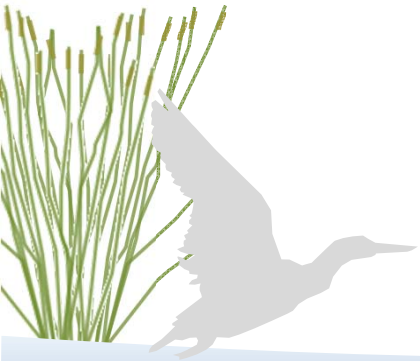
Lake Wingra Watershed Plan

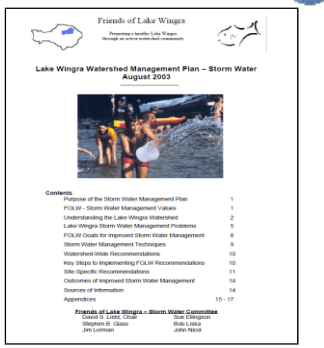
September 2015



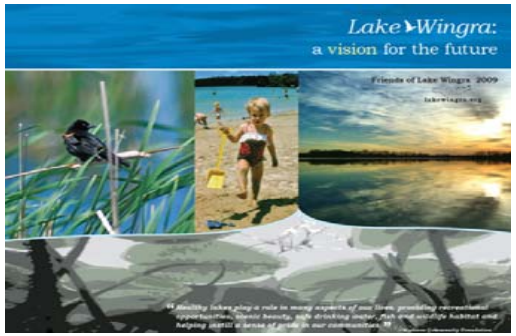
Background

Friends of Lake Wingra

Friends of Lake Wingra Founded in 1998



2003

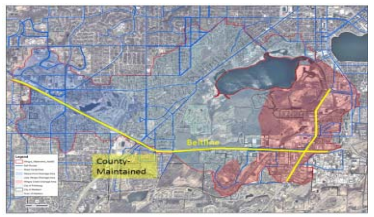


2009

Take a Stake In The Lakes

1998 2002 2006 2010 2014

Lake Wingra Watershed Management Plan: 2011 to Present



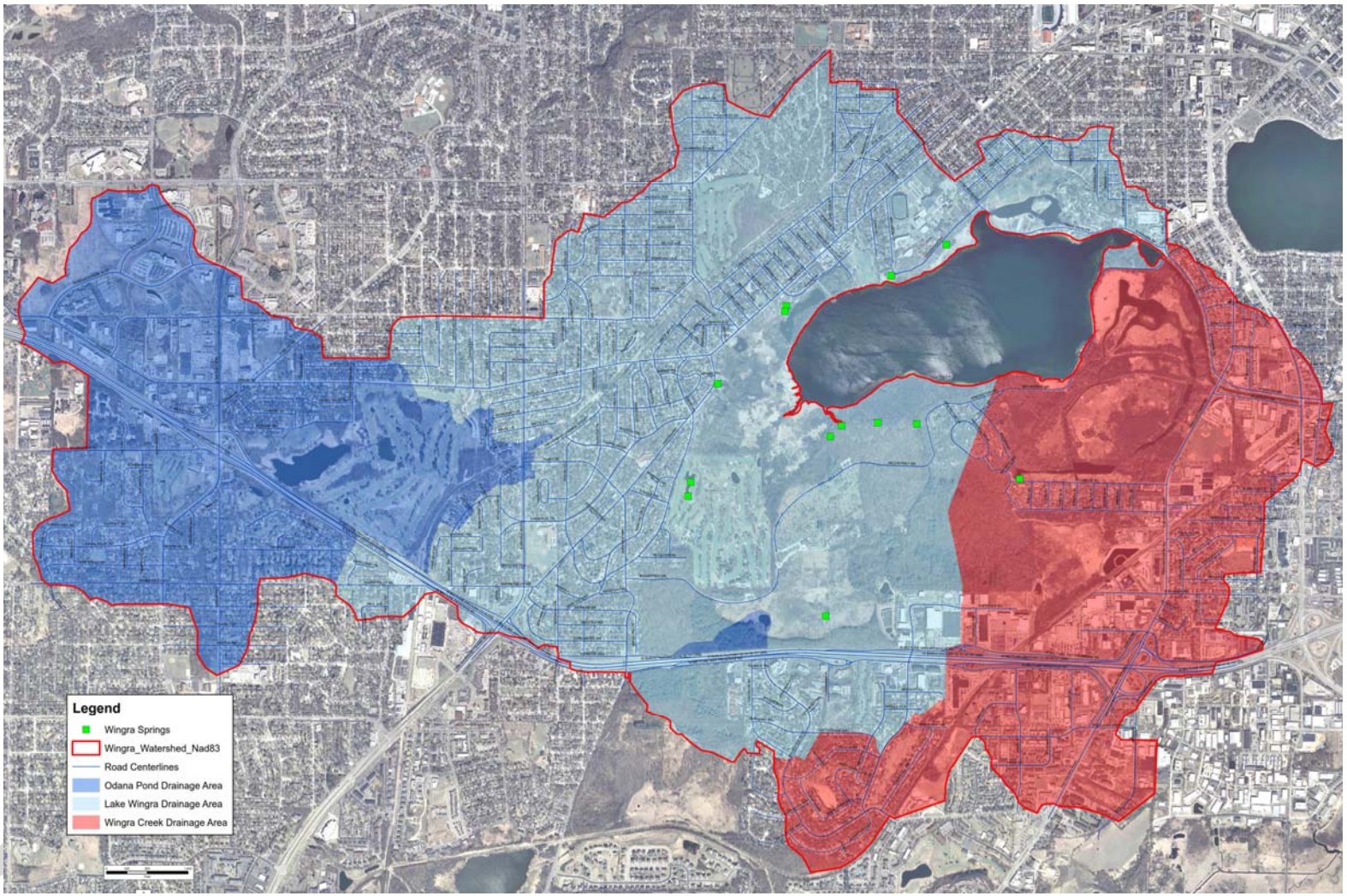
What is the Watershed Plan?

The Lake Wingra Watershed Plan is a joint initiative between the City of Madison and the Friends of Lake Wingra to achieve the goals listed in *"Lake Wingra, a vision for the future."* These goals include:

1. Clean, clear, water
2. Restored spring flow
3. Abundant native plants and animals
4. Stewardship and enjoyment

http://www.motherofalltrips.com/2011/08/allstate-amazon-gift-card-giveaway.html

Where is the Lake Wingra Watershed?



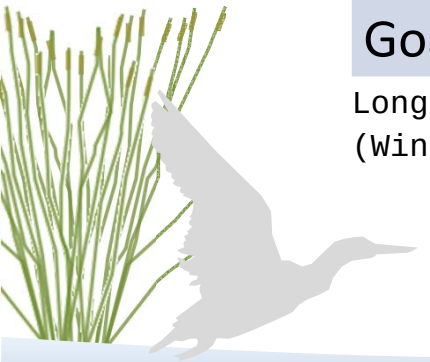
3636 acres

Specific Watershed Plan Goals

1. **Phosphorus:** Of the 1,900 pounds of phosphorus generated in the watershed each year:

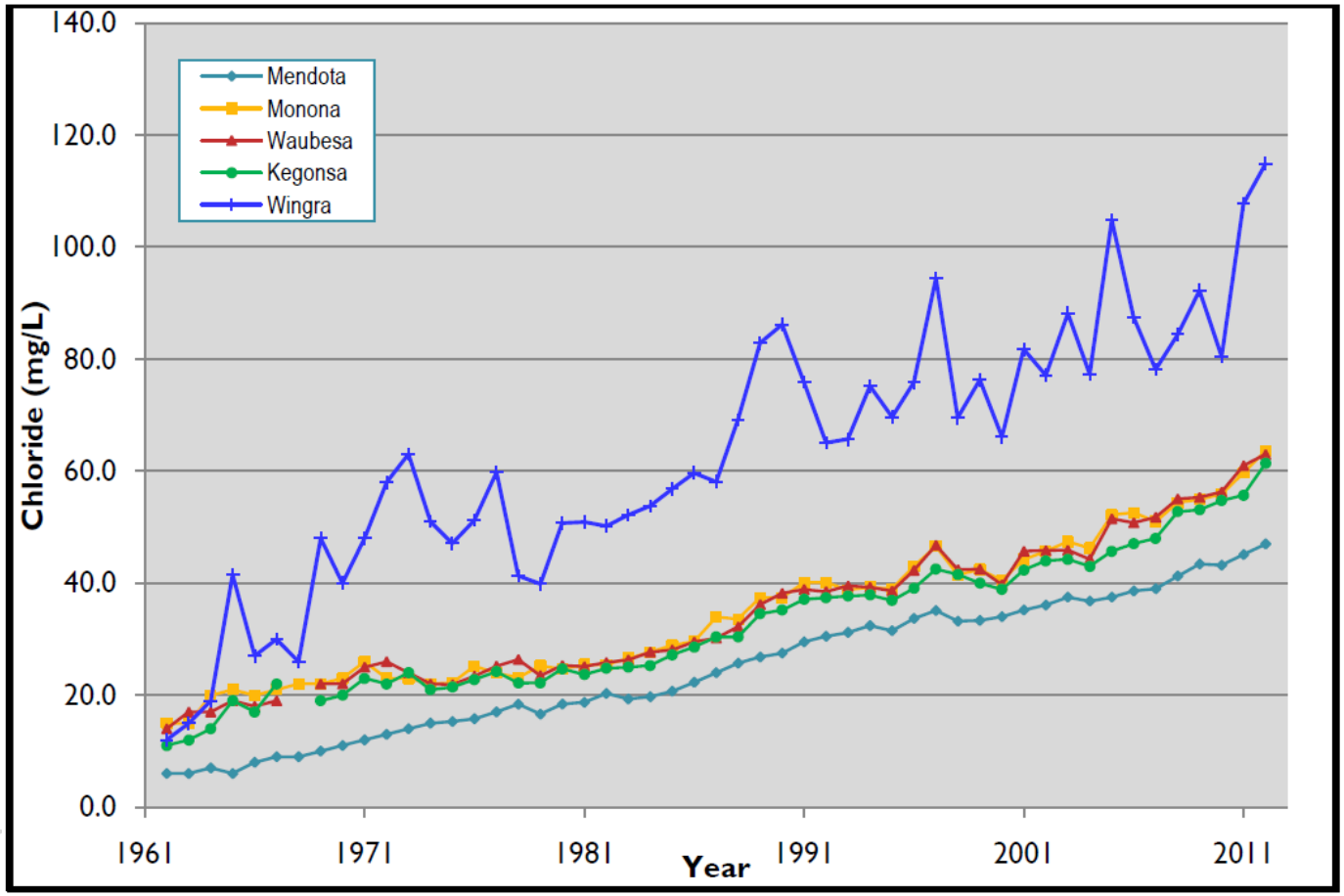
	Percent Reduction	Additional TP Removal Needed
Existing Conditions	*38.5%*	*731 lbs (current removal)*
Short-Term Goal	50%	218 lbs
Long-Term Goal	80%	570 lbs

Long Term Goal is 18% of Estimated City TMDL phosphorus reduction target (Wingra Watershed is ~12% of Madison TMDL area)



Specific Watershed Plan Goals

2. **Chlorides:** Change the lake chloride concentration from 120 mg/l to 40 mg/l that existed in the early 1970s.



2011 Salt Report

Specific Watershed Plan Goals

3. **Infiltration/Groundwater Recharge:** Of the 742 million gallons of lost infiltration due to development,

	Recover % of Lost Infiltration	Additional Infiltration Needed
Lost Infiltration	*NA*	*742 million gallons*
Existing Infiltration Facilities		*28 million gallons*
Short-Term Goal	10%	46 million gallons
Long-Term Goal	25%	112 million gallons

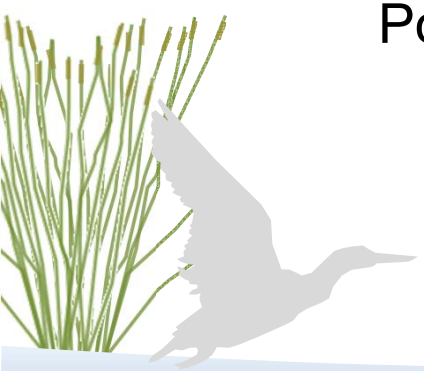
What can we do to reduce Phosphorus?

Structural Improvements

- Wet Detention Basins
- Bioretention Basins
- Rain Gardens
- Streambank Restoration
- Alum Addition to Wet Ponds

Non-Structural Improvements

- Construction Site Erosion Control Enforcement
- Modified Leaf Collection Methods
- Wetland Harvesting
- Modified Street Sweeping Methods/Schedule
- Pet Waste Enforcement
- Infiltration



What can/is the City doing to reduce Phosphorus?

Street Sweeping & Leaf Collection

Leaf Collection

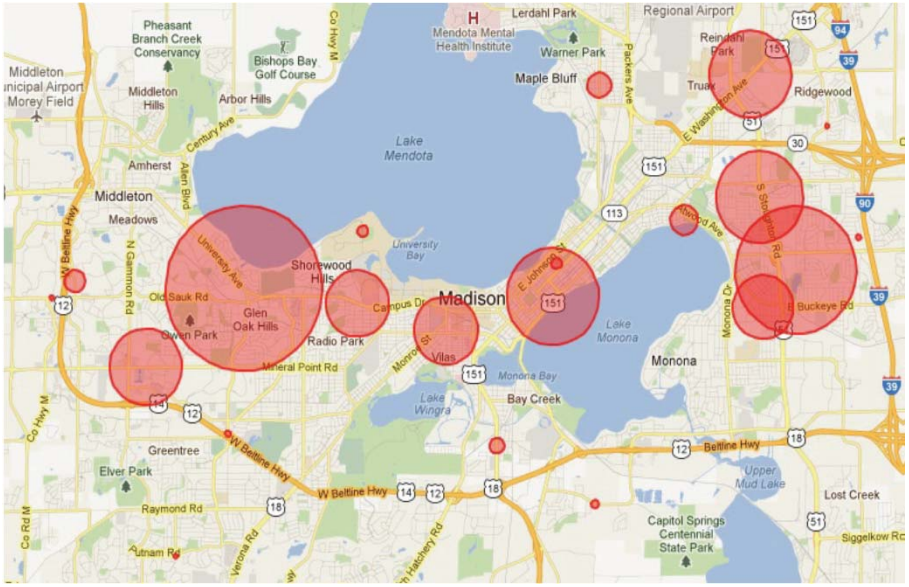
Construction Site Erosion Control

Constructing Basins

Why is salt a problem?

Road salt harms aquatic life

http://cutsalt.blogspot.com/2011_10_01_archive.html

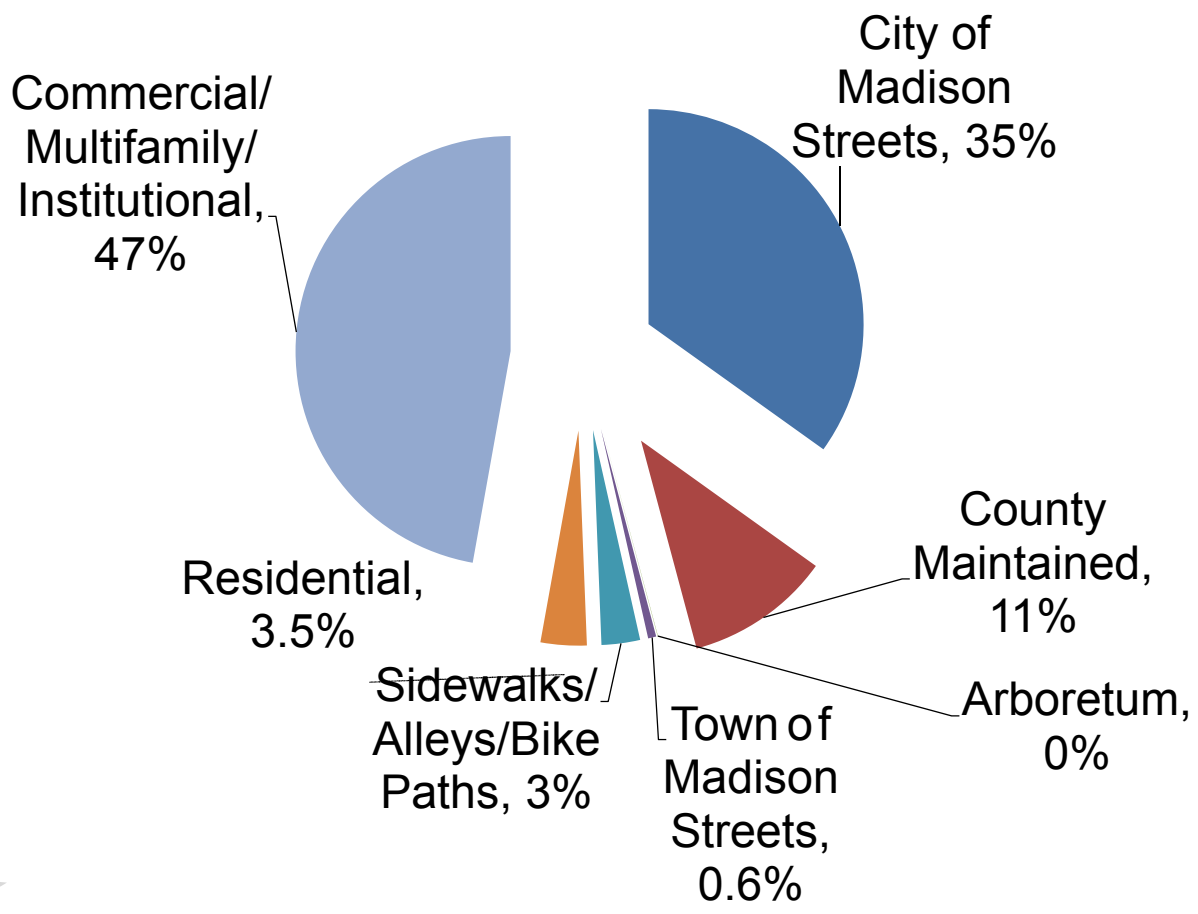


Madison Wells with Chlorides
From City of Madison 2011 Salt Report

Circle diameter proportional to chloride concentration

Estimated chloride contribution to Lake Wingra

2006-2012



How much salt do you use?

Spreading between **3 to 5 lbs** per 1000 square feet is sufficient to melt snow.

Studies show that both commercial and private applicators spread as much as **25 to 30 lbs** per 1,000 square foot!

Too much salt gets into our lakes
http://www.callcontour.com/landscaping/2012/12/just-enough-applying-salt-for-winter-de-icing

- Shovel your driveway promptly to avoid packing and the need for salt
- Use sand for traction. The City places sand for residents to use in several locations.
- Use less salt. You need much less than you think to melt snow and ice.

What can the City do to use less salt?

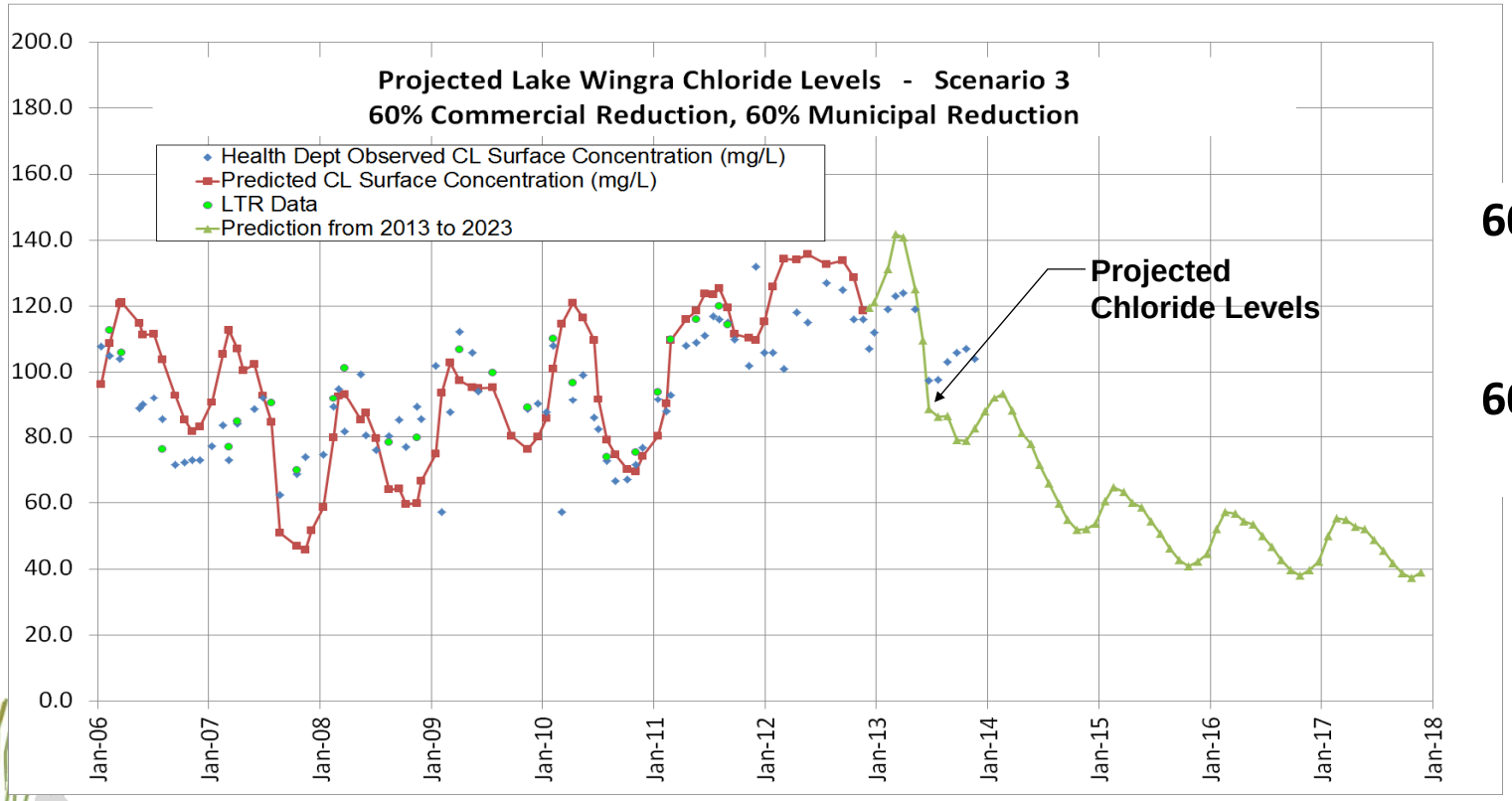
The City of Madison already takes substantial measures which include:

- Applying anti-icing solutions to pavements in advance of storms.
- Waiting until streets are plowed before applying salt.
- Using sand instead of salt on non-arterials.

After every storm the Streets Department receives numerous calls to *apply more salt.* Rarely are they asked to apply less salt.

The City's salt use is directly related to our expectations – changing our expectations will help the City use less salt.

What's needed to achieve goal?



Model Results

60% Commercial Reduction

60% Municipal Reduction

What if we don't reach 60% reductions?

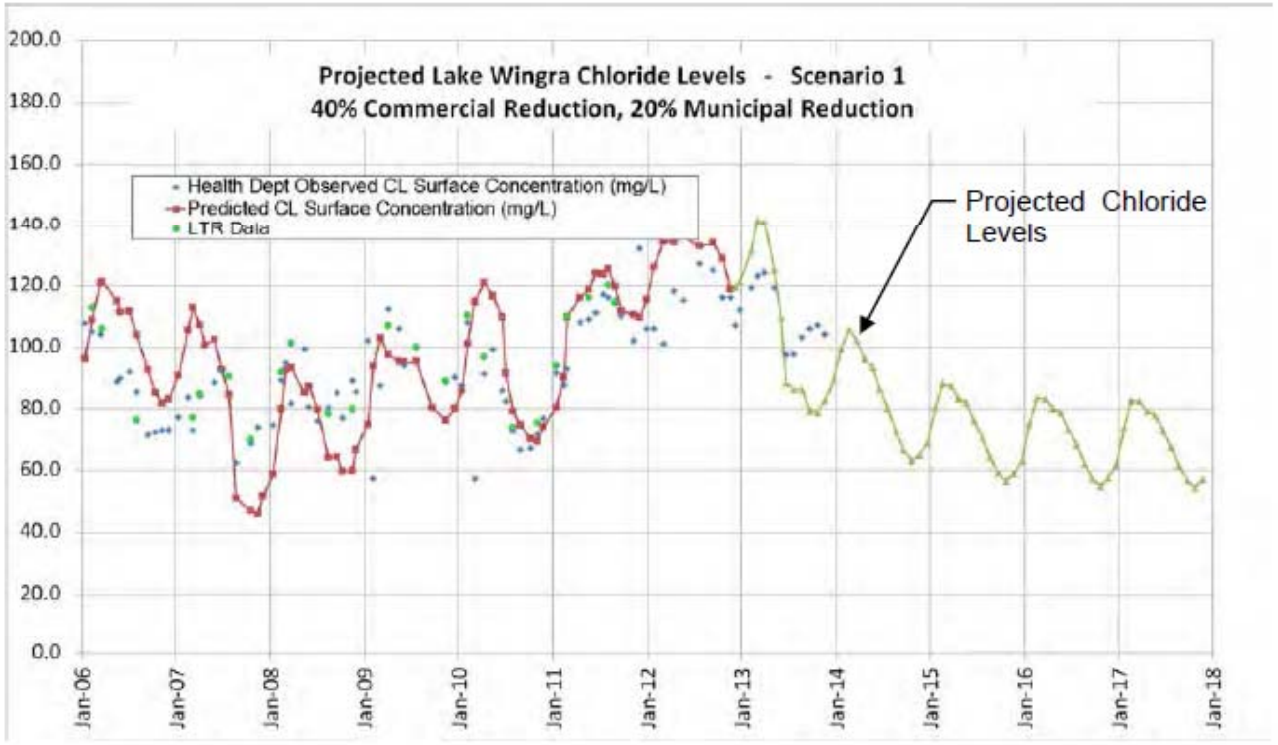
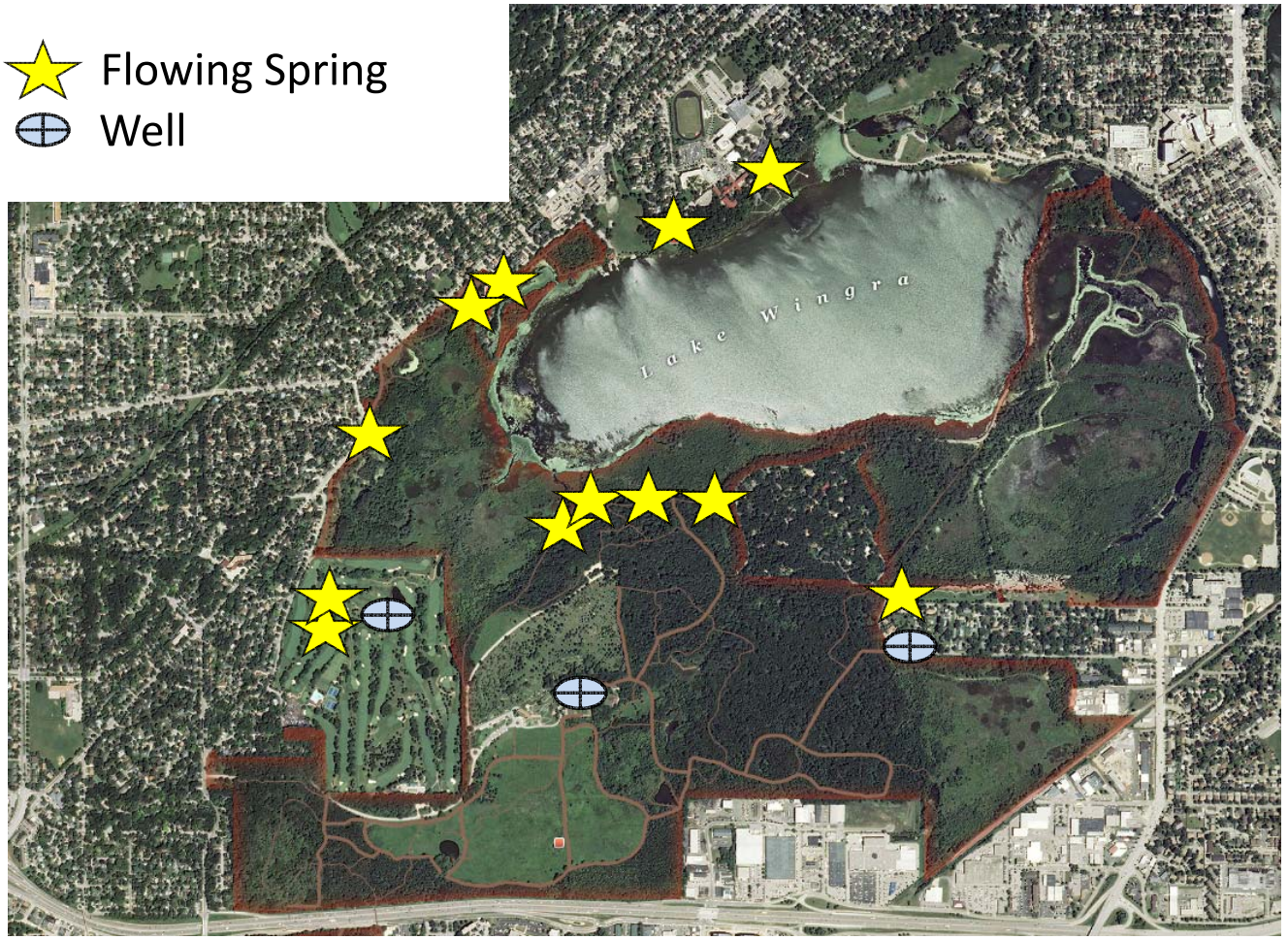


Figure 2.05-3 Reduction Scenario 1 Projected Chloride Levels

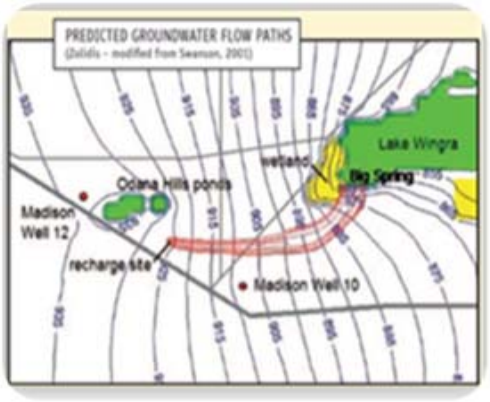
Why is spring flow important?

- At one time there were 33 springs flowing into Lake Wingra.

- Today, this number has been reduced to 13 springs
  (shown on the adjacent map)



What is currently being done to Increase Infiltration?



MG&E Infiltration Facility

Erosion Control and Stormwater Ordinances

City of Madison Initiatives

What you can do to increase spring flow

Driveway Tracks

Pavement Grids

Porous Pavement

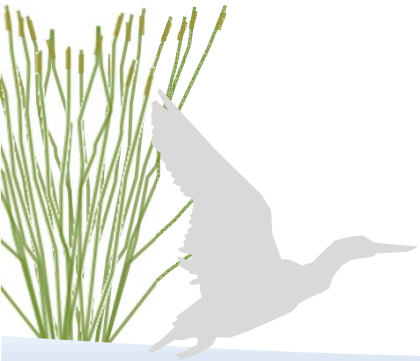
Terrace Rain Garden

Downspout Disconnection

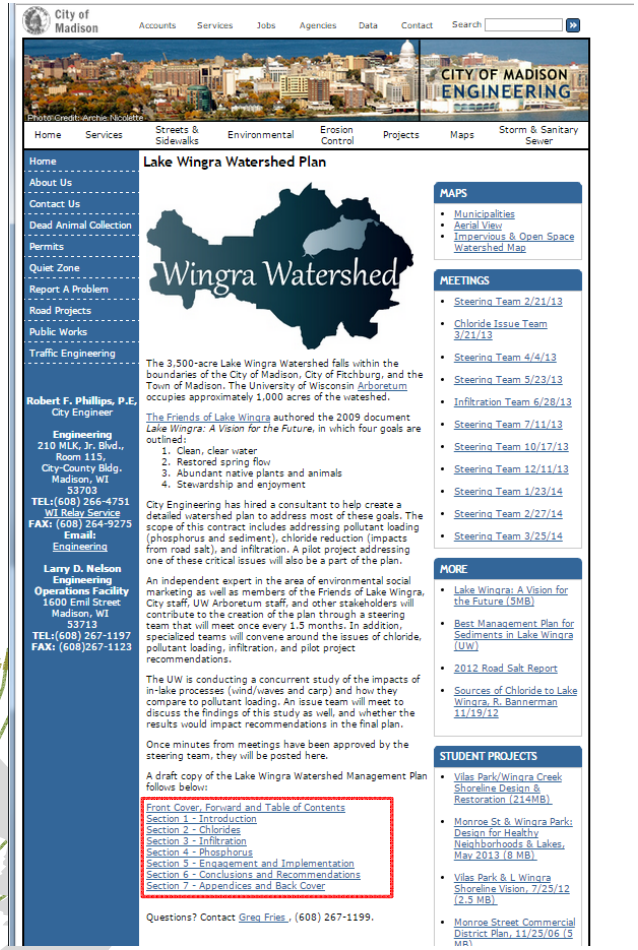
Rain Garden

What's needed to meet Short-Term Infiltration and Phosphorus Goals?

Goal	# Projects	Approx. Cost
Short-Term Infiltration Goal	12	$10.2 million
Short-Term TP Reduction Goal	1-5	$55,000 to $2.7 million
	TOTAL	$10.3 to $12.9 million



Where can I read the draft watershed plan?



Google “Lake Wingra Watershed Plan

Or

Go to:

www.cityofmadison.com/engineering/stormwater/wingraplan.cfm

What will happen with the Watershed Plan?

Finalize Watershed Plan Report

Seek Endorsements
- Neighborhood groups
- Advocacy organizations (Clean Lakes Alliance, Yahara WINS, etc.)

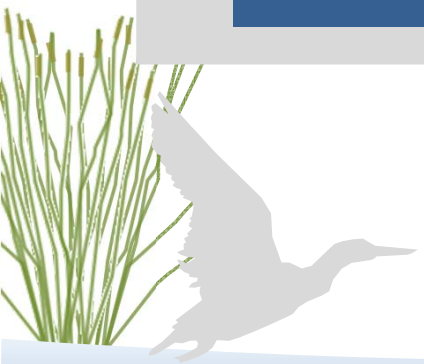
Seek City Approval
- Commission on Environment
- Board of Public Works
- Common Council

Phase 2 of Leaf Collection Pilot Project

Approval

Approval Process

Subsequent Challenges
- Funding
- Management Changes
- Community Buy-in
- Implementation



Proposed Catalyst Teams

Catalyst Teams

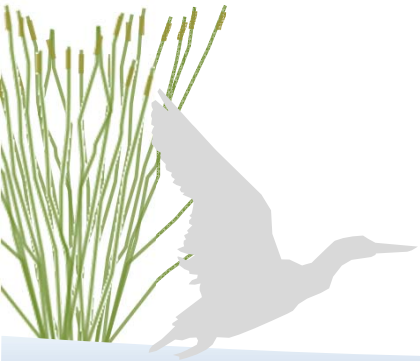
- **Phosphorus**
- **Chlorides**
- **Infiltration**

Residents
(management)
(advocacy)

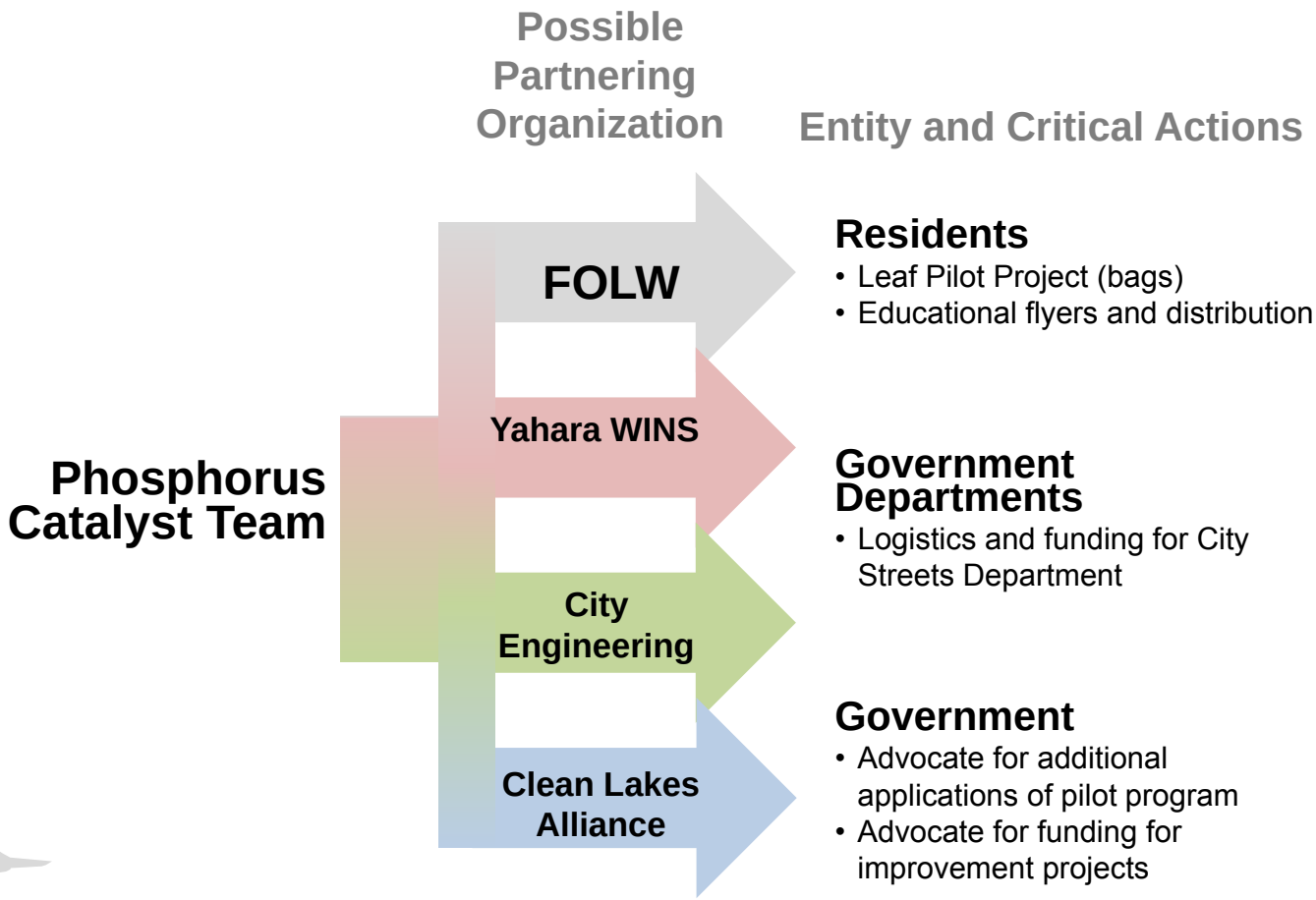
Commercial
(management)

Government Departments
(management)

Government
(legislation and project funding)



Catalyst Team Example

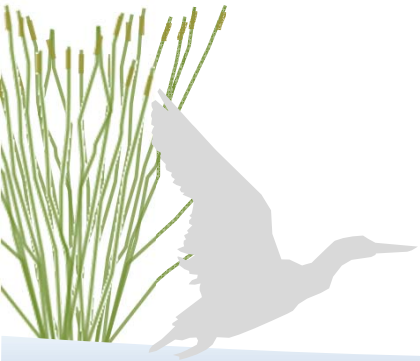


Pilot Projects

Management changes require a track record of success, both in implementation and effectiveness

Pilot projects provide this track record. The Wingra Watershed is an excellent place to host pilot projects because:

- Well organized neighborhoods
- Many residents have an environmental stewardship ethos
- Watershed has a dedicated advocacy group
- Watershed provides a smaller waterbody for evaluation



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