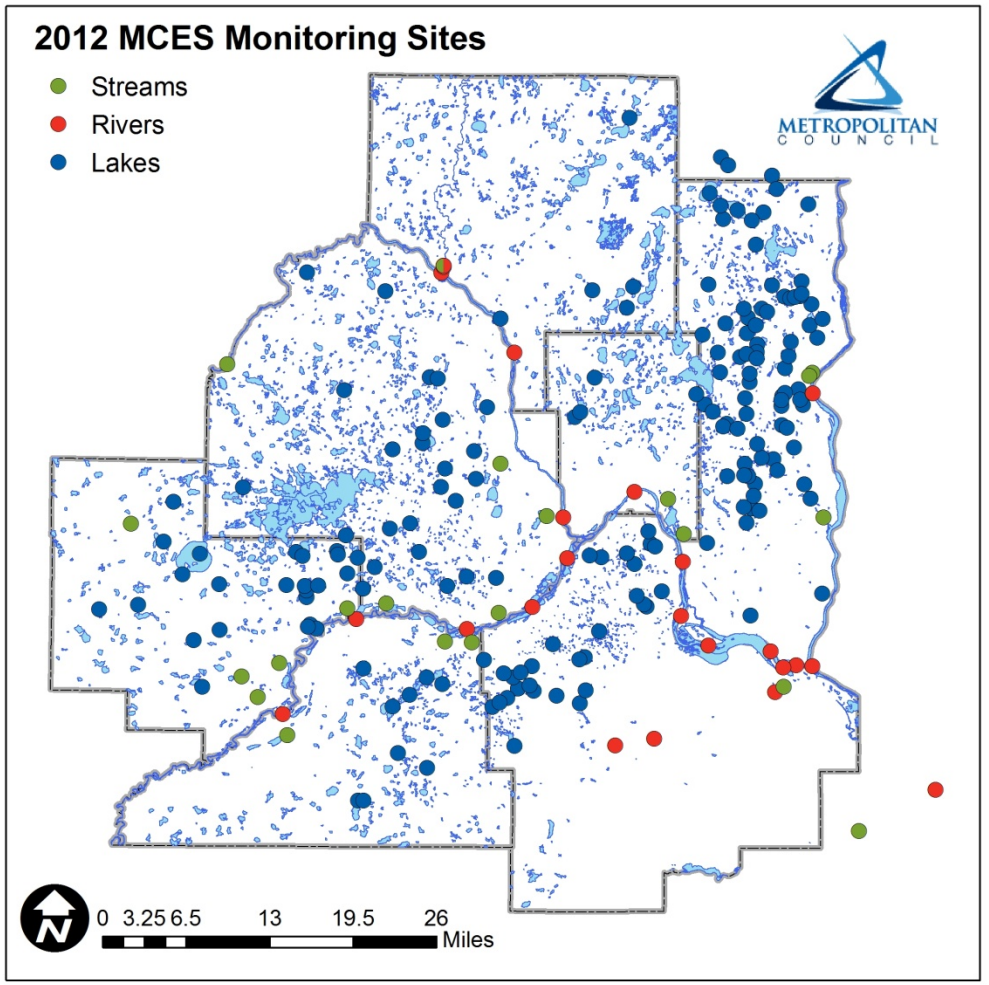
MCES Monitoring Sites

- 168 Lakes
- 21 Stream Sites
- 22 River Sites



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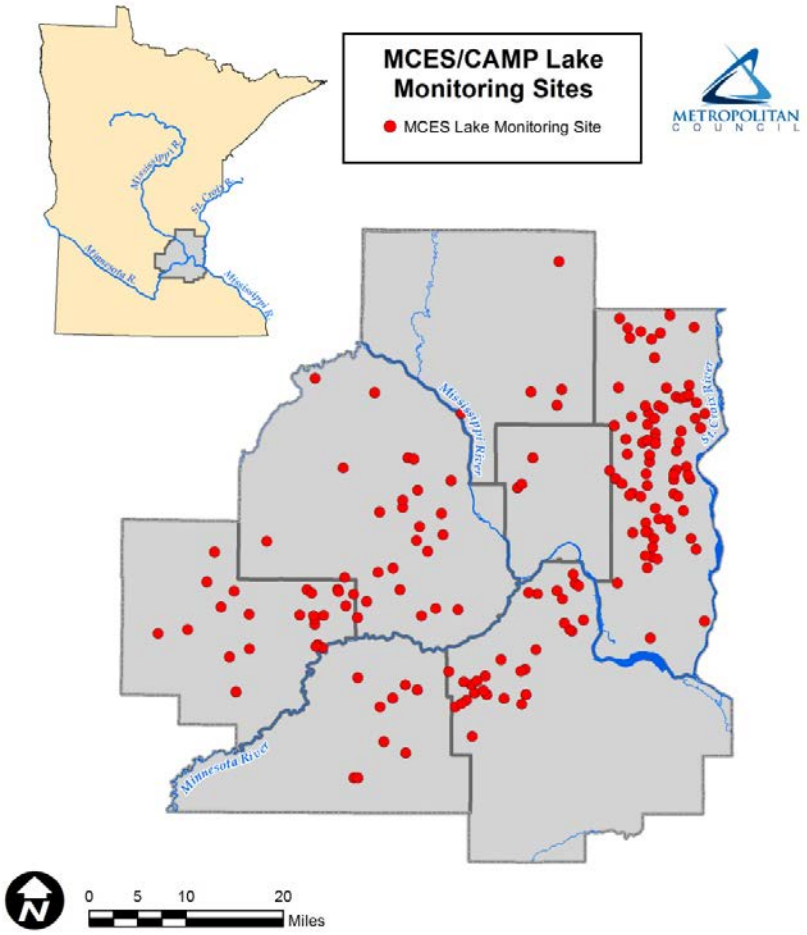
MCES Lake Program



- 125 citizen volunteers
- 171 CAMP lake sites on 162 lakes
- 6 MCES lakes were intensively monitored by MCES staff

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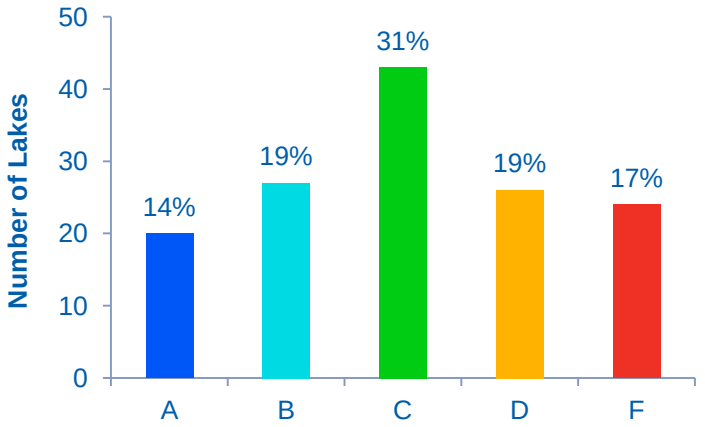
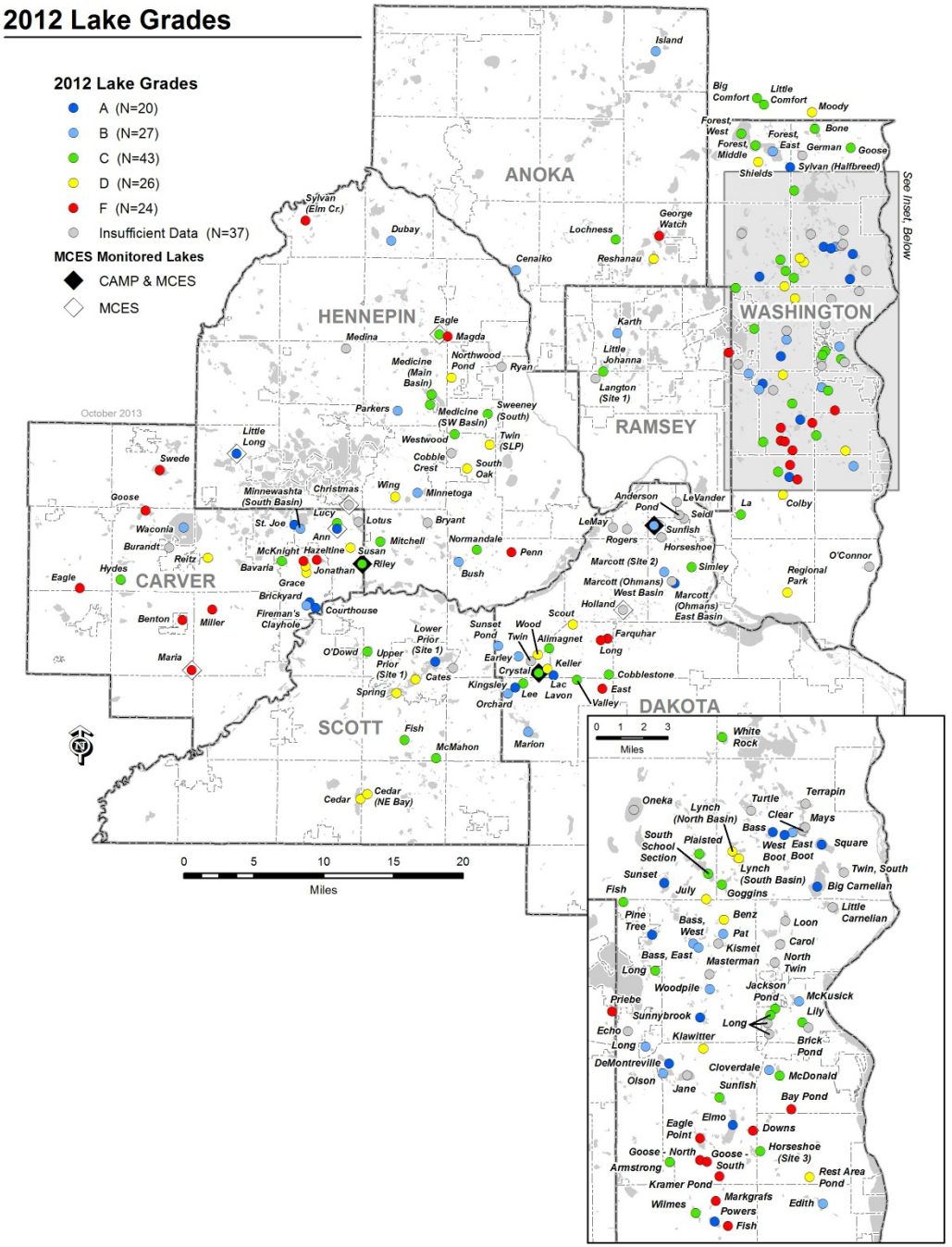
Lake Measurements / Pollutants

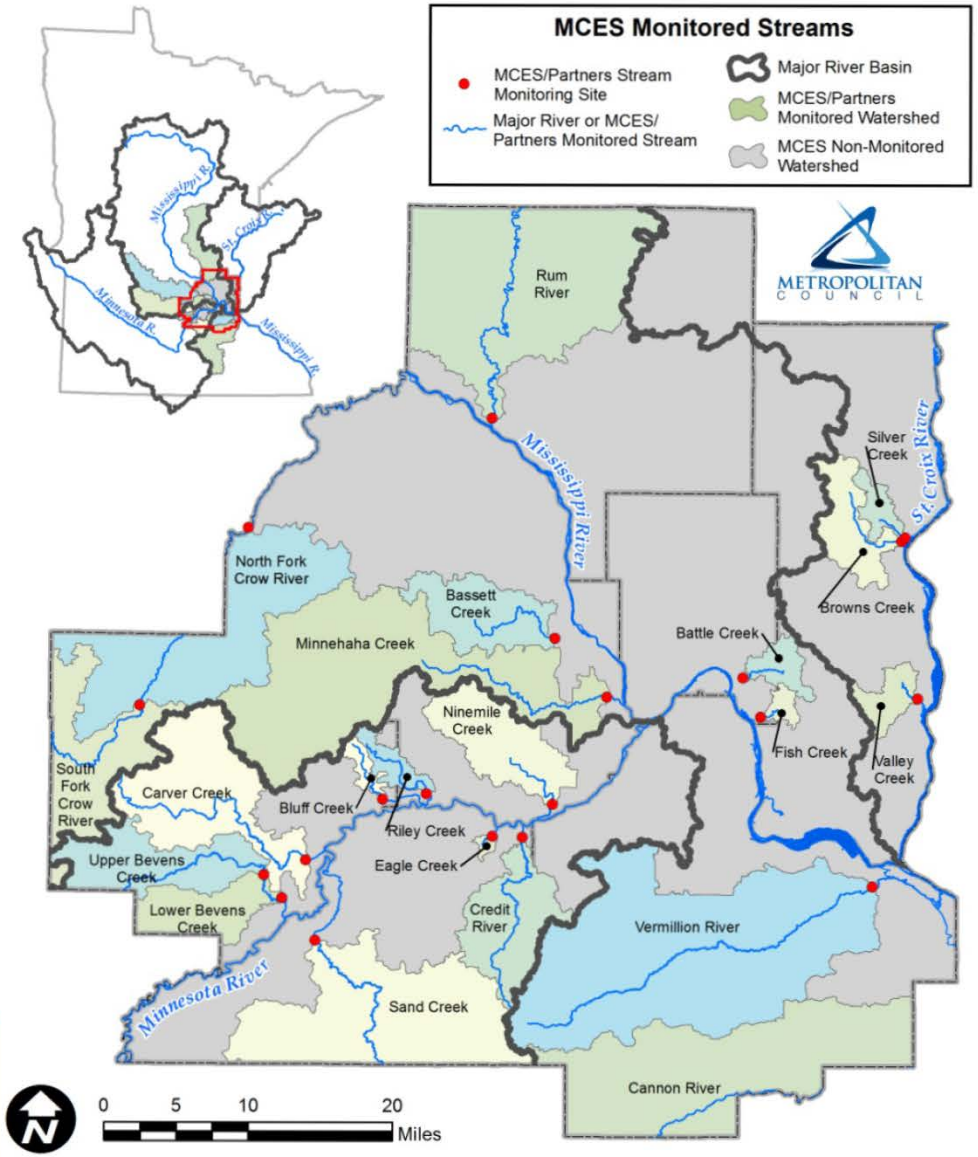
- Total Phosphorus (TP)
- Chlorophyll a (Chl a)
- Secchi Depth

2012 Lake Results





MCES Stream Program



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Selected Monitored River & Stream Pollutants

- Total Suspended Solids (TSS)
- Total Phosphorus (TP)
- Nitrate (NO_3)
- Chloride (Cl)

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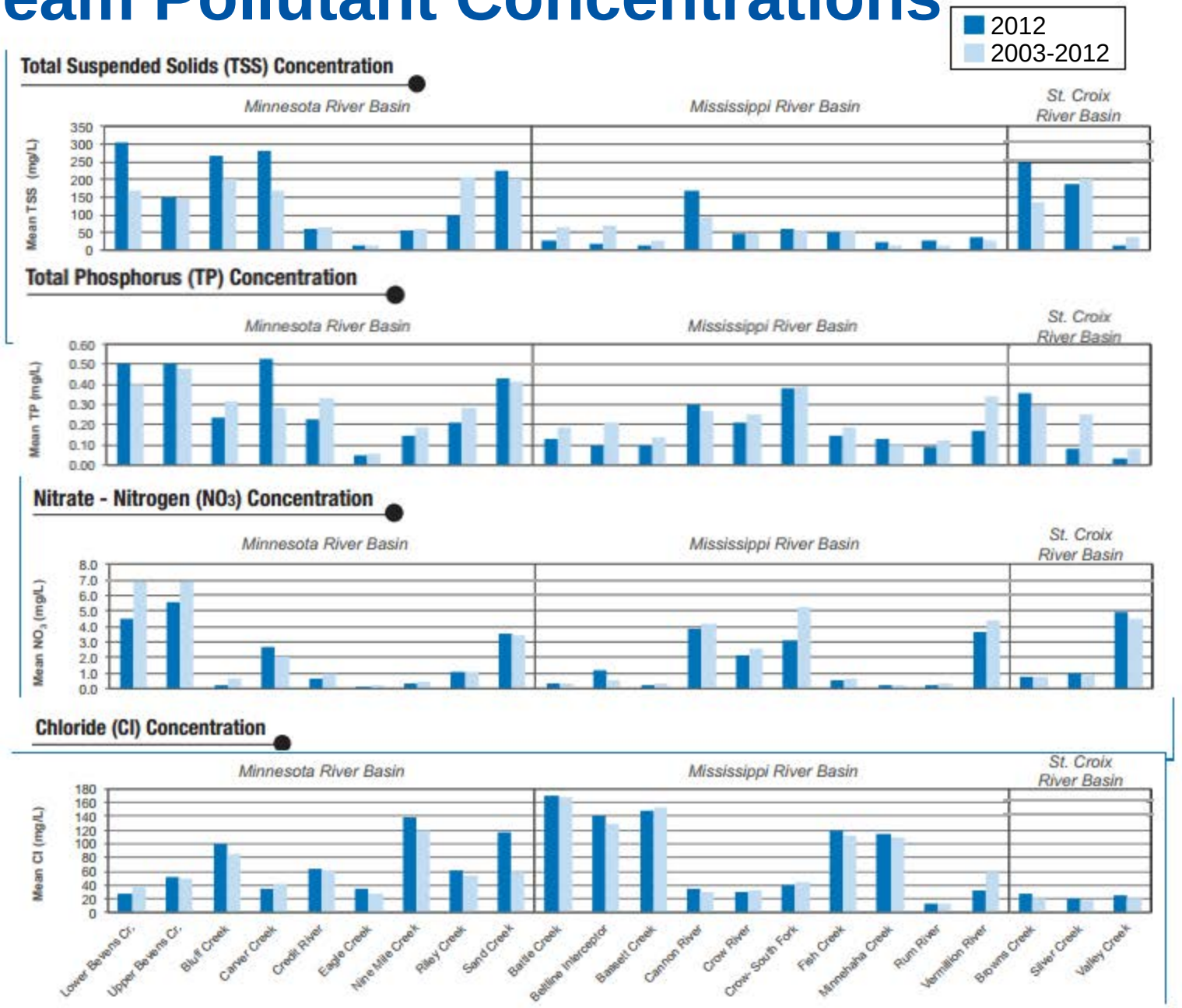
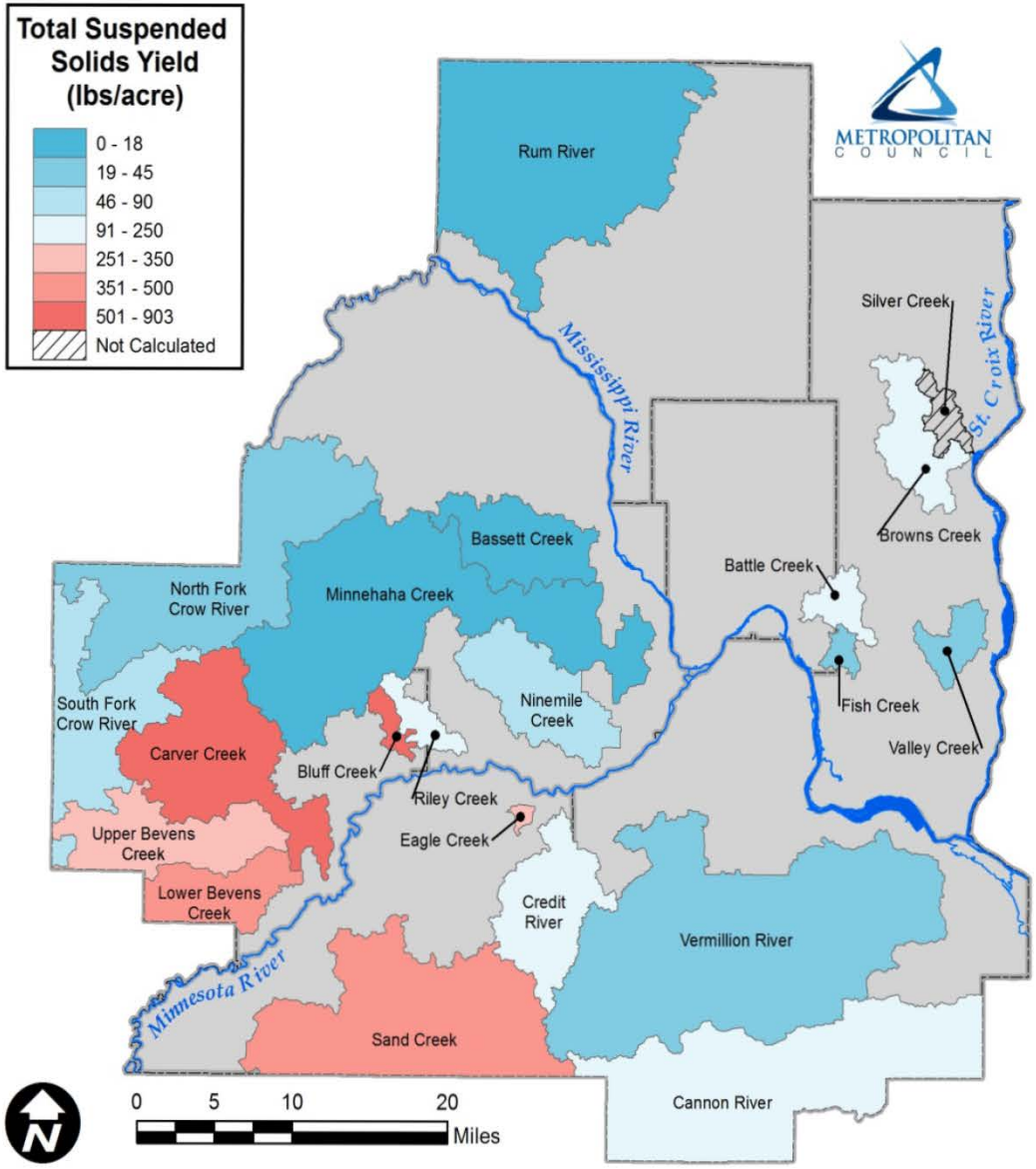
Stream Pollutant Concentrations



Stream Total Suspended Solids Loads



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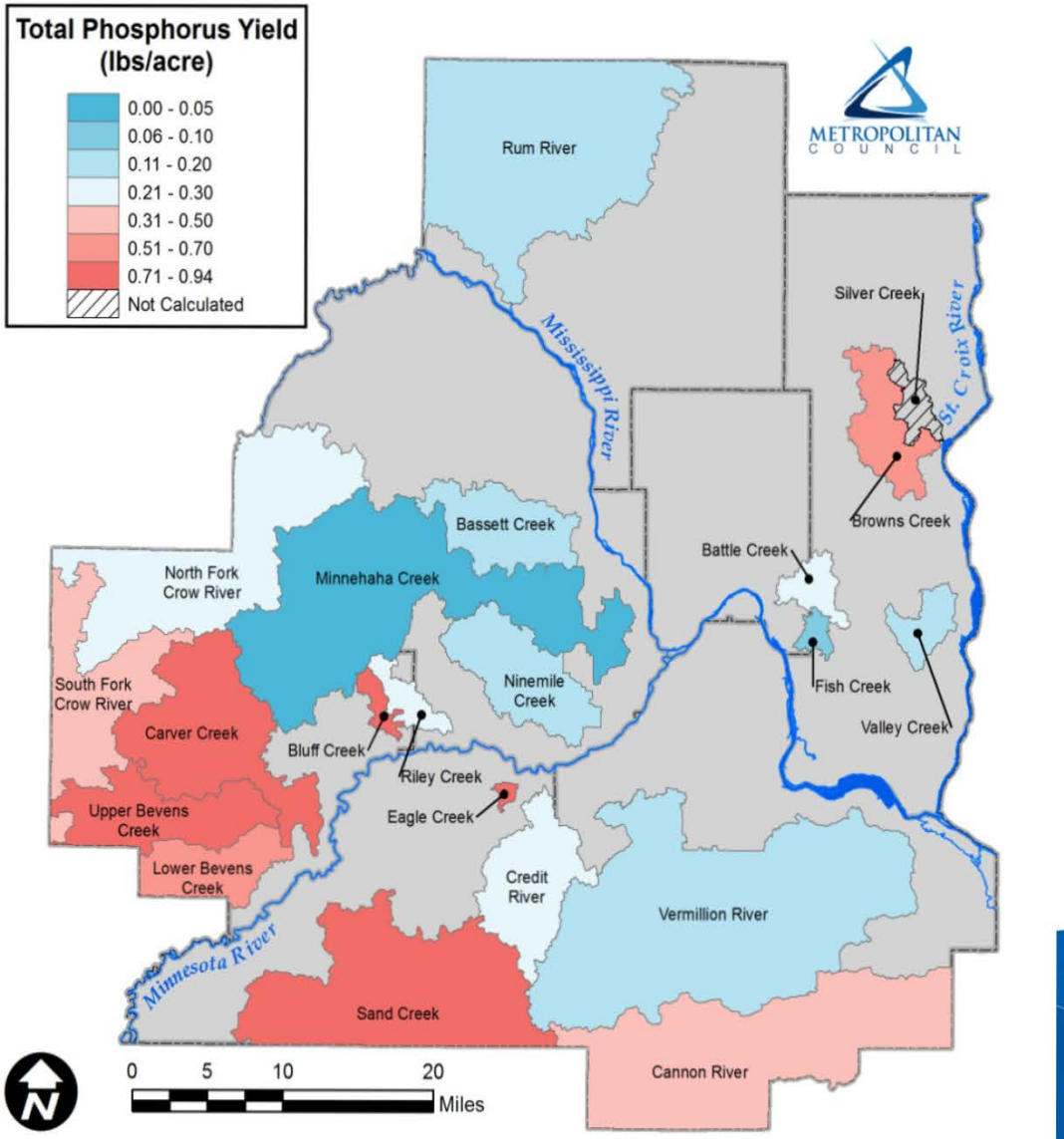
Stream Total Phosphorus Loads



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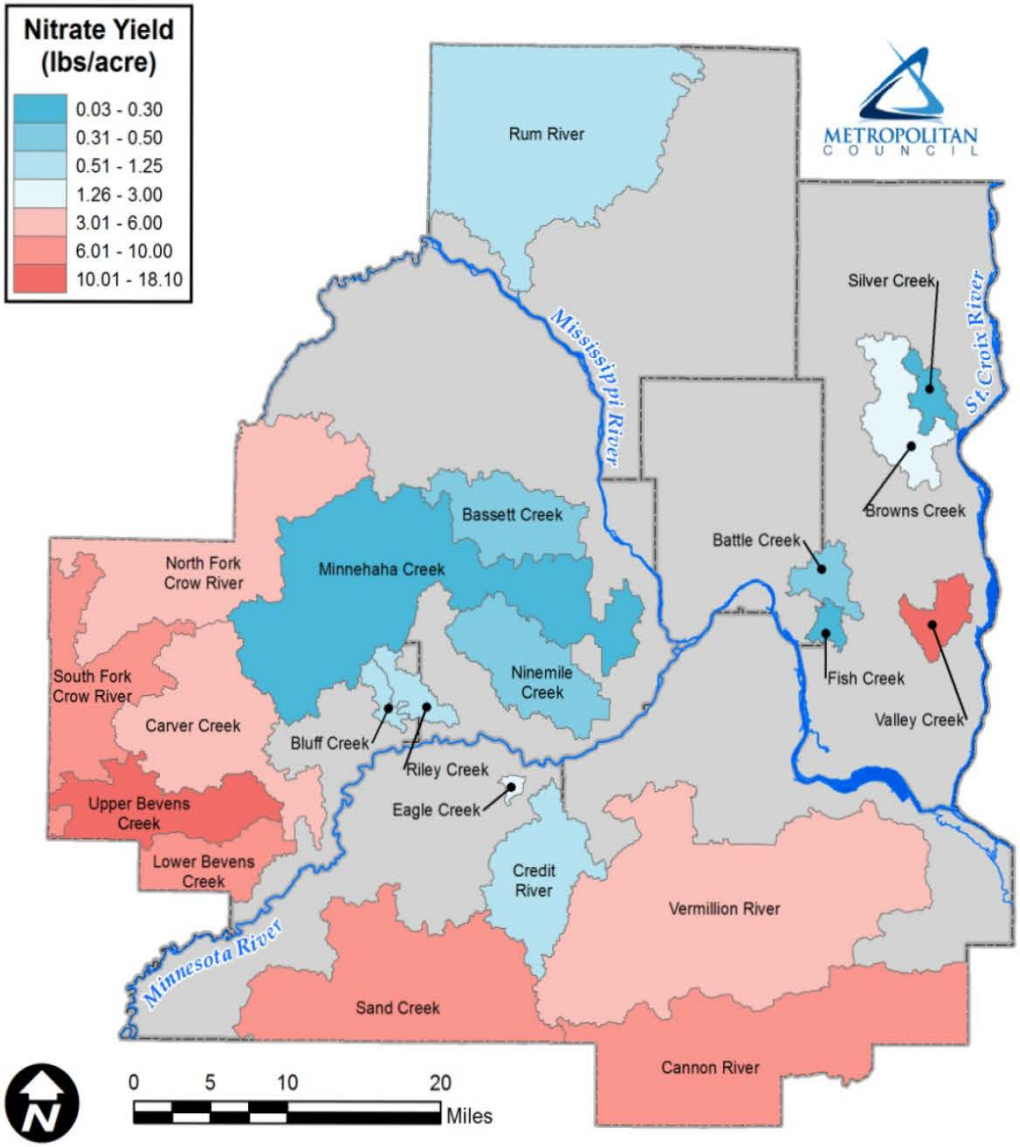
Stream Nitrate Loads



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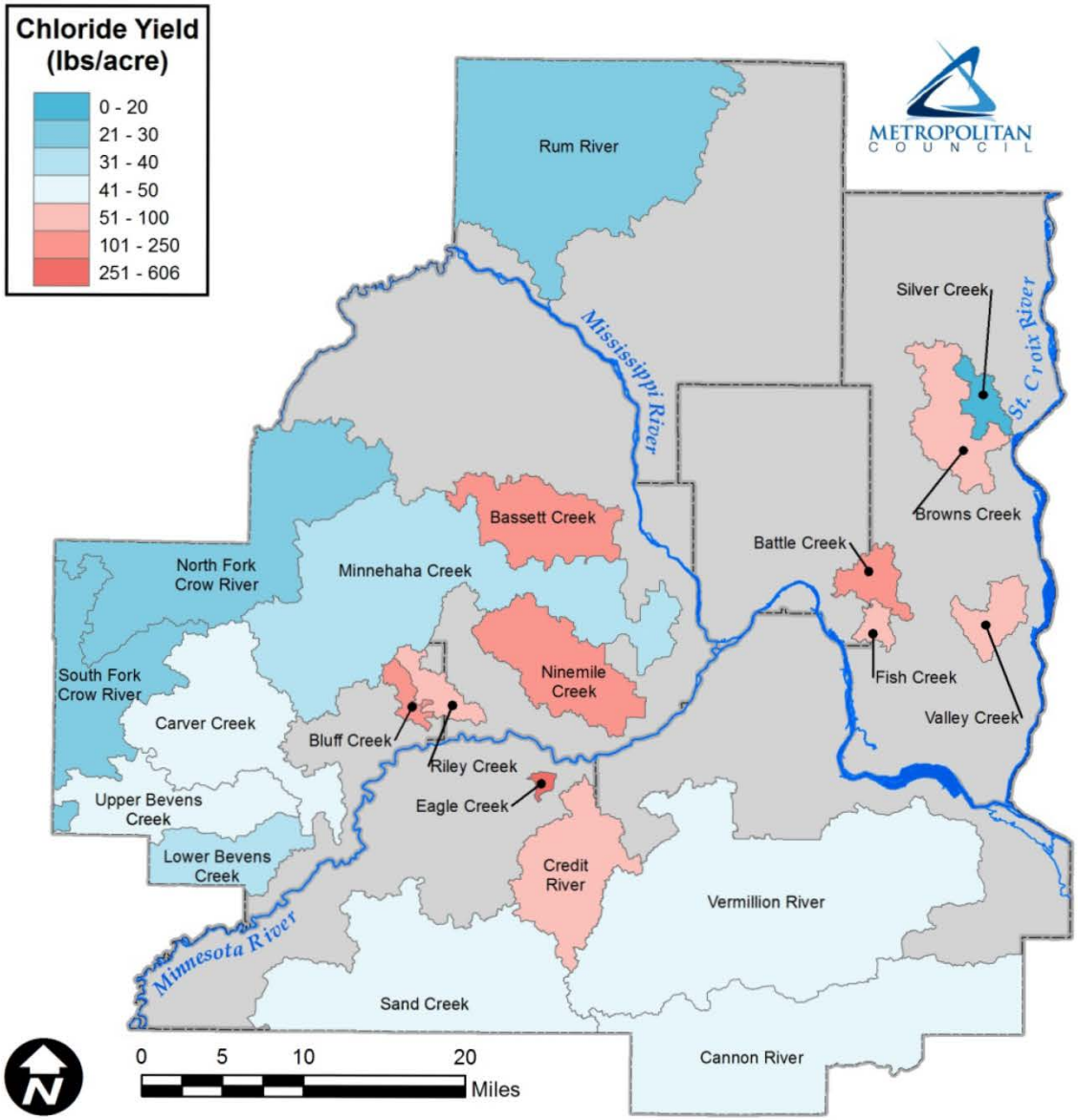
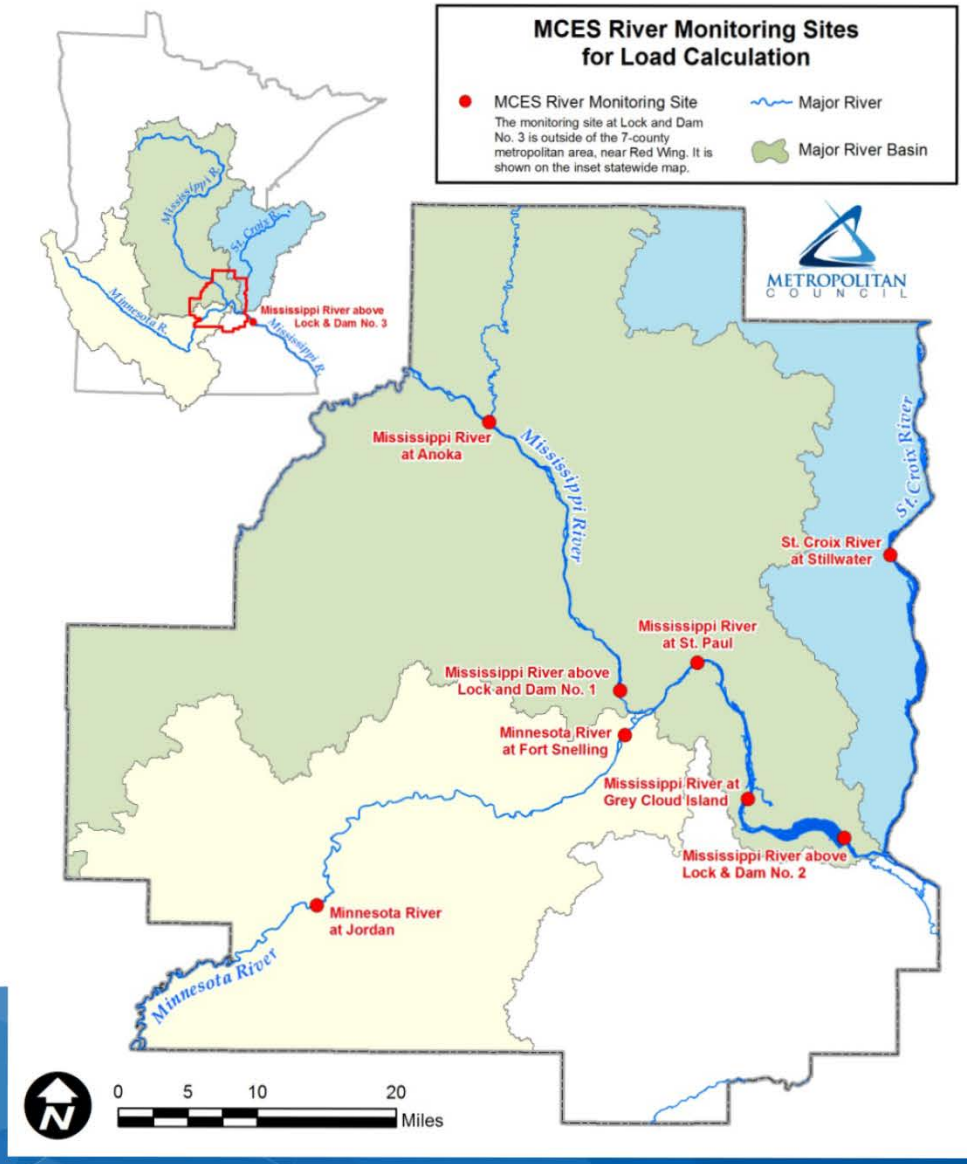
Stream Chloride Loads



MCES River Program



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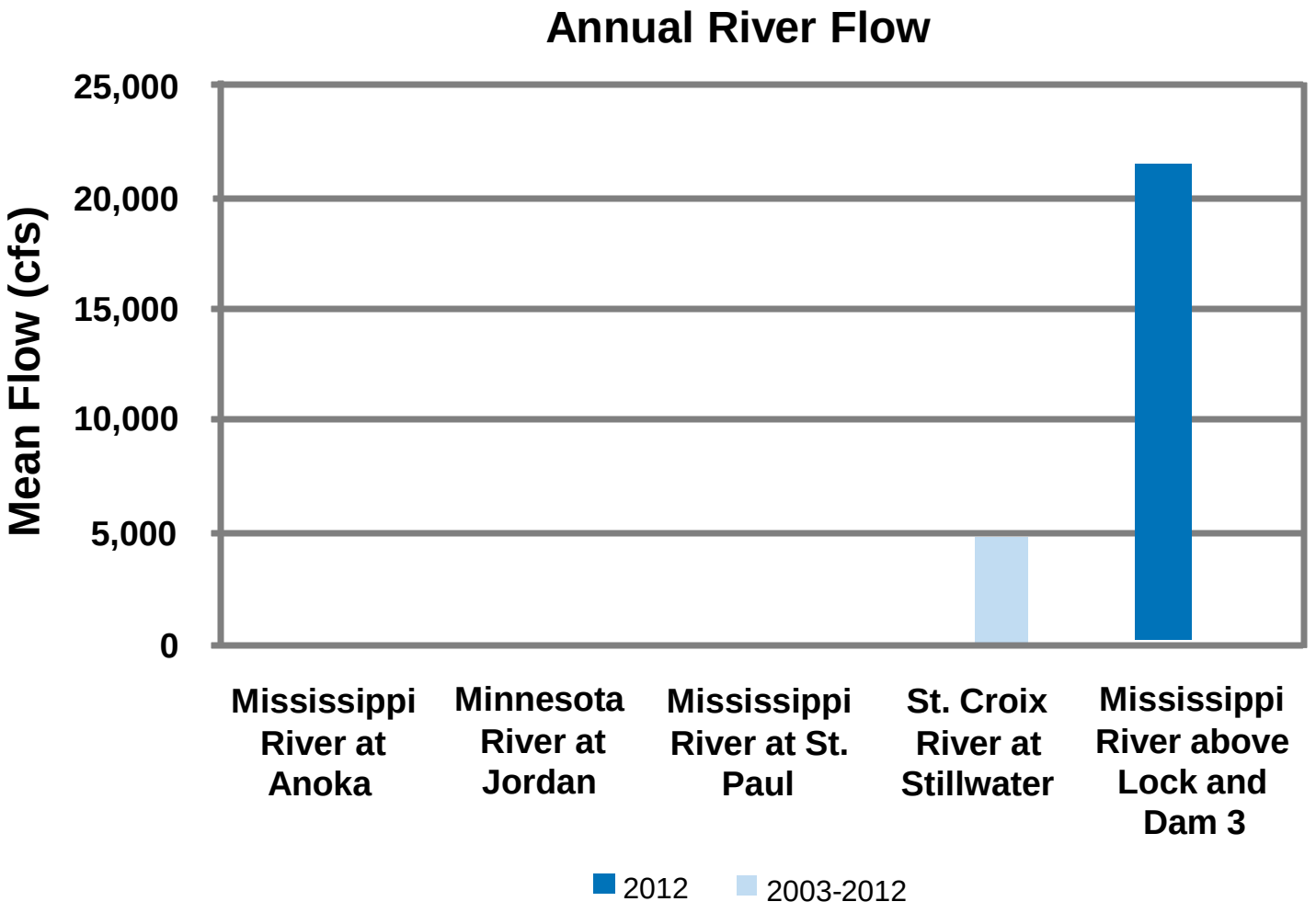
2012 River Flows



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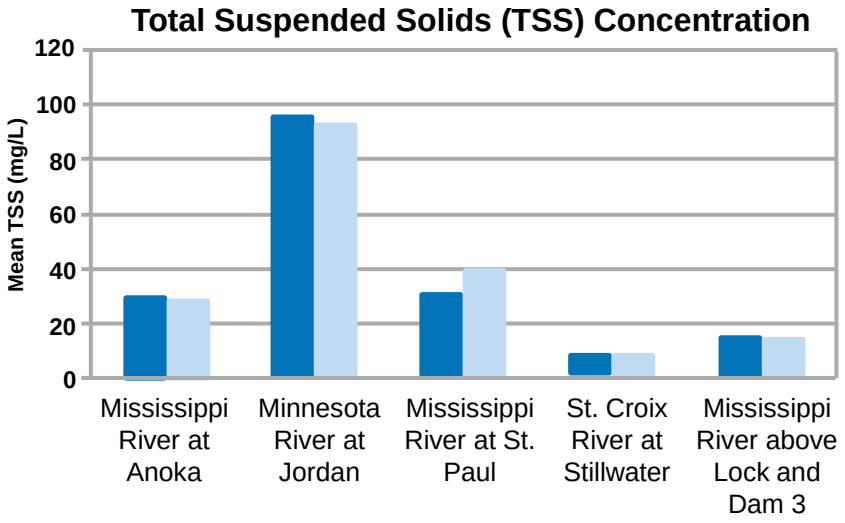
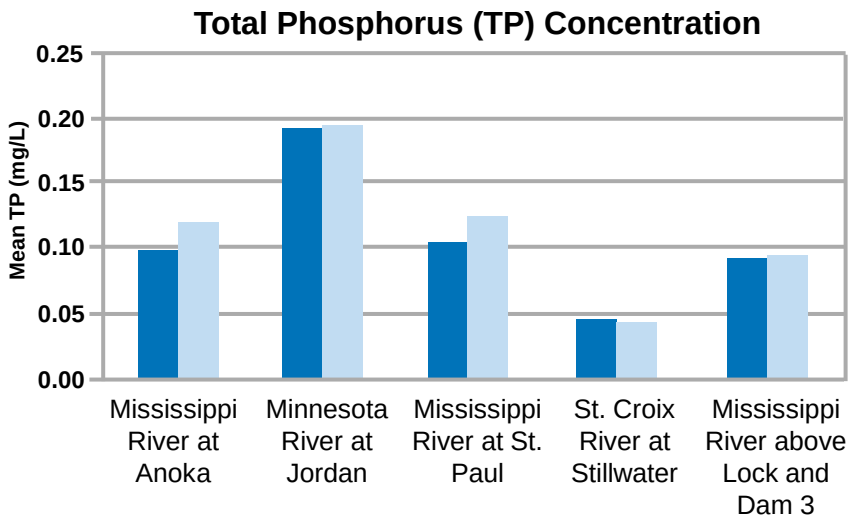
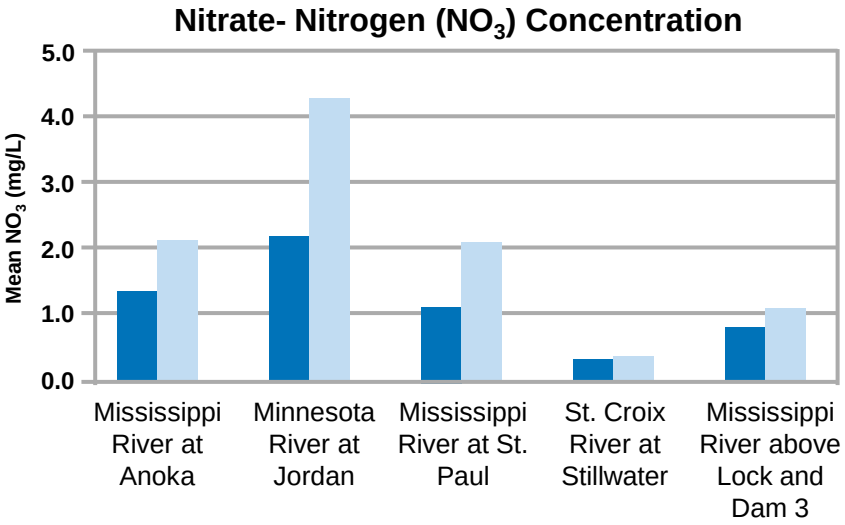
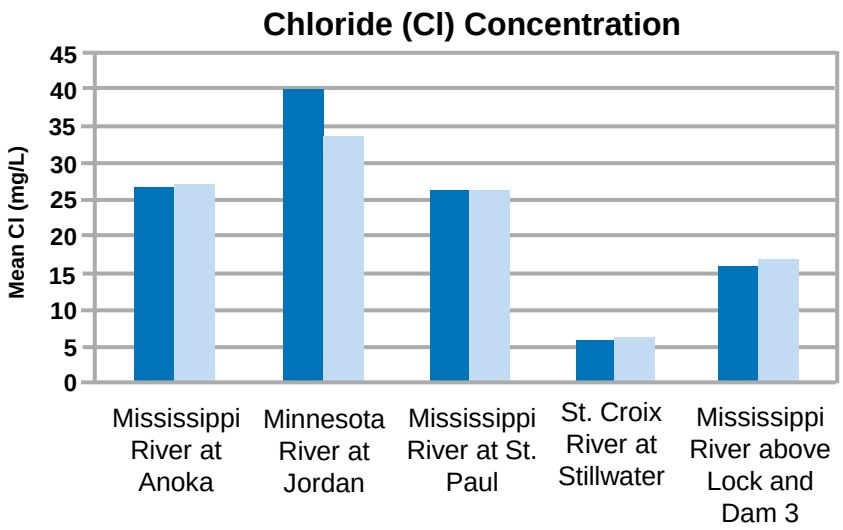
2012 Pollutant Concentrations

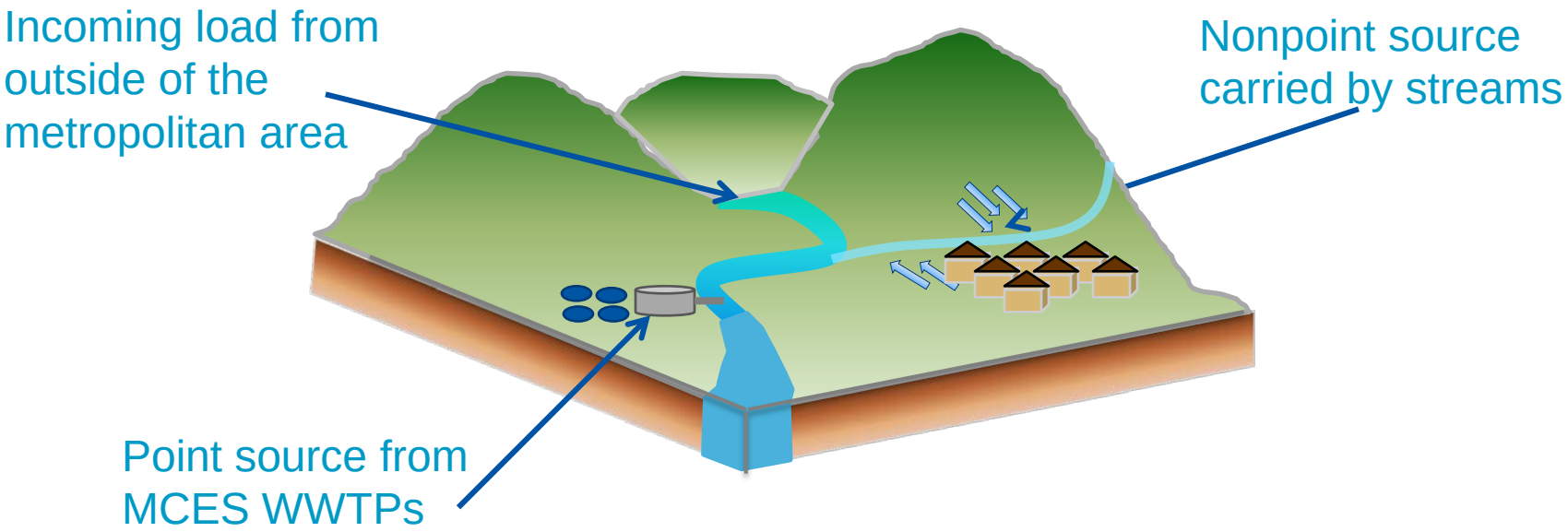








What Contributes to the River Pollutant Load Leaving the Metropolitan Area?



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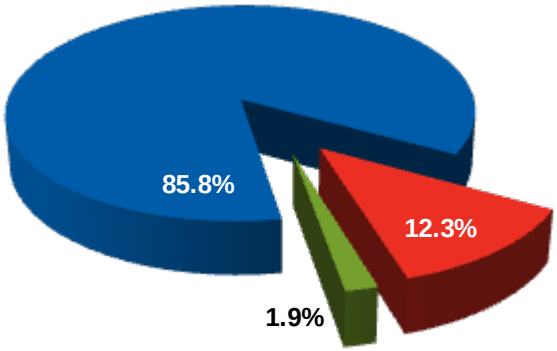
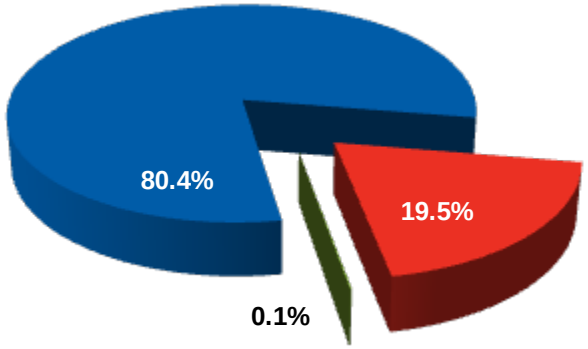
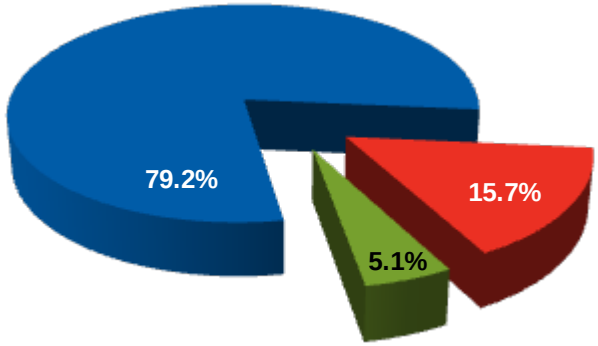
2012 Metro Area River Load Contributions



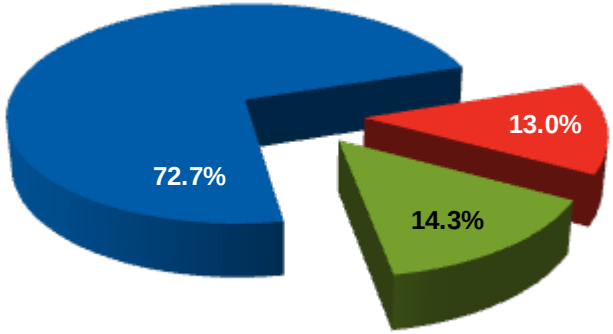
Water Volume Contributions



TSS Contributions



TP Contributions



Nitrate Contributions

- Incoming Load
- Non-Point Source Load
- MCES Point Source Load

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Summary

- For 2012, lakes were mostly eutrophic in the metro area
- Nutrients primarily highest in agriculture dominated areas.
- Solids highest in southwestern metropolitan area
- Chlorides highest in urban watersheds
- In 2012, nonpoint source contributors added a greater portion of the solids and phosphorus to the rivers than MCES treatment plants
- MCES monitoring helps to identify areas that require further improvement in water quality at the watershed-scale and metro-wide.

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Questions?

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