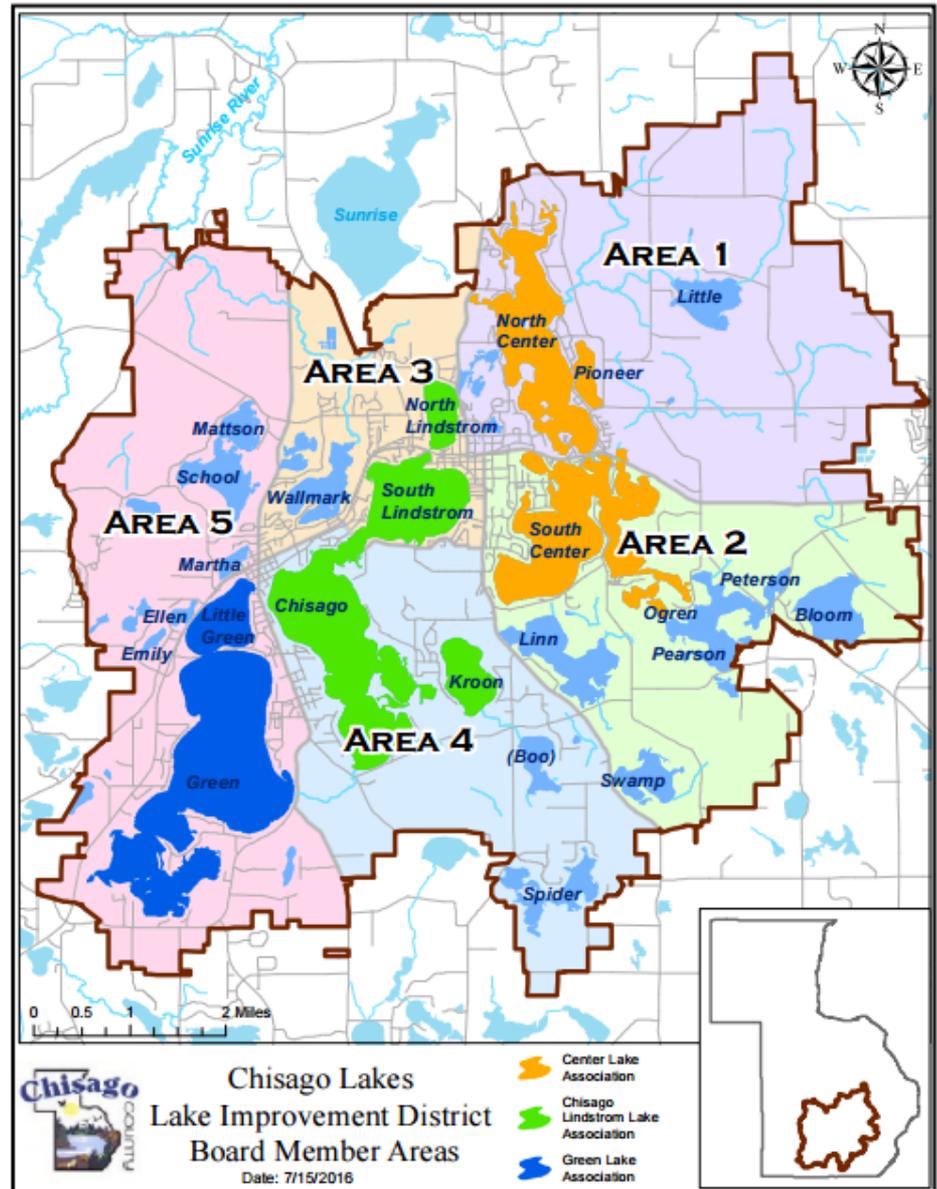


Chisago Lakes Lake Improvement District

Mission:

Restore, preserve, protect and
enhance the water resources of the
Chisago Lakes Chain of Lakes
Watershed

- 1976 first and largest LID in Minnesota – high water and flooding
- Re-established 1984 & 2015
- Center City, Chisago City, Lindstrom, 4 townships
- 19 lakes, 7,000 acres
- 14,1000 residents
- 7 member Board
- Advisory to County Board
- Ad Valorem tax
- MN Statutes 103B.501-103B.581



Authorities MN Statute 103B.551

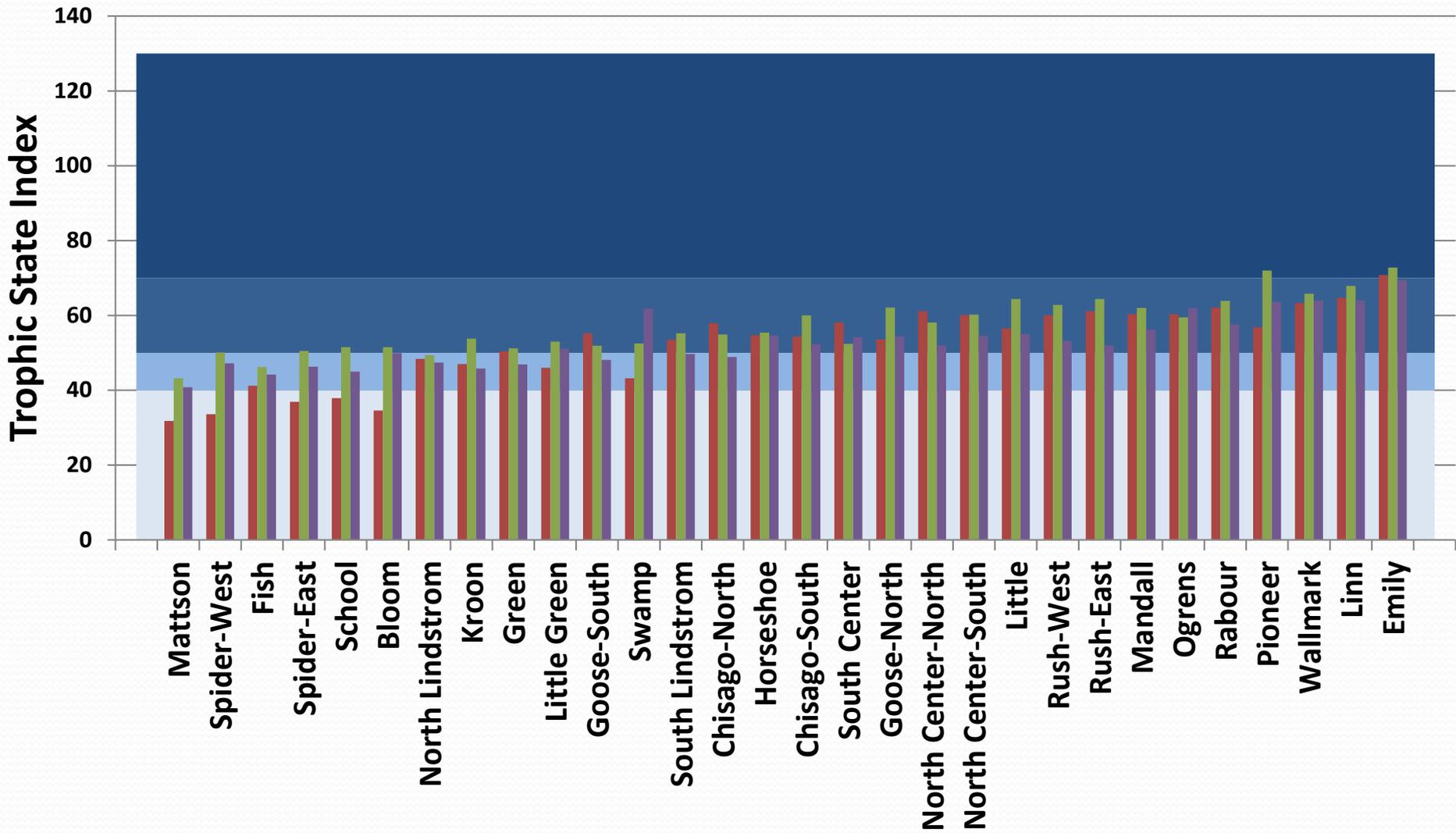
- Dams, water levels improvement projects
- Water control structures
- Acquire property
- Contracts
- Research
- Comprehensive plan
- Water
- Sewers
- Receive funding
- Cooperative agreements
- Public beaches & docks
- Water surface use

Programs & Projects

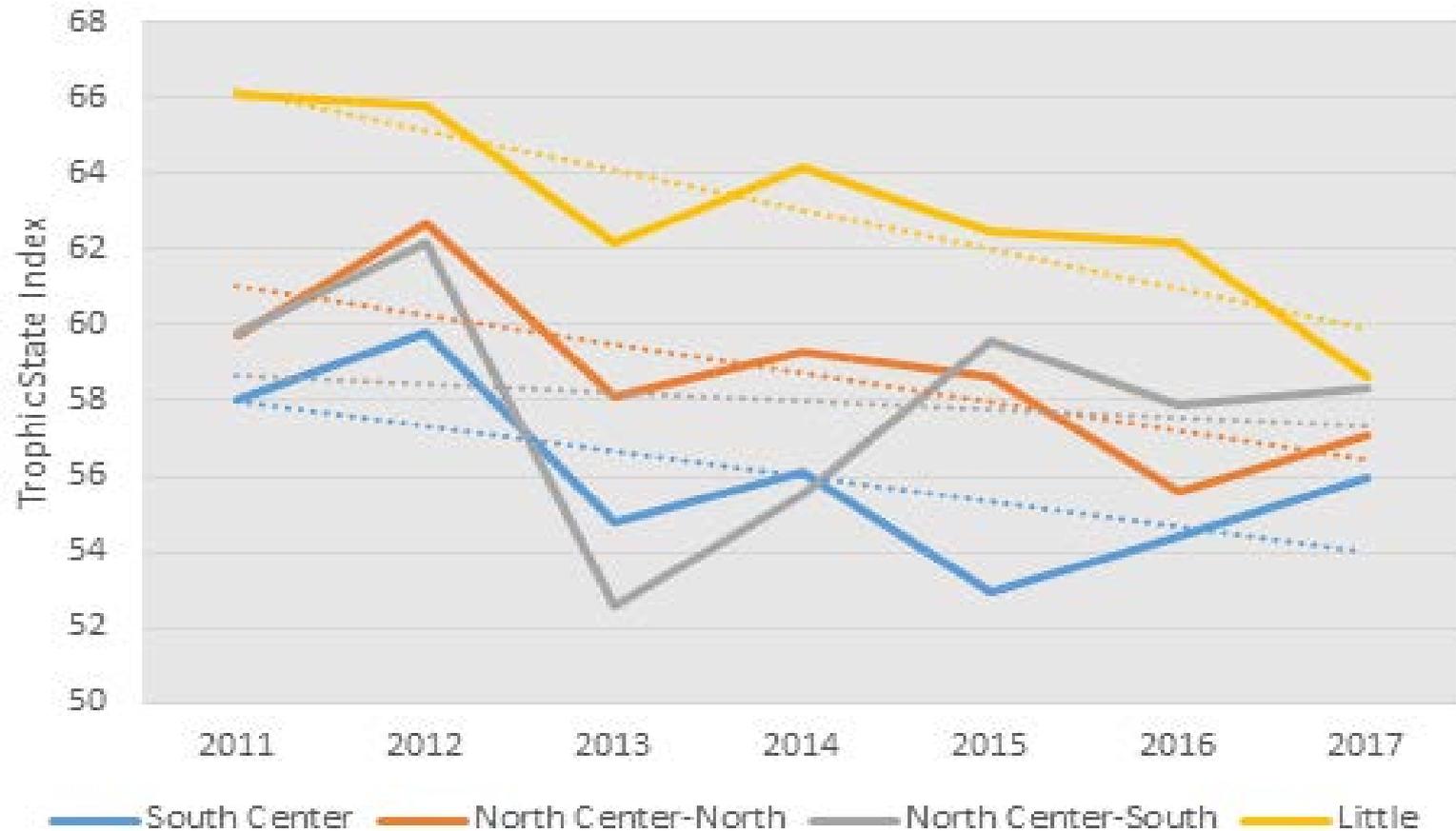
- Land use practices
- Ditch and weir system
- Water quality
- Environmental education
- Non-native aquatic invasive species
- Native shoreline
- Navigation channels
- Recreational use

Lake Classification Chart

■ Oligotrophic
 ■ Mesotrophic
 ■ Eutrophic
 ■ Hypereutrophic
 ■ Chlorophyll-a
 ■ Total Phosphorus
 ■ Secchi Disk

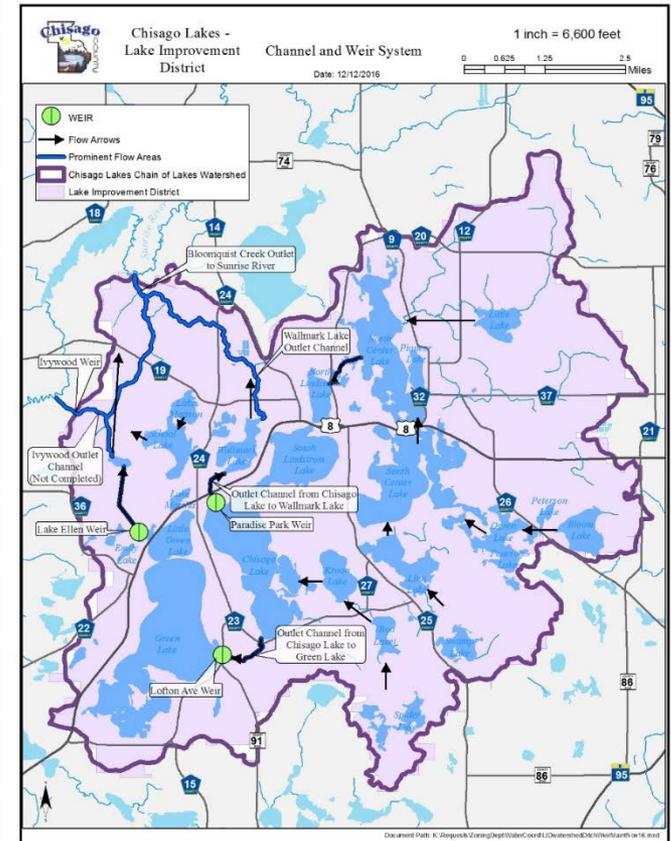


LID Impaired Lakes Trophic State Index Trend



Channel & Weir Maintenance

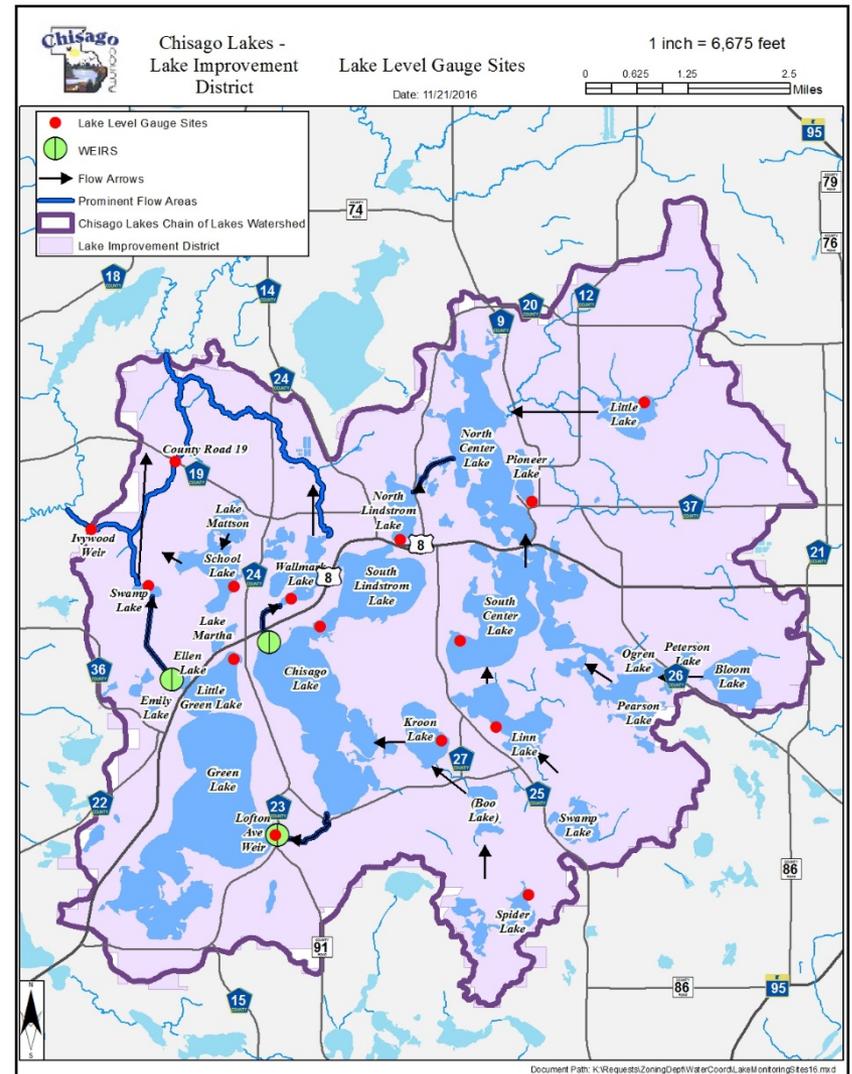
- Updated Operation & Maintenance Plan
 - Infrastructure, maintenance and operating rules
- Seasonal Inspections
- System well maintained and functioning properly



Lake Level Monitoring

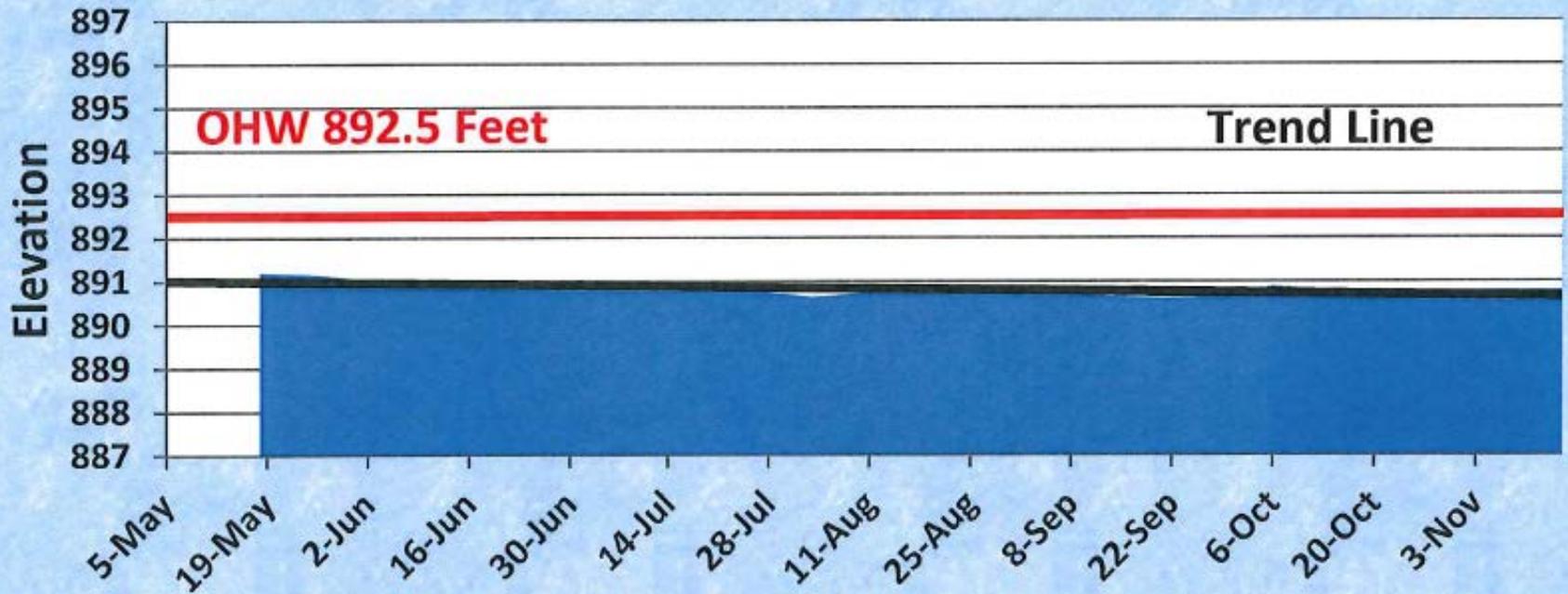


- 15 lake gauges monitored weekly during open water season



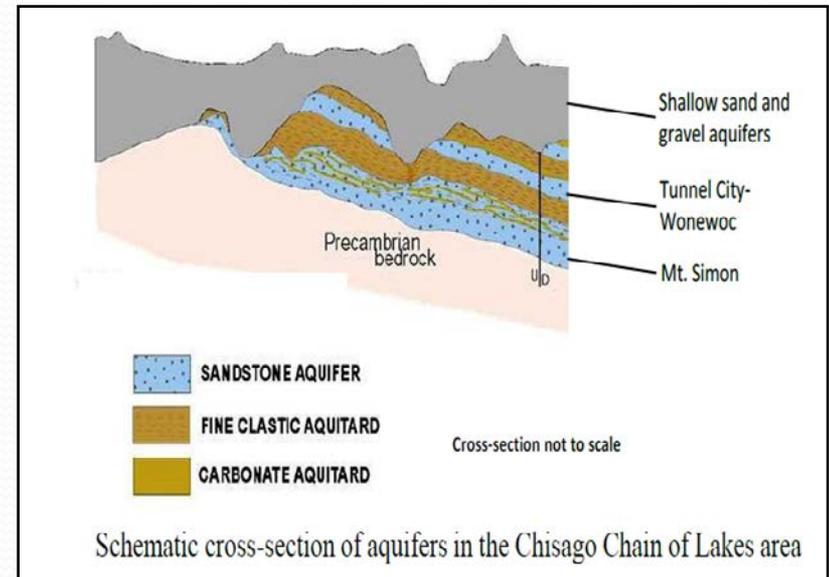
Lake Level Monitoring

2017 Little Green/Green/Allen Lake Levels



Groundwater Observation Wells

- Established in 2015 at South Center public water access
- Assess groundwater resources
- Determine long term trends
- Interpret impacts of pumping and climate
- Plan for water conservation
- Evaluate water conflicts



Hydrograph

Help

Feedback

Quick range:

Displayed Range: to

Provisional - Water Level
Approved - Water Level
Field Measurement - Water Level



Stormwater Best Management Practices

- City of Lindström
 - Enhanced Street Sweeping



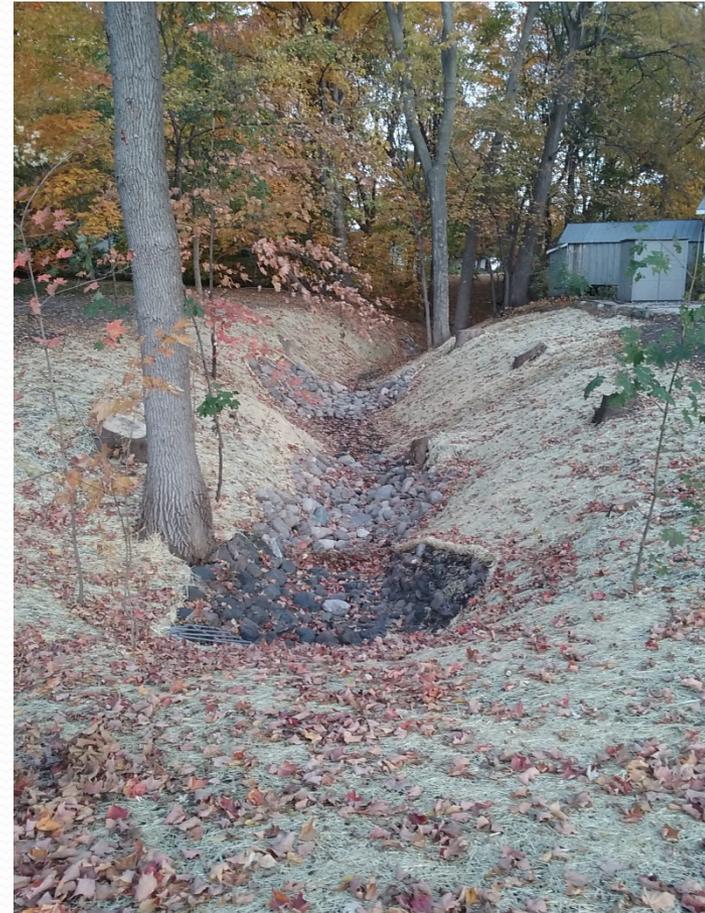
Stormwater Best Management Practices

- David Thompson
 - Water & Sediment Control Basin/Lined Waterway



Stormwater Best Management Practices

- Maple Street
 - Gully Stabilization



Handicap Accessible Fishing Pier

- Little Green public water access
 - Reconstructed in 2014
- Near multiple assisted living facilities



Parks Adjacent to Lakes

- Ki-Chi-Saga Park
- Allmansrätt Park



North Center/North Lindstrom Channel

- 2018 County Road 20 bridge construction
- Channel maintenance & widening may be considered



Stormwater Best Management Practices

- Cost Share Program
 - Shoreline Stabilization
 - Rain Garden
 - Hillside Erosion Control



Children's Water Festival

15 Years Strong ~ Thank You for Your Efforts!



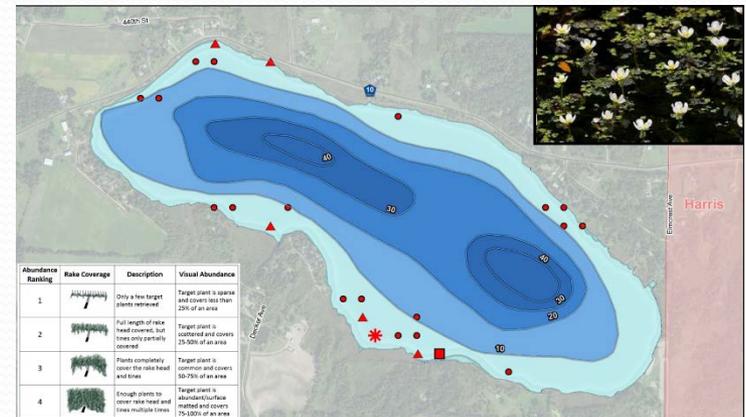
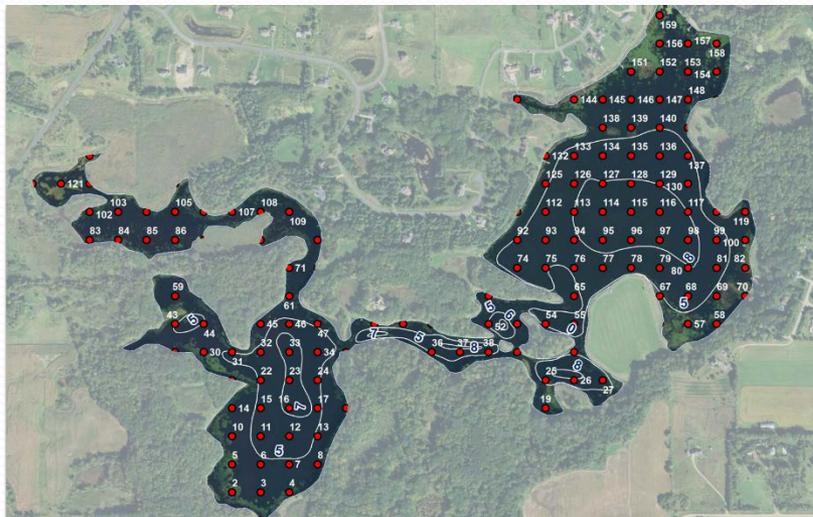
Public Outreach and Awareness

- Partnership with Lake Associations
- Community Events:
 - Chisago Lakes Home & Business Expo
 - Harmony in the Park Water Festival
 - Karl Oskar Days
 - Ki-Chi-Saga Days
- Community Presentations:
 - Chisago- Lindstrom Lakes Association
 - Chisago Lakes Rotary Club



Aquatic Plant Point-Intercept Surveys

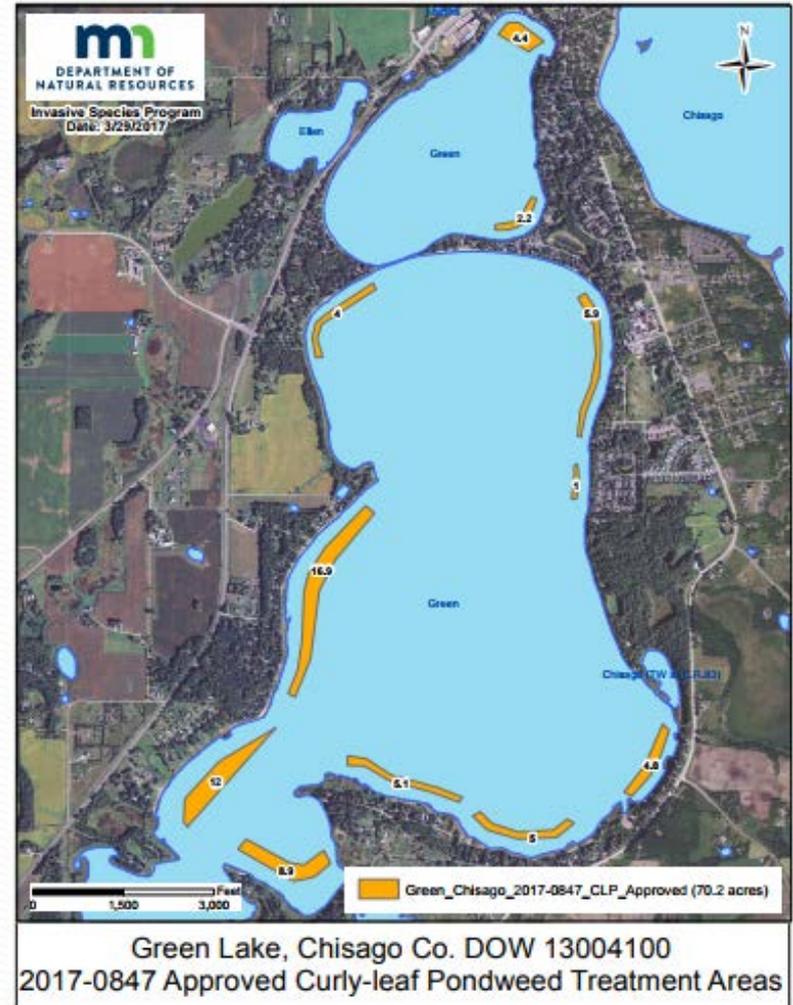
- Methodology
 - Frequency of occurrence
 - Track trends over time
 - Compare areas within lakes
- Floristic Quality Index



- Six lakes Surveyed
 - Fish, Horseshoe, Kroon (DNR), Little, North Center, Spider

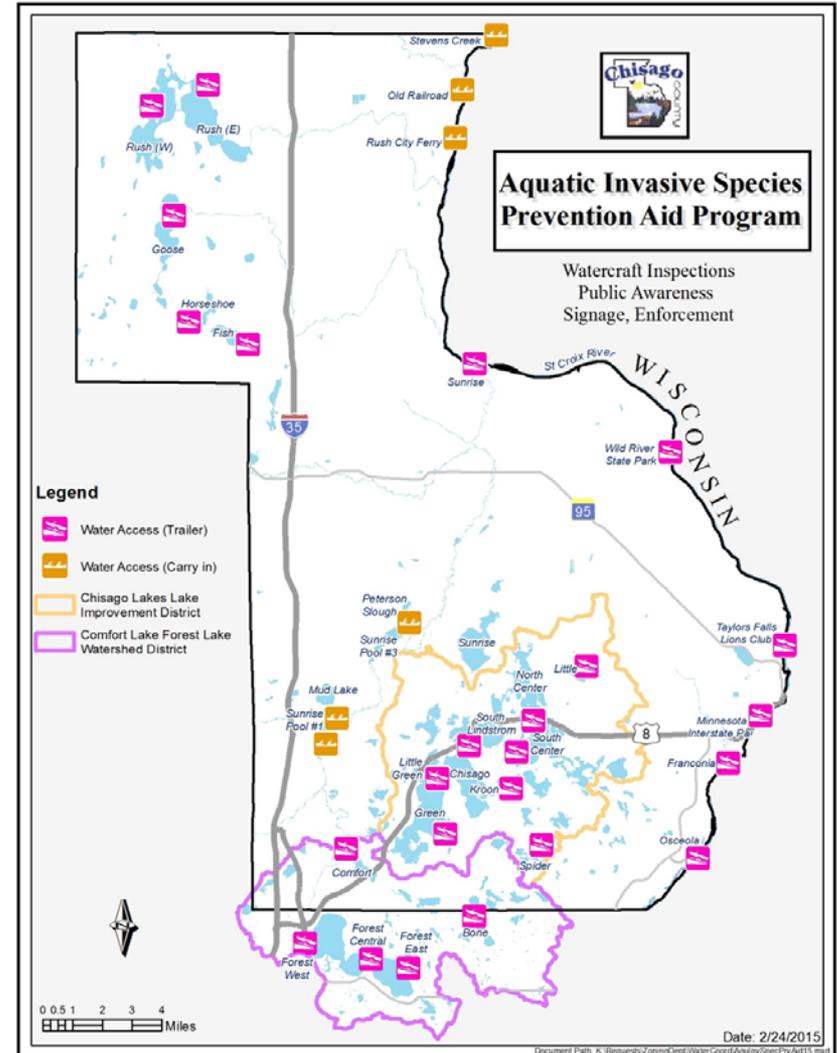
Aquatic Invasive Species Treatment

- Eurasian Water Milfoil
- Curly-leaf Pondweed
- Improve Navigation
- Lakes Treated
 - Chisago, Green, Kroon, Little Green, North Center, South Center, South Lindstrom



Aquatic Invasive Species Prevention

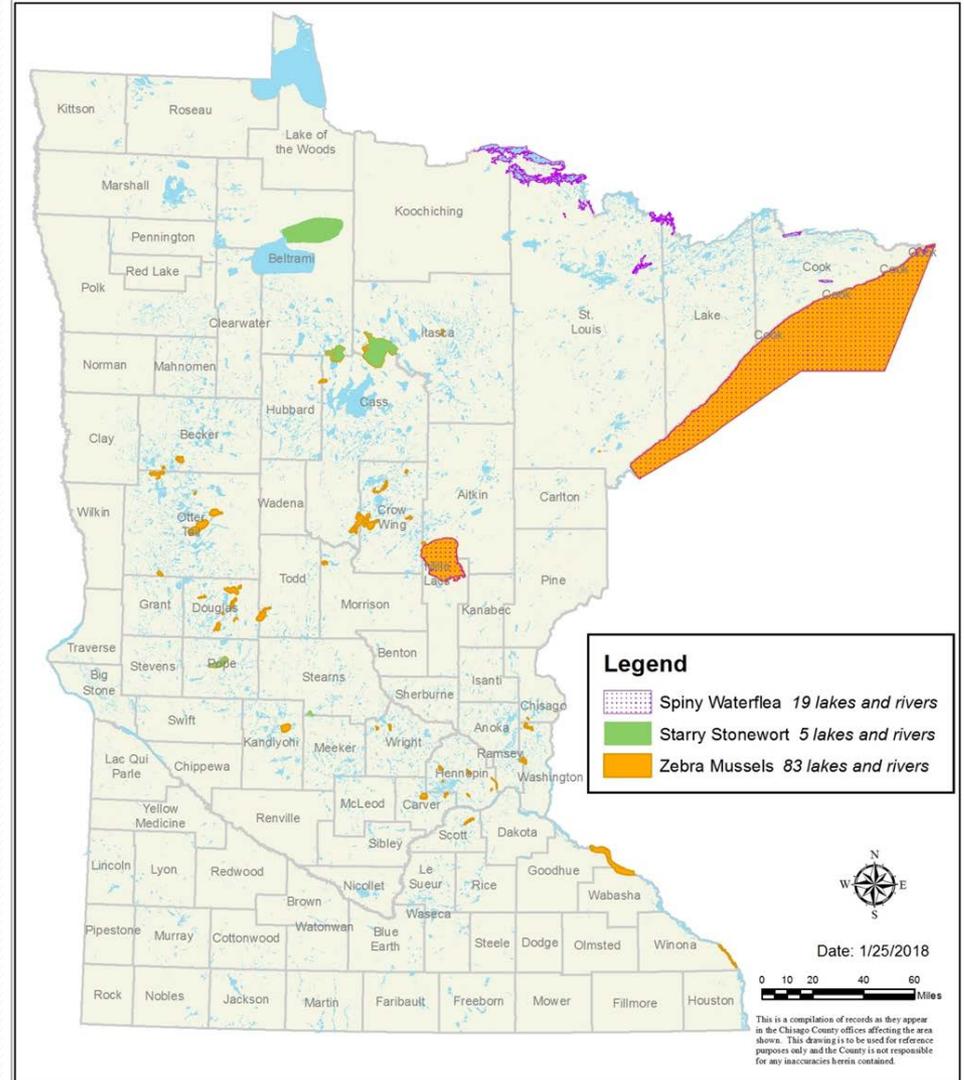
- Watercraft Inspections
 - Chisago & Northern Washington Counties
 - 24 Accesses



Aquatic Invasive Species Prevention

Watercraft Users Visited these Lakes & Rivers with Aquatic Invasive Species (AIS) in 2017 before Visiting Lakes & Rivers in Chisago County

- Watercraft Inspections
 - Map of AIS in Previous Lake or River
 - Spiny Waterflea, Starry Stonewort, Zebra Mussels



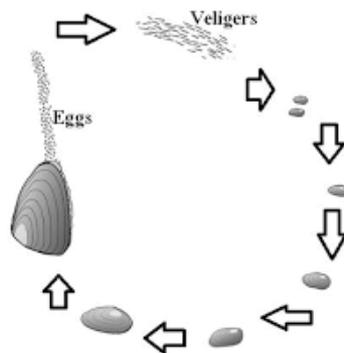
Zebra Mussel Prevention, Early Detection, Rapid Response

- Inspection and prevention most important



Zebra Mussel Veliger Monitoring

- Microscopic, free living larvae
- Form shells
- Lakes & rivers monitored
 - Comfort, Fish, Kroon, Little, North Center, North Goose, South Lindstrom, Sunrise Kost Dam, St. Croix Interstate Park



Carp Management

- Aquatic Invasive Species
- Primary breeding areas include
 - Lake Ellen
 - Linn Lake
 - North Center/North Lindstrom channel
- Carp Festival
 - Collected age, length and weight





Thank you

**Copies of reports are
available at:**

**[http://www.chisagocounty.us/
364/Annual-Reports](http://www.chisagocounty.us/364/Annual-Reports)**

We look forward to 2019!