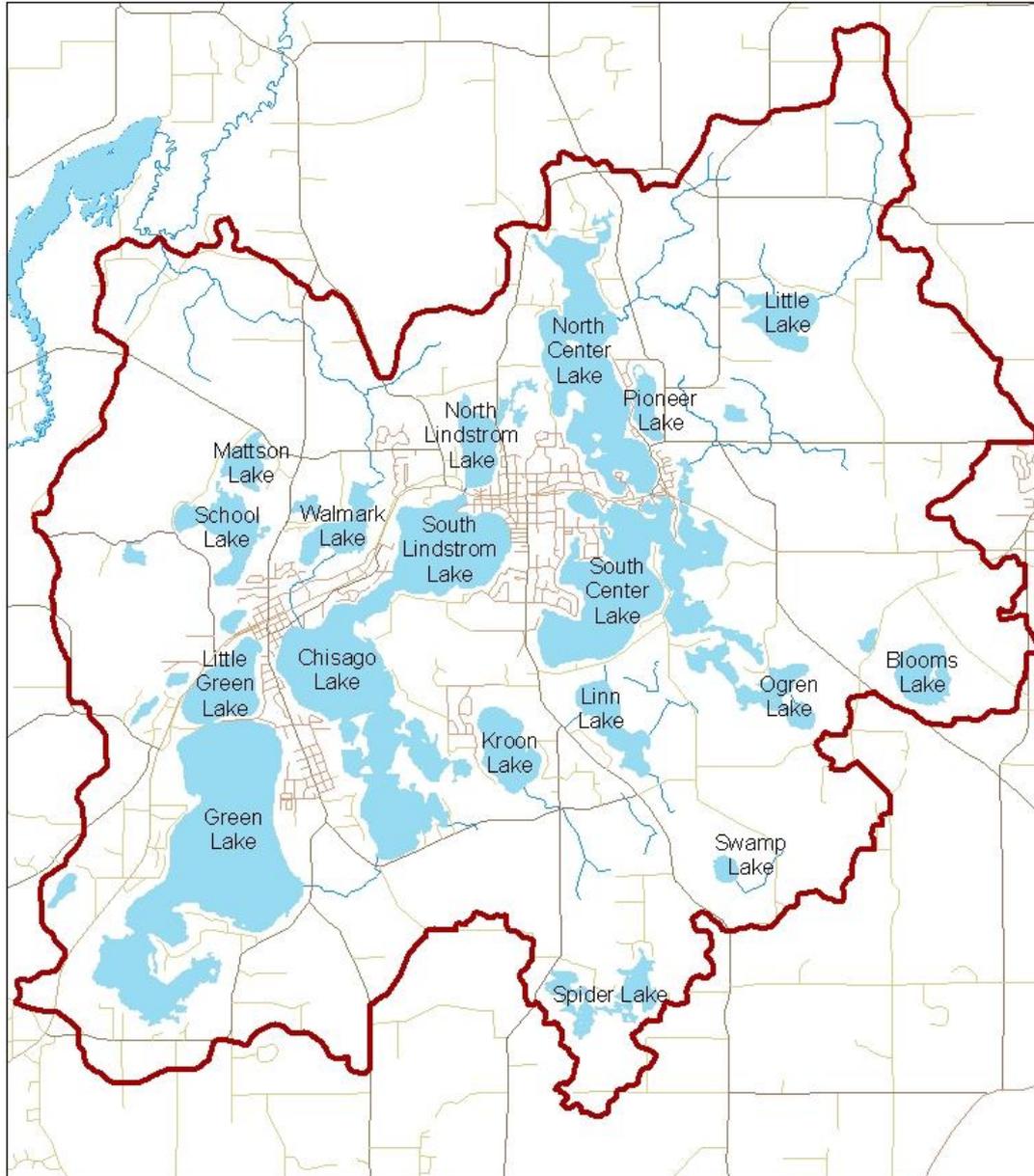


# Chisago Lakes Lake Improvement District

## 2011 Annual Report



**Mission:**  
**Protect and restore**  
**the surface water resources of**  
**the Chisago Lakes watershed**



**Chisago Lakes Chain of Lakes Watershed**



**GOAL:**

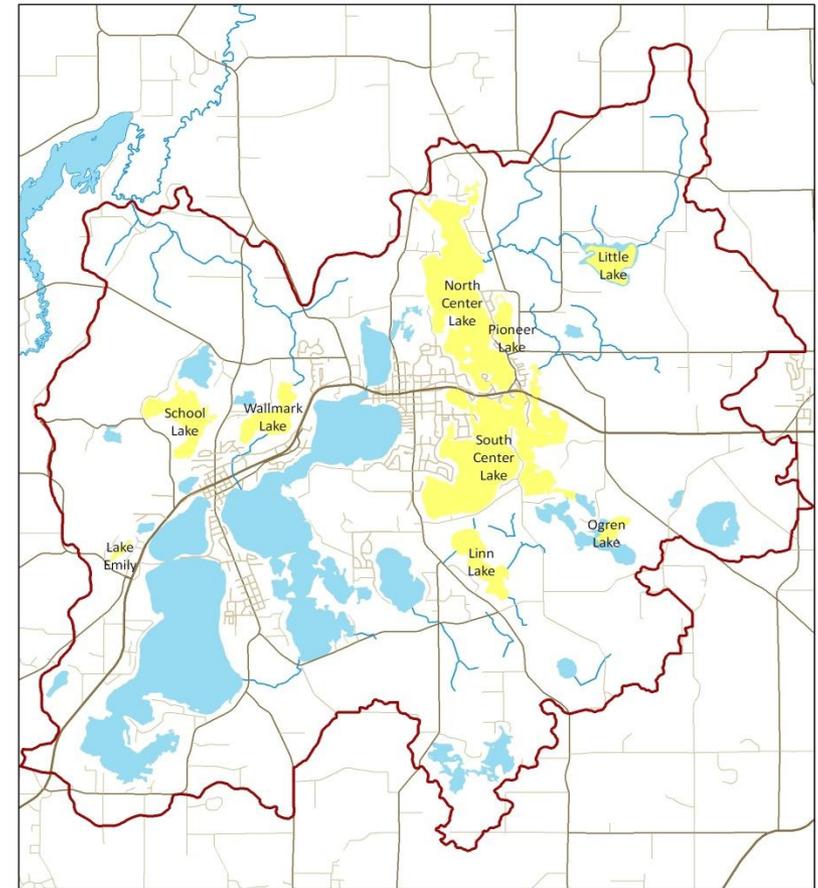
**Preserve, protect and enhance  
water quality within the  
Chisago Lakes watershed**

# Protection and Restoration Plan

- Identify lakes & streams that do not meet water quality standards
- Primary pollutant – Phosphorus
  - nutrient that turns lakes green with algae
- Develop a plan to protect the lakes with higher water quality & restore lakes with lower water quality
- Initial study to be completed by June 2013
- Clean Water, Land & Legacy Fund
  - Primary financing

# Protection and Restoration Plan

- Impaired Waters List - 2012
  - North Center
  - South Center
  - Emily
  - Linn
  - Little
  - Ogren
  - Pioneer
  - School
  - Wallmark



Chisago Lakes Chain of Lakes Watershed  
Impaired Waters

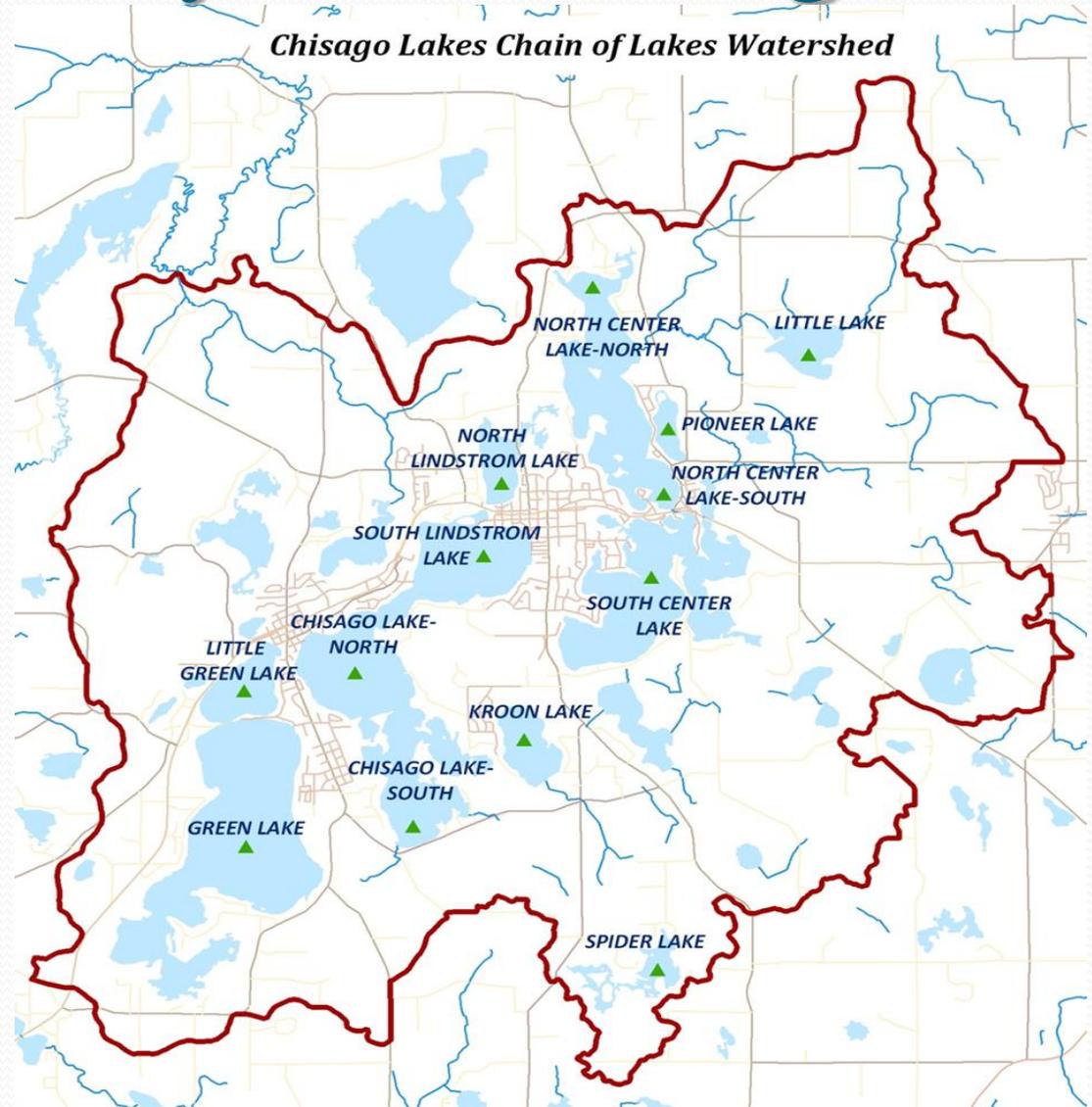


# Draft Load Reduction Goals

Lake Name	Total Modeled Load (lbs/yr)	Reduction Needed to meet State Standards (lbs/yr)	Reduction Needed (%)
NORTH CENTER	6,700 lbs.	570 lbs.	9%
SOUTH CENTER	12,000 lbs.	740 lbs.	6%
EMILY	130 lbs.	120 lbs.	92%
LINN	1,200 lbs.	740 lbs.	62%
LITTLE	1,500 lbs.	840 lbs.	56%
OGREN	1,300 lbs.	450 lbs.	35%
PIONEER	520 lbs.	500 lbs.	96%
SCHOOL	710 lbs.	490 lbs.	69%
WALLMARK	1,200 lbs.	1,100 lbs.	93%

# Water Quality Monitoring

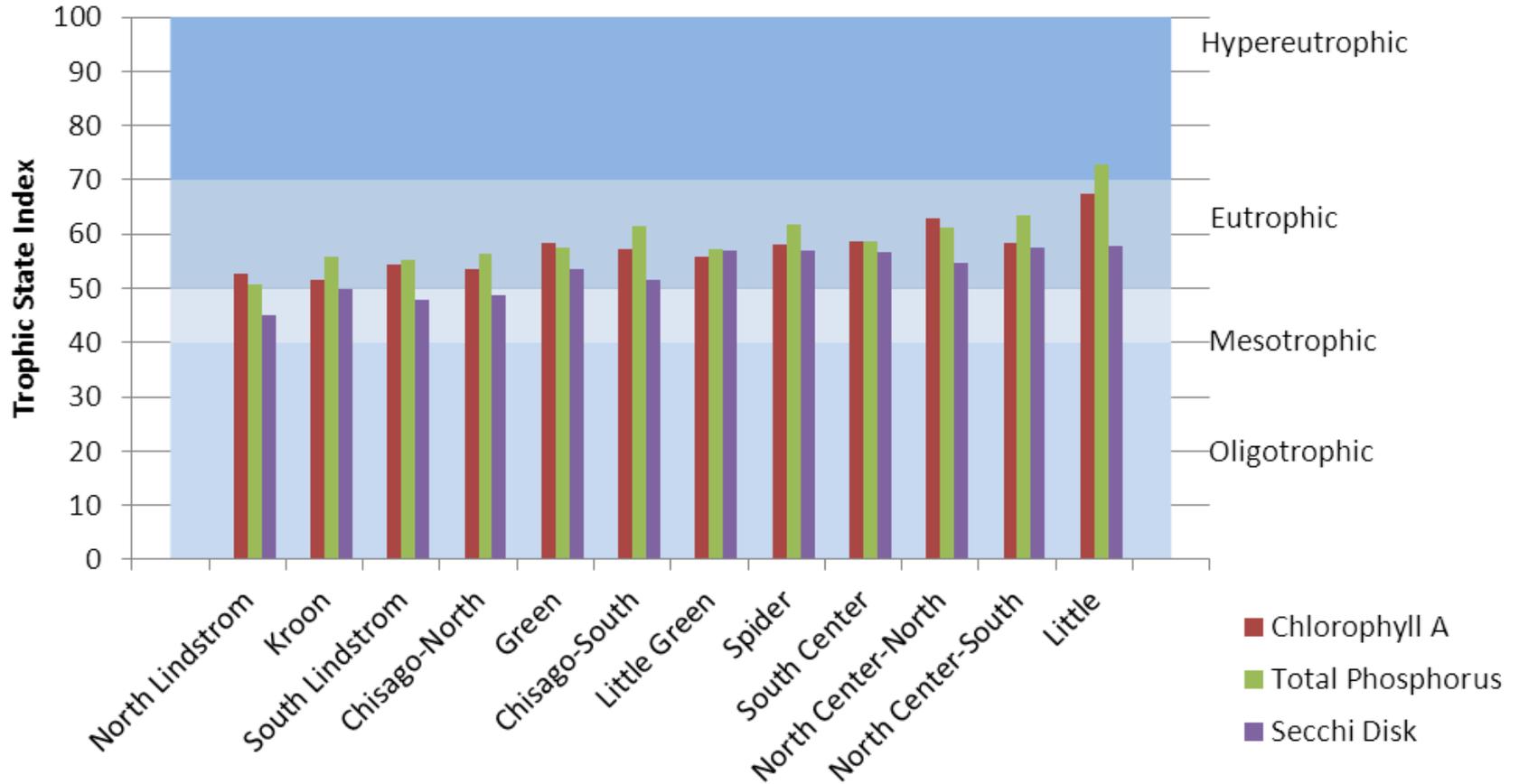
- 12 sites
- Once per month
  - May – September
- Chlorophyll
- Color
- Invasive Plants
- Nitrogen
- Phosphorus
- Physical Condition
- Recreational Suitability
- Temperature
- Transparency



# Water Quality Monitoring

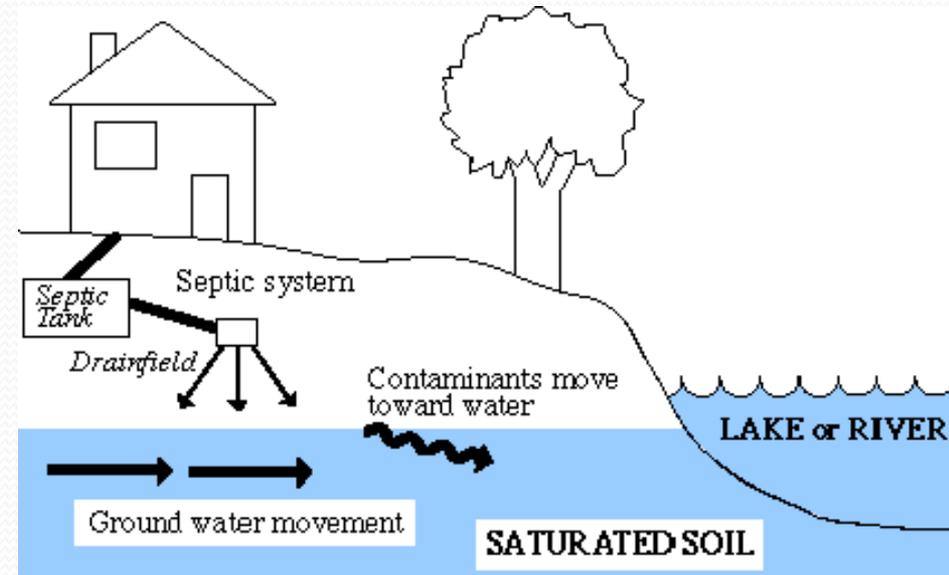
Lake	Grade
North Lindstrom	B
Kroon	B
South Lindstrom	B
Chisago – North	B
Green	C
Chisago – South	C
Little Green	C
Spider	C
South Center	C
North Center – North	C
North Center – South	C
Little	C-

# Water Quality Monitoring



# Sewer System Hook Up Reimbursement

- Partnership with Lindstrom
- Shoreline homeowners
- \$500 reimbursement
  - Disconnect existing system
  - Upgrade to city sewer
- Minnesota Avenue
  - North Lindstrom Lake
- Glader Boulevard & Lane
  - South Center Lake
- Lakelawn Avenue
  - Kroon Lake



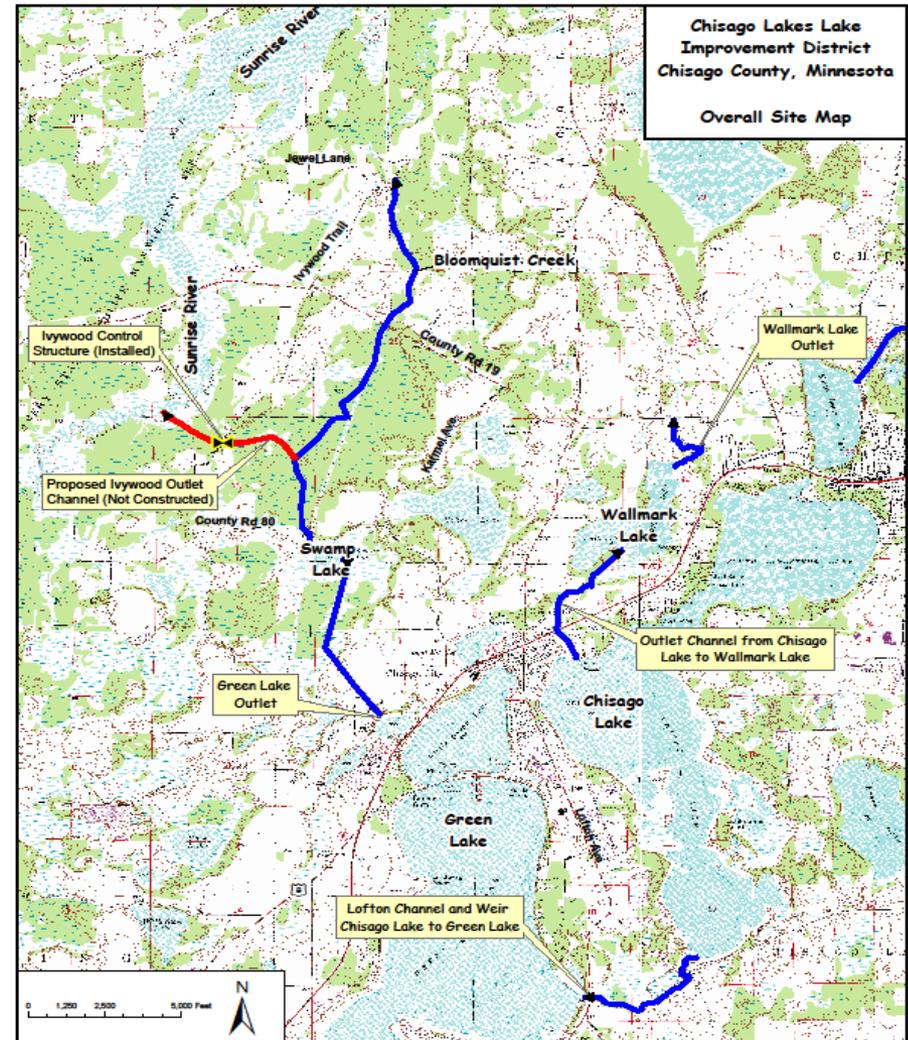
- 9 Septic systems taken off lakes!!



**GOAL:**  
**Maintain the ditch & weir  
system to control water levels  
during high water events**

# Ditch & Weir Maintenance

- Quarterly Inspections
- System well maintained and functioning properly



# Ditch & Weir Maintenance

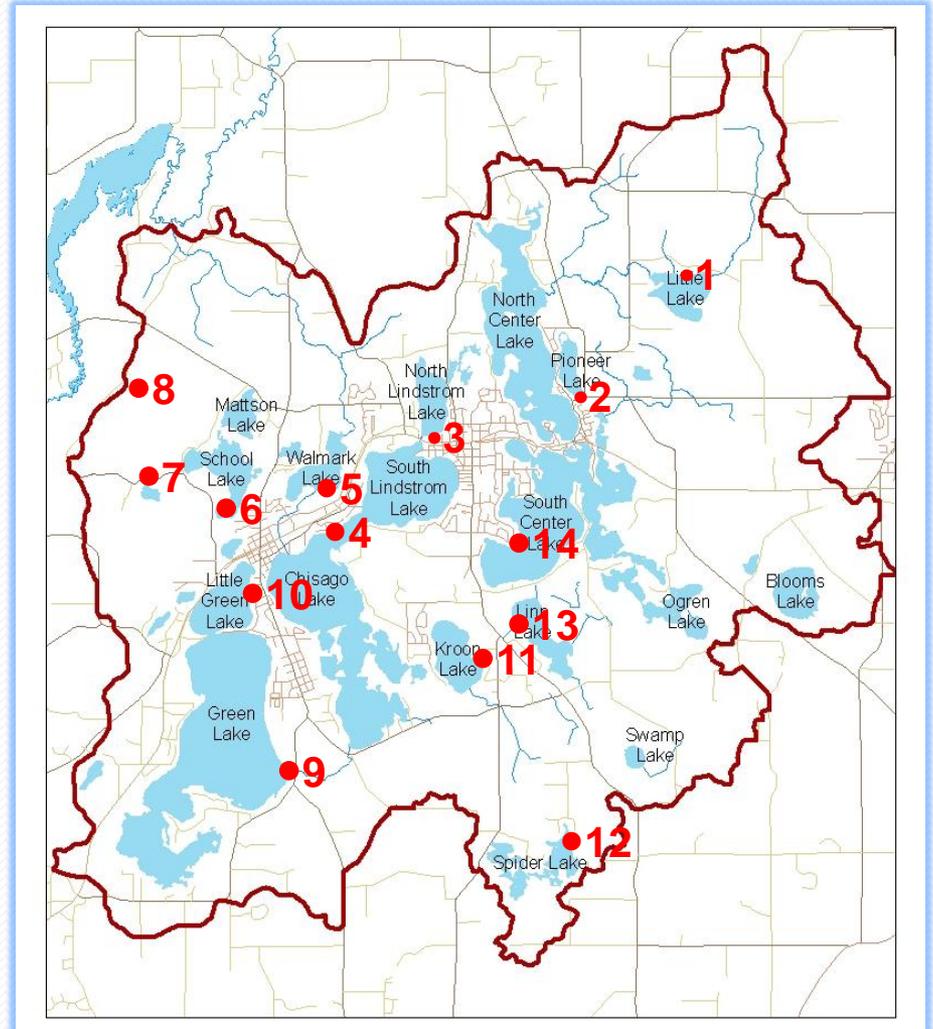


# Ditch & Weir Maintenance

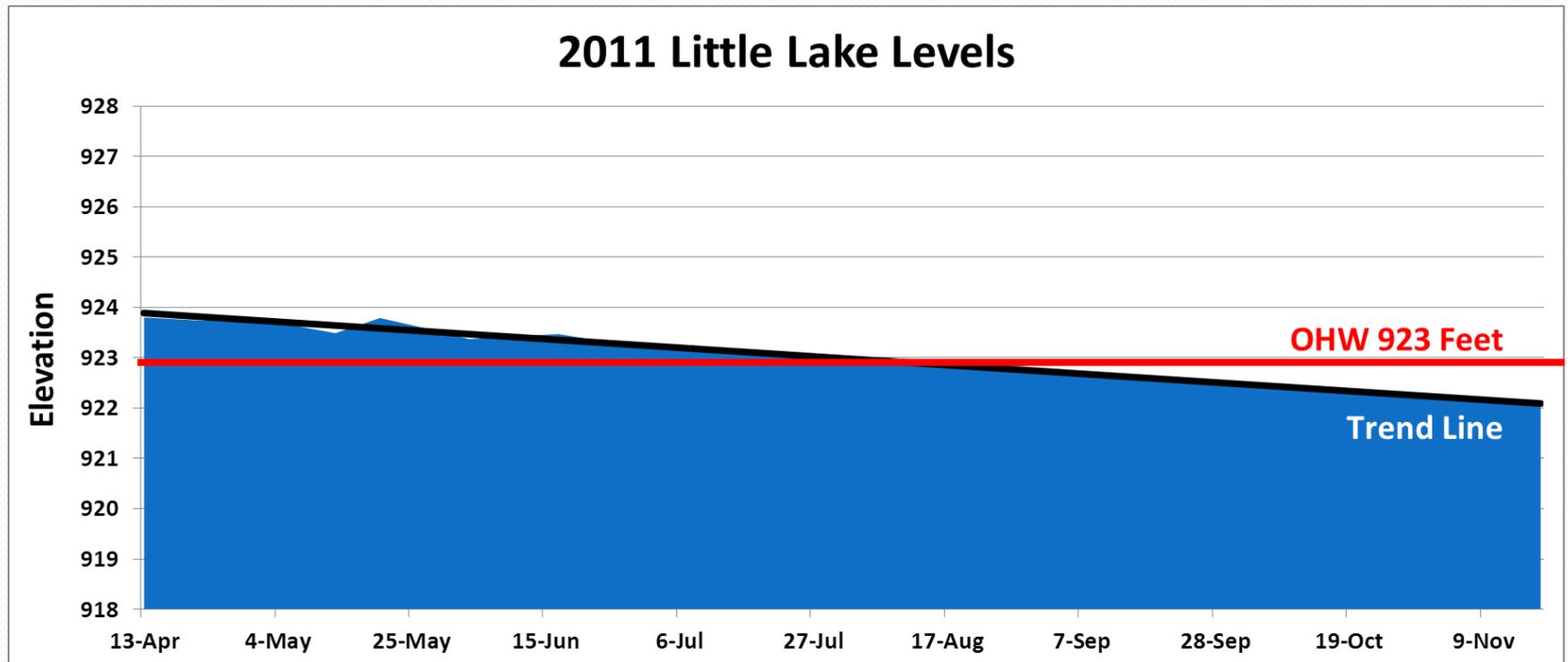
## Aquatic Plant Management



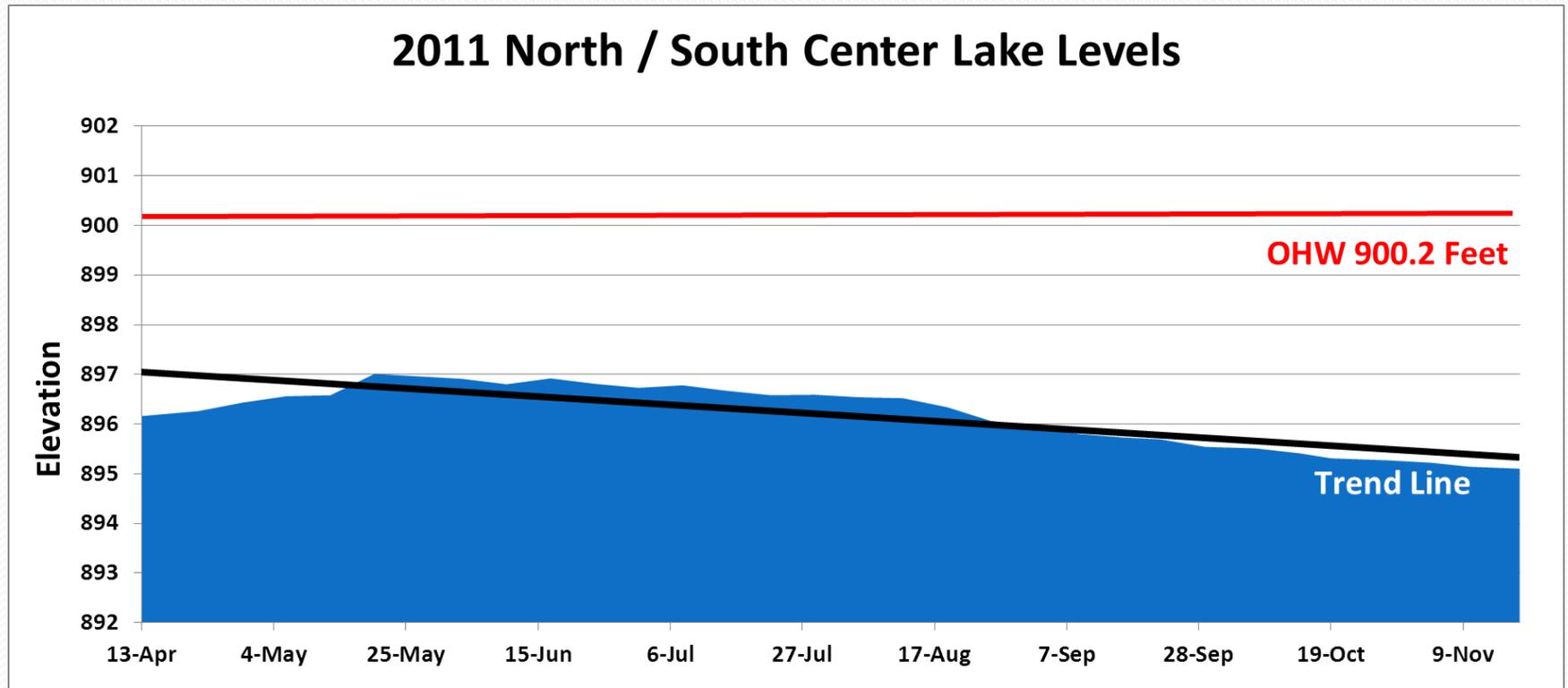
# Lake Level Monitoring



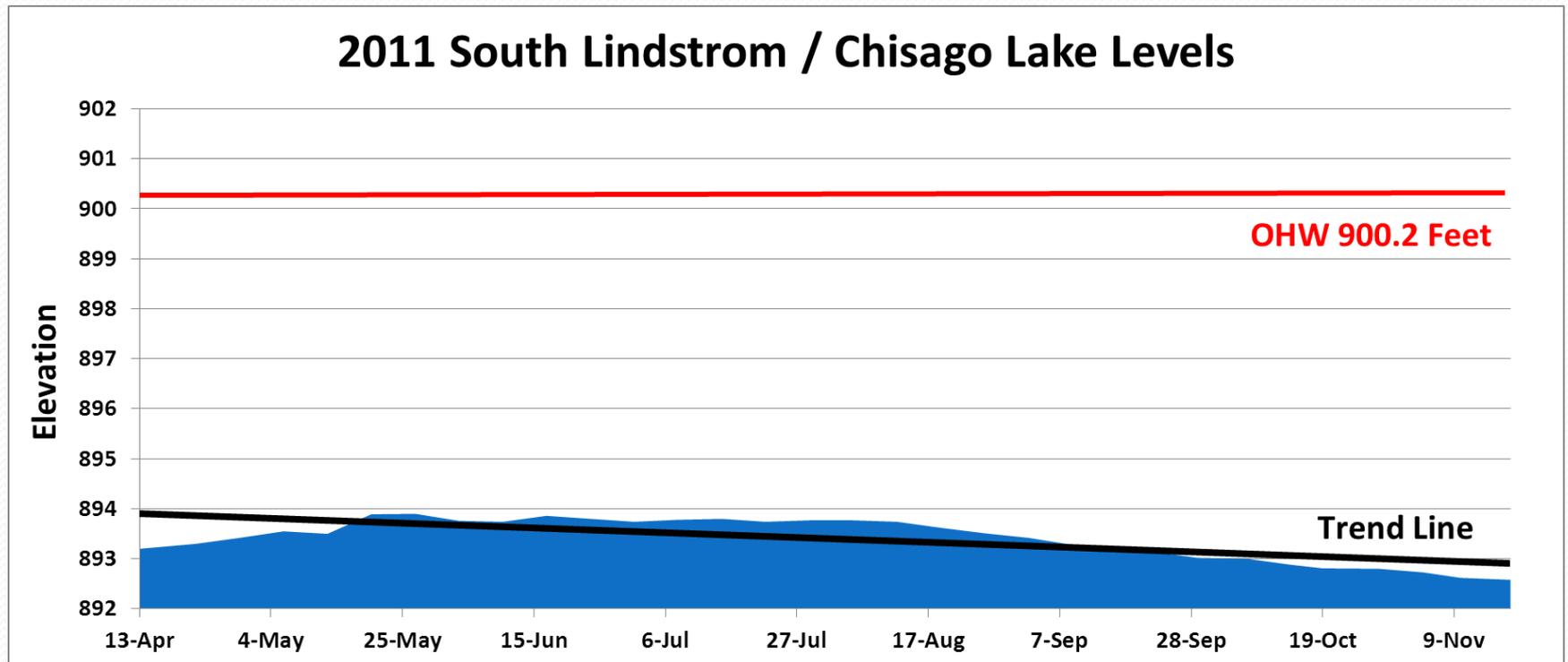
# Lake Level Monitoring



# Lake Level Monitoring



# Lake Level Monitoring



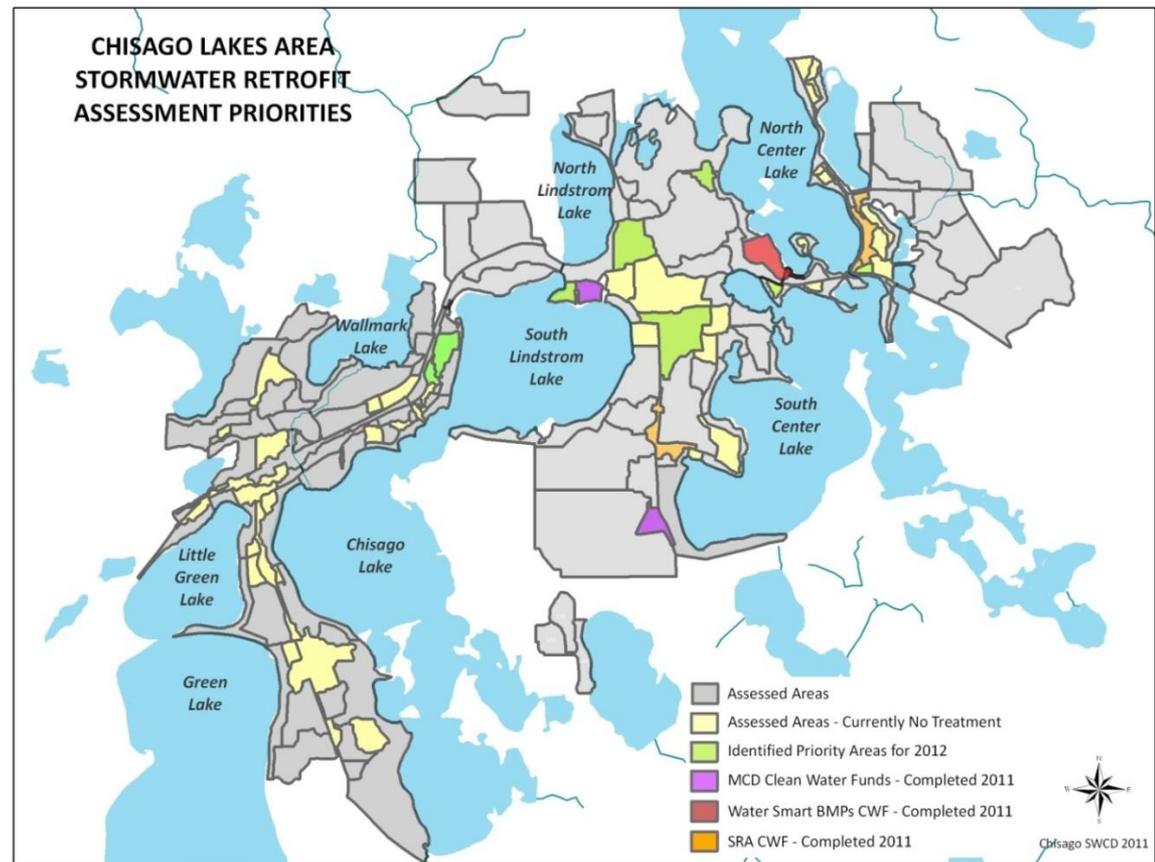
## **GOAL:**

**Encourage environmentally sound  
land use practices for urban and  
agricultural areas to protect  
water quality within the  
Chisago Lakes watershed**

- **Establish a matching fund**

# Stormwater Retrofit Assessments

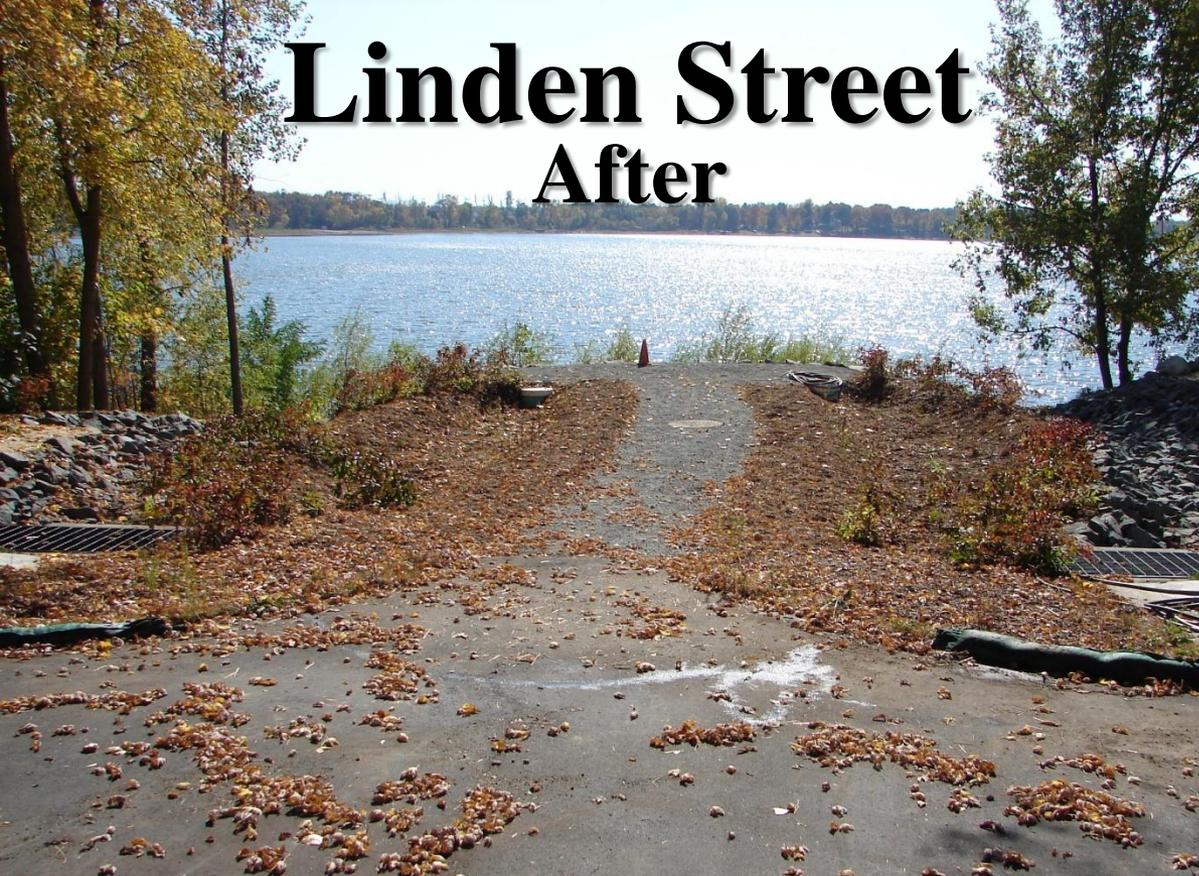
- 60 catchments in Center City, Chisago City & Lindstrom currently contributing:
  - Phosphorus
    - 393 pounds/year
  - Suspended Solids
    - 138,500 pounds/year
    - 70 Tons!
  - 328 ac-ft of water/year



# Linden Street Before



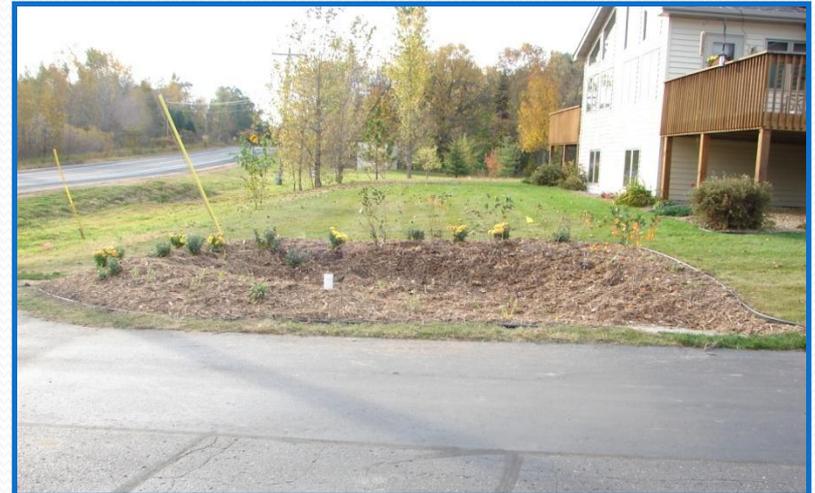
# Linden Street After



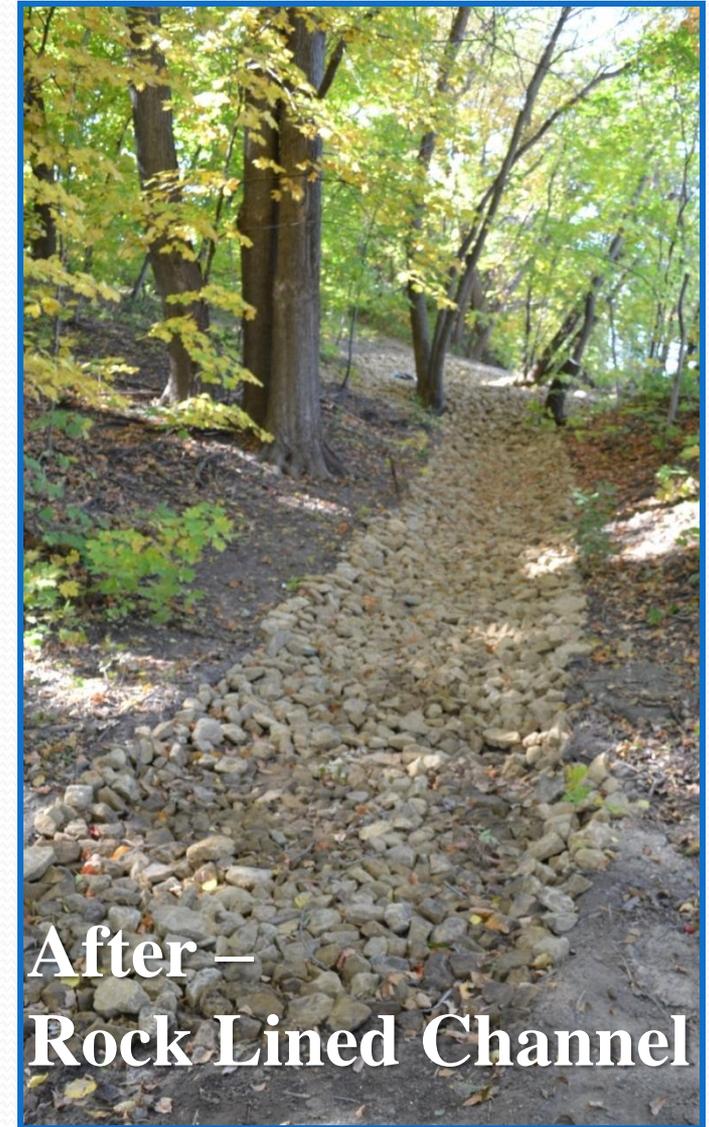
# Downtown Center City



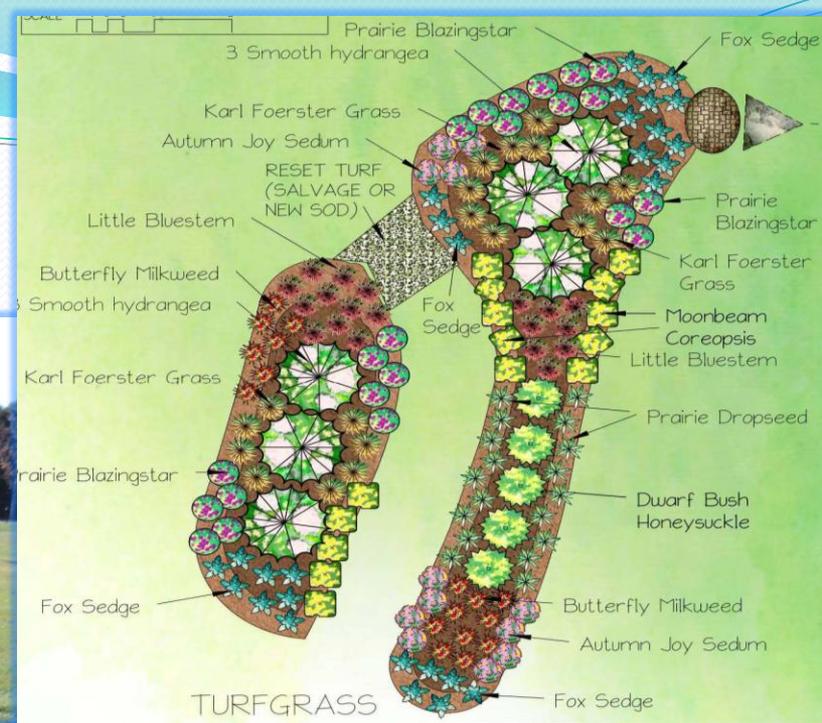
# Olinda Green Townhomes



# Chisago Lakes Lutheran Church

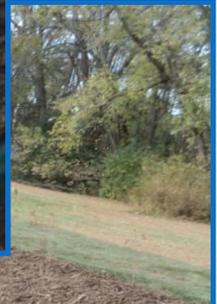


# Lakes Free Church



Planting to be completed  
Spring 2012

# Chisago Lakes Middle School



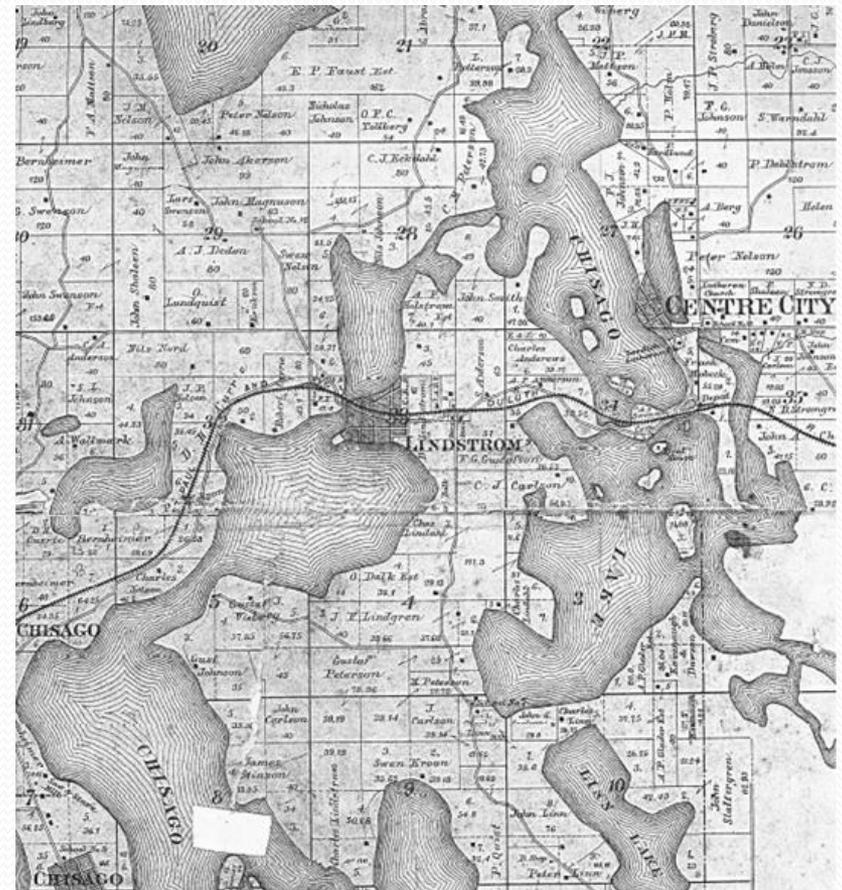


**GOAL:**

**Restore, improve and  
maintain navigation channels  
between the lakes**

# North Center/North Lindstrom Possible Channel Restoration

- Preliminary Feasibility Investigations
  - Channel background & need
  - Channel concept design
  - Easement requirements
  - Permitting requirements



# North Center/North Lindstrom Possible Channel Restoration

- Recommendations
  - Complete data gathering & analysis
  - Develop concept design into preliminary design
  - Voluntary Environmental Assessment Worksheet



EOI Inc. \Client\_County\00699\_Chicago\_Lakes\_Improvement\_Data\0023\_Prefeasibility\09\_GIMS\_ProjectName\GIS\Alignment\_1.mxd Date: 8/20/2011 3:10:27 PM Name: gpinson



FSA 2010 Photography

Chicago Lakes Improvement Feasibility Study





# **GOAL:**

**Protect, encourage and restore  
native shoreline to improve  
fish and wildlife habitat**

# Shoreland & Urban Best Management Practices

- Assistance provided to 9 landowners
- Projects include design or installation of lakeshore buffers and rain gardens



# GOAL: Promote environmental education, awareness and stewardship within the Chisago Lakes watershed

Your efforts helped to make the 2011 Chisago County Childrens Water Festival another successful year!





**GOAL:**  
**Promote the reduction  
of non-native aquatic  
invasive species**

# Watercraft Inspections

- Partnership with DNR
- Chisago/South Lindstrom Public Access
- 818 Boat Inspections / Education
- 23 Boats vegetation attached
- 49 Boats came from lake infested with Zebra Mussels
- 610 Boats – no previous inspection

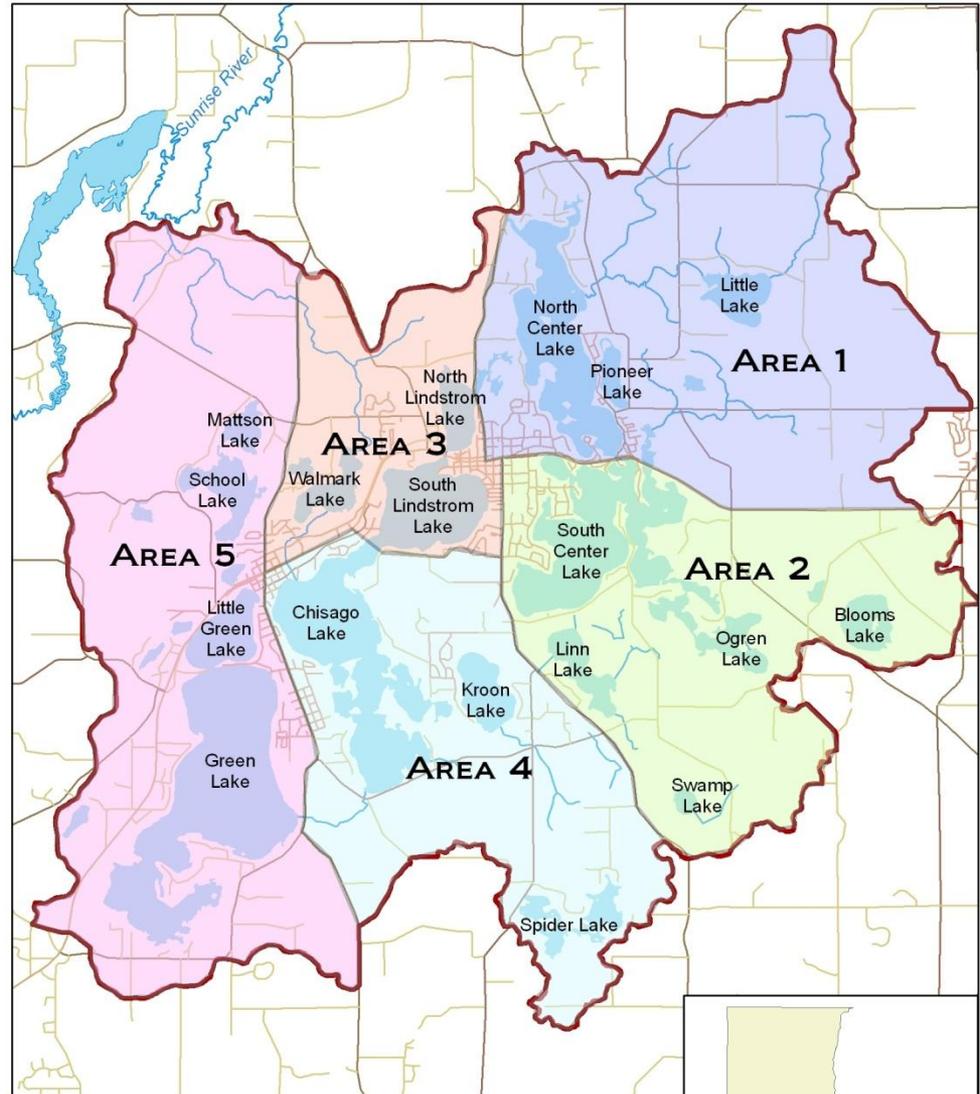


# By Laws: Meeting Dates & Locations

- First Monday every month, except Holidays
- Chisago County Government Center

January 9	May 7	September 10
February 6	June 4	October 1
March 5	July 2	November 5
April 2	August 6	December 3

# By Laws: Board Member Areas



Chisago SWCD  
2011

**Chisago Lakes Chain  
of Lakes Watershed  
Board Member Areas**



# By Laws: Election Timeline

	Lake Representation	Current Board Member	Next Election	2013	2014	2015	2016	2017
Area 1	North Center, Little, Pioneer	Bud Kapell	August 2014 changed to February 2015			Next election		
Area 2	South Center, Ogren, Linn, Bloom, Swamp	Al Singer	August 2012 changed to February 2013	One year term →	Next election			
Area 3	North/South Lindstrom, Wallmark	Al Wahlgren	August 2012 changed to February 2013	Three year term →			Next election	
Area 4	Chisago, Kroon, Spider	Chris DuBose	August 2012 changed to February 2013	Three year term →			Next election	
Area 5	Green, Little Green, School, Mattson	Fred Woodward	August 2012 changed to February 2013	Four year term				Next election
Area 6	At Large	Lou Sibik	August 2014 changed to February 2015			Next election		
Area 7	At Large	Leigh Hugo	August 2012 changed to February 2013	Four year term				Next election

After “Next Election” all terms would be 4 years

# 2011 Chisago SWCD Outstanding Conservationists



**Chisago Lakes Lake Improvement District**