



# Silver Creek Pilot Project

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# The Fox River Contributes 1/3 of All Nutrients to Lake Michigan

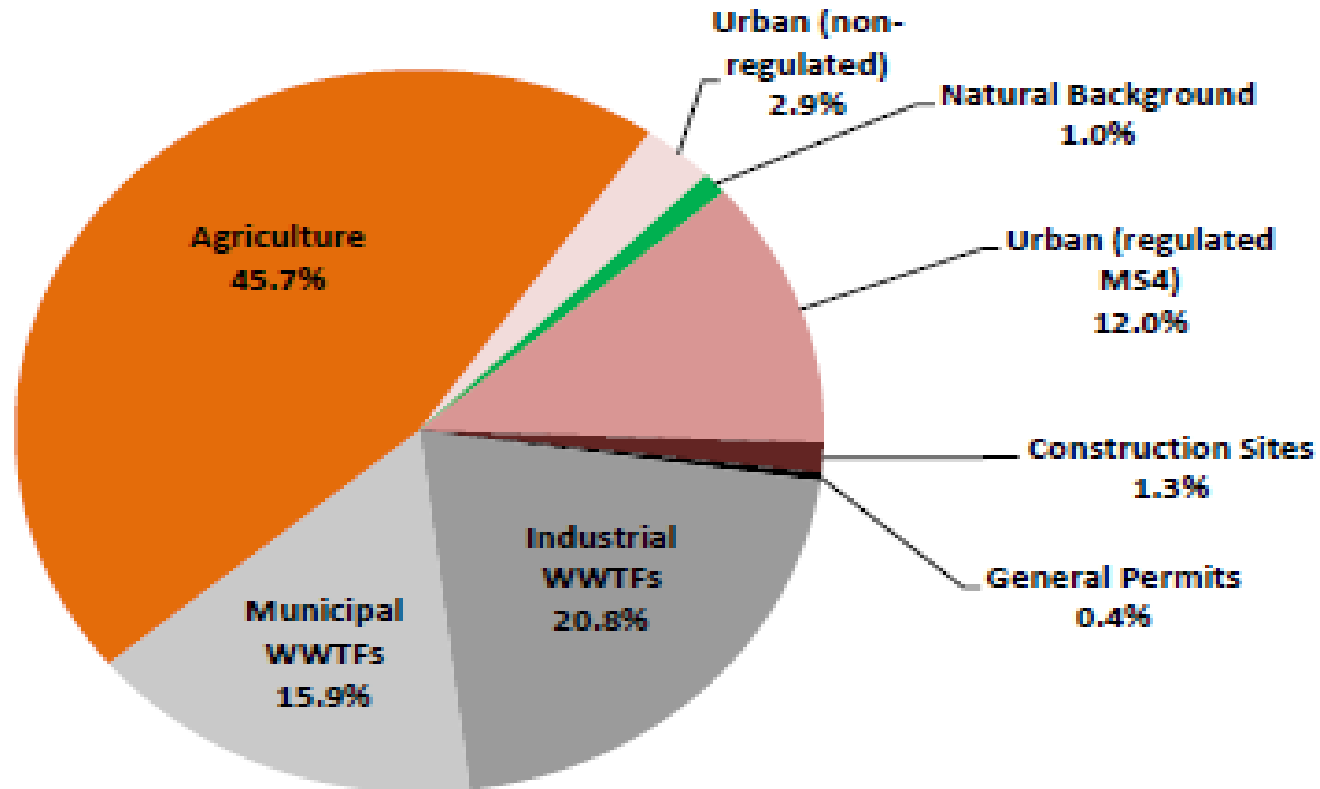


Photo credit: Steve Seilo ([www.photodynamix.com](http://www.photodynamix.com))

Photo April 15, 2011



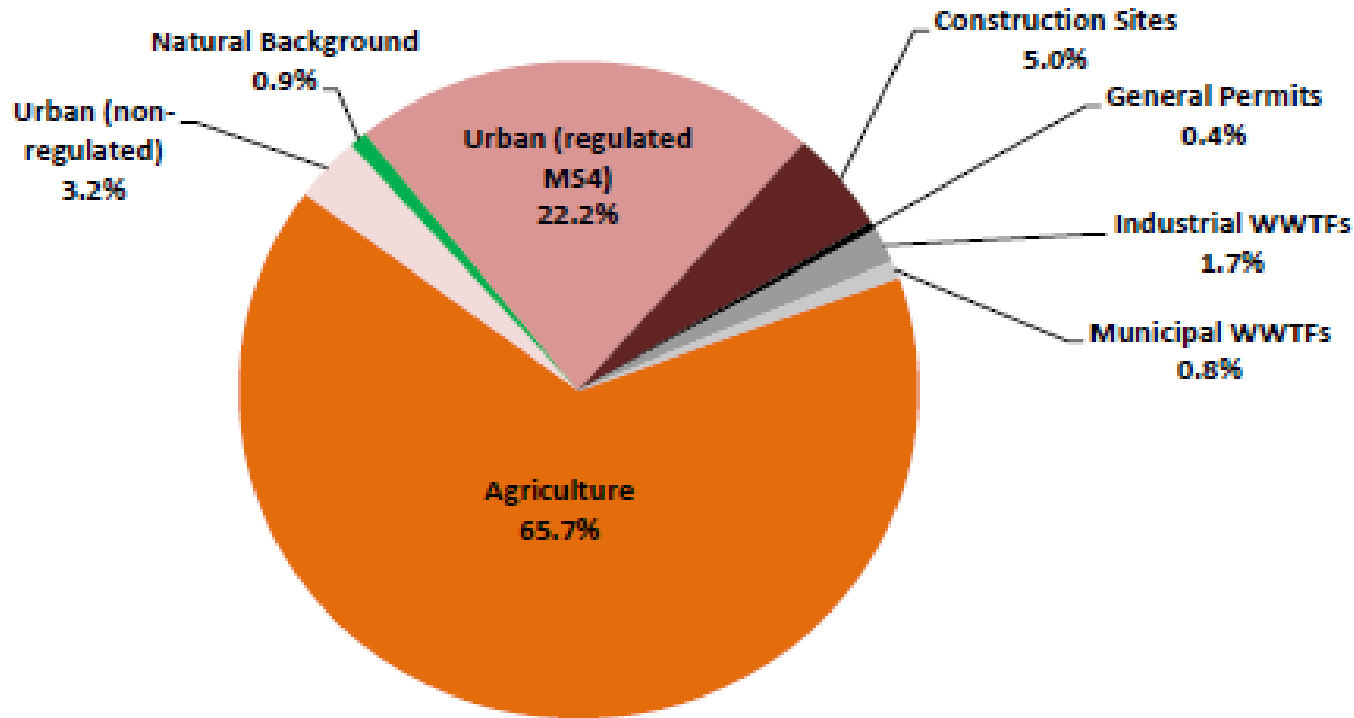
# Sources of Phosphorus in Lower Fox River Basin



(Data Source: Total Maximum Daily Load - TMDL Watershed Plan for Lower Fox River March 2012)



# Sources of Total Suspended Solids in Lower Fox River Basin



(Data Source: Total Maximum Daily Load - TMDL Watershed Plan for Lower Fox River March 2012)



# NEW Water's WPDES Permit

- Issued July 1, 2014
  - Current Total P limit = 1.0 mg/L
  - Future WQBEL limit = 0.2 mg/L
- Four alternatives for compliance with future effluent Total P limits
  - Variance
  - Facility improvements
    - \$223 - \$394 million capital cost + \$2 million annual O&M cost
  - Water Quality Trading
  - Adaptive Management
- Decision by 2018
  - Based on success in Silver Creek Pilot Project





# What is Adaptive Management?

- A voluntary option for point source facilities to comply with future phosphorus limits.
- Watershed approach where a point source can fund other point or nonpoint sources to control phosphorus and sediment.
- A strategy built on partnerships between point source facilities, municipalities, industry, landowners, private and public groups.
- Focused on permanent watershed improvements.



Simply stated, the Silver Creek Pilot Project is about NEW Water's permit and the possibility of spending \$223 to \$394 million to meet its permit

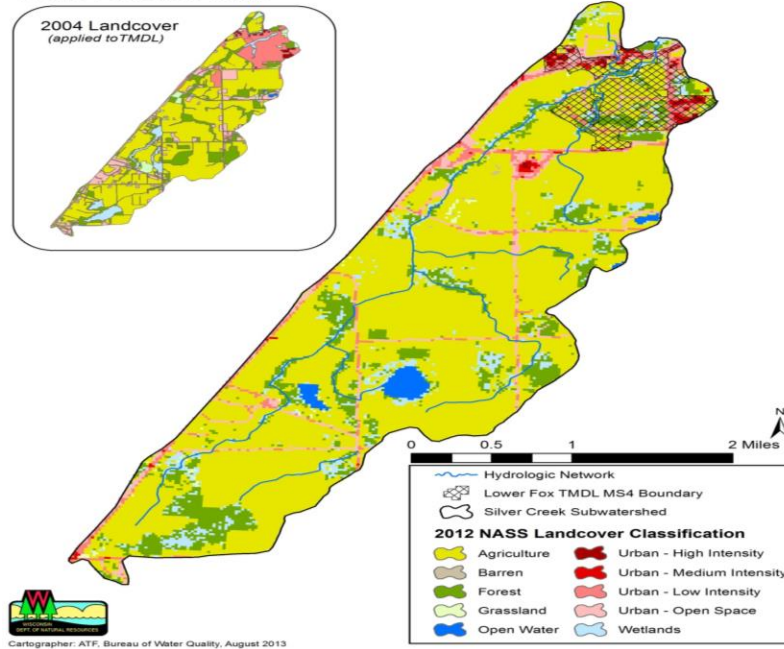
So, this project is asking:

Can we meet our permit requirements by working with others, how much would that cost, and can working with others provide benefits more than just meeting a permit?

# Silver Creek Pilot Project

Silver Creek Watershed (LF05-8) a sub-watershed of the Lower Duck Creek (HUC12 040302040106)

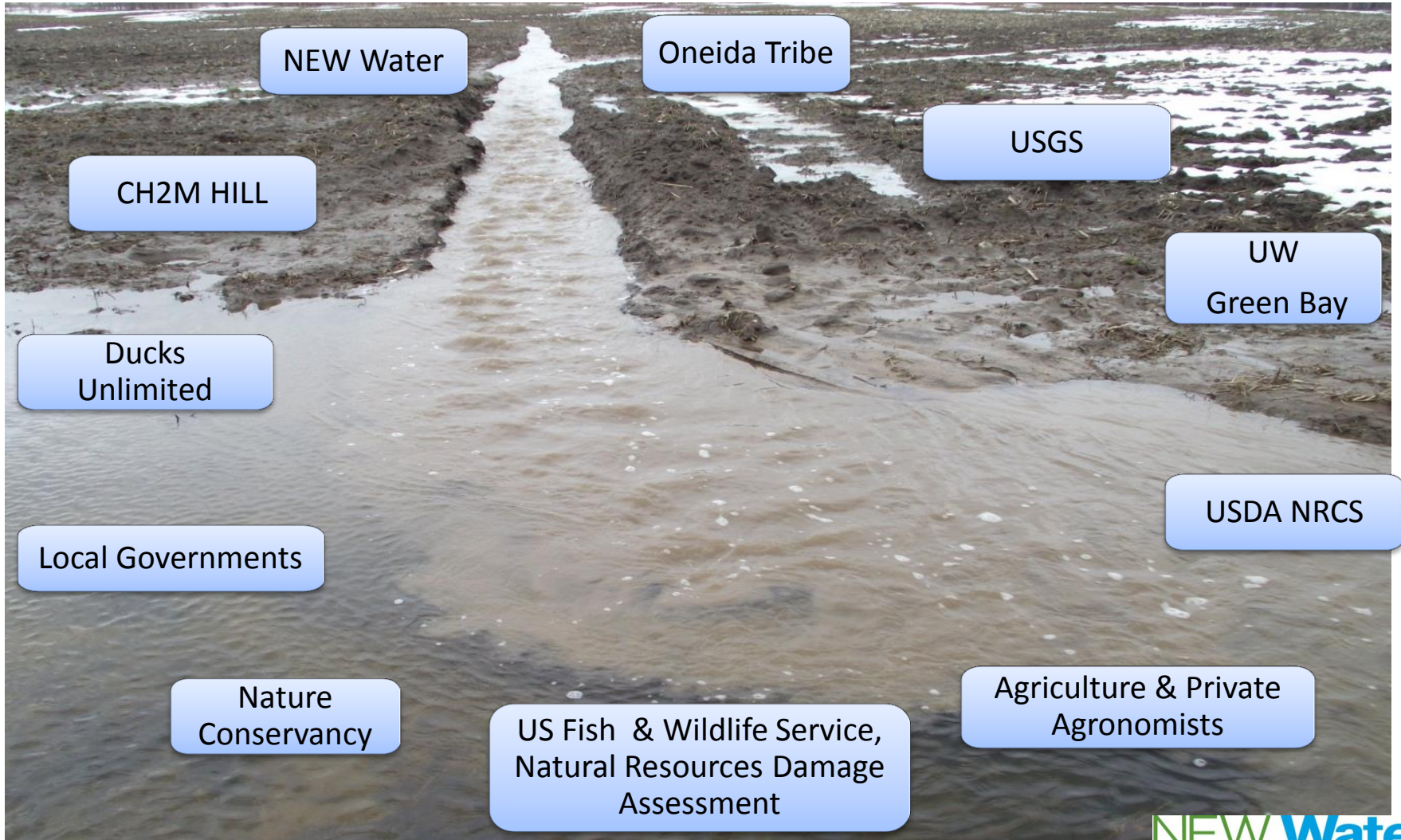
Silver Creek Subwatershed Landcover  
Lower Fox River Basin



<b>Watershed Area</b>	4799.8 acres (7.50 mi <sup>2</sup> )	
<b>MS4</b>	346 acres (7.2% of watershed)	
<b>Land cover</b> 2012 Cropland Data Layer USDA NRCS	Agricultural	<b>2296.4 acres (47.8%)</b>
	Forest	585.1 acres (12.2%)
	Grassland	12.3 acres (0.3%)
	Pasture	1065 acres (22.2%)
	Urban	503.9 acres (10.5%)
	Water	64.5 acres (1.3%)
	Wetlands	272.6 acres (5.7%)
<b>Stream Length</b>	<b>14.93 miles</b>	
<b>TMDL Phosphorus Baseline Load</b>	<b>3391 lbs. (0.71 lbs. per acre)</b>	



# Developing Project Partnerships



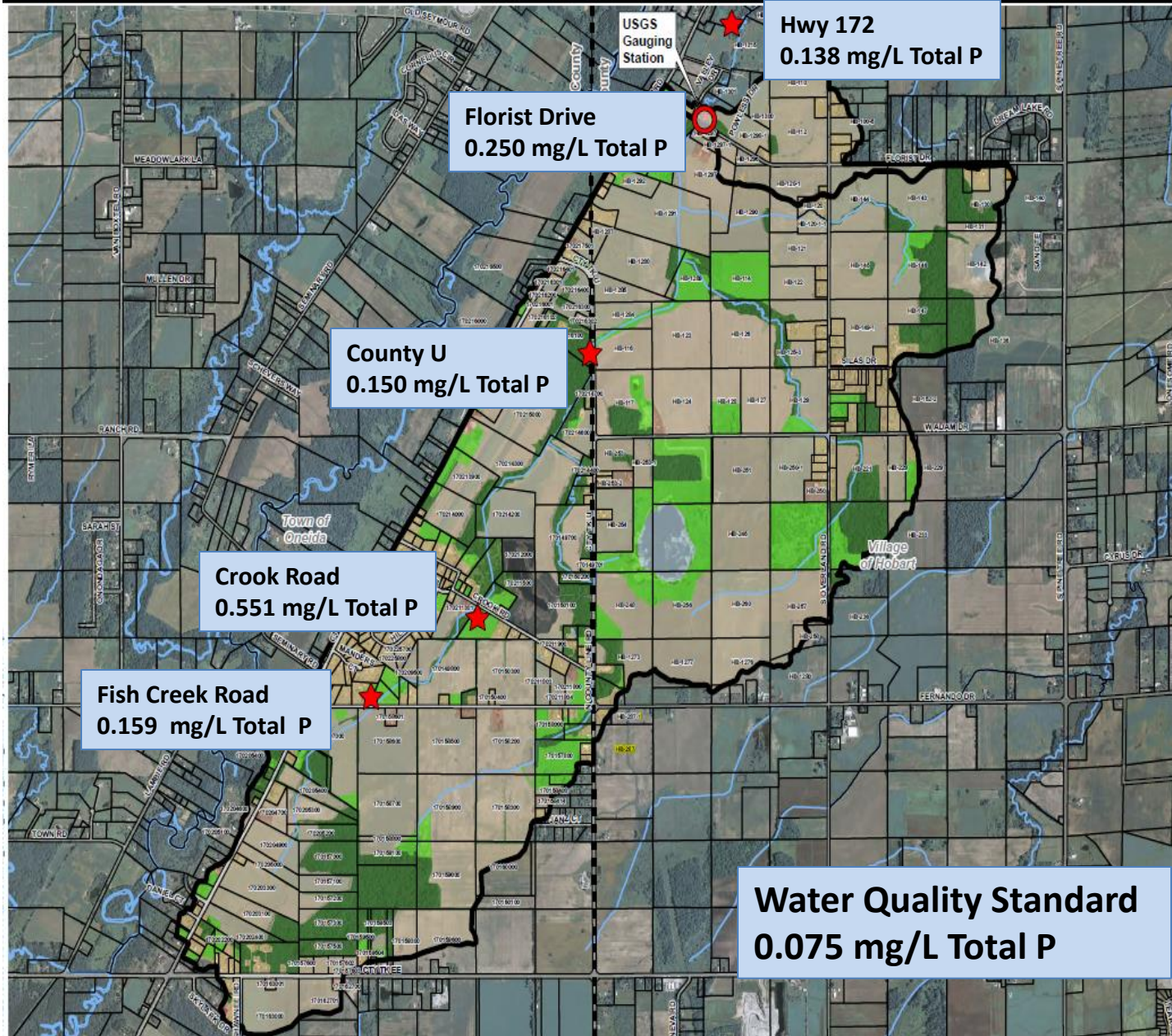


# Progress in 2014

- Grants
  - \$140,000: Ducks Unlimited
  - \$100,000: NRDA USFWS
- GIS Database was developed
- Soil sampling
  - 123 fields
  - 2.5 acre grid (over 900 samples)
  - 99% landowner participation rate
- Stream biological assessment
- Stream survey
- Water quality monitoring



# Water Quality Monitoring: 2014 Annual Averages





# Next Steps

- Finish soil sampling
- Develop Nutrient Management Plans and review with grower
- Schedule field walks and develop Conservation Plans
- Enrollment into programs and identify cost share needs
- Implement some best management practices (BMPs)
- Wetland restoration planning
- 2018: NEW Water must provide information to DNR regarding future direction of phosphorus reduction options as required in WPDES permit
  - Is Adaptive Management a more cost-effective solution than capital investment at the treatment facility?
  - Can more phosphorus and sediment be removed from the watershed through Adaptive Management than facility improvements?



# Can We Be Successful Improving Water Quality?





# Questions?

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