Leadership for Wisconsin Watersheds: Making Projects Work

TUESDAY, MARCH 20th, 2012

Funding

Lessons learned

What makes projects work?

Monitoring

Goals, approach/strategies

What's next in the project

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Funding
Background information

Brown County Watersheds Program Funding History 1983-2011	Total Grant $ 1983 – 2011 Spent
West Shore Pike Restoration Project (2007) NRDA, Great Lakes Restoration Initiative	$543,742
Baird Creek Buffer Project Great Lakes Restoration Project (2010)	$101,396
Branch River Priority Watershed (1996)	$3,016,516
East River Priority Watershed (1993)	$2,729,332
Duck, Apple/Ashwaubenon Creeks Priority Watershed (1997)	$1,445,515
Red River Priority Watershed (1995)	$228,838
Kewaunee River Priority Watershed (1983)	$135,103
Baird Creek grants (EPA Grant 1999, DNR, 2002-3 buffer grant)	$125,100
TOTAL	**$8,325,542**

Lessons Learned

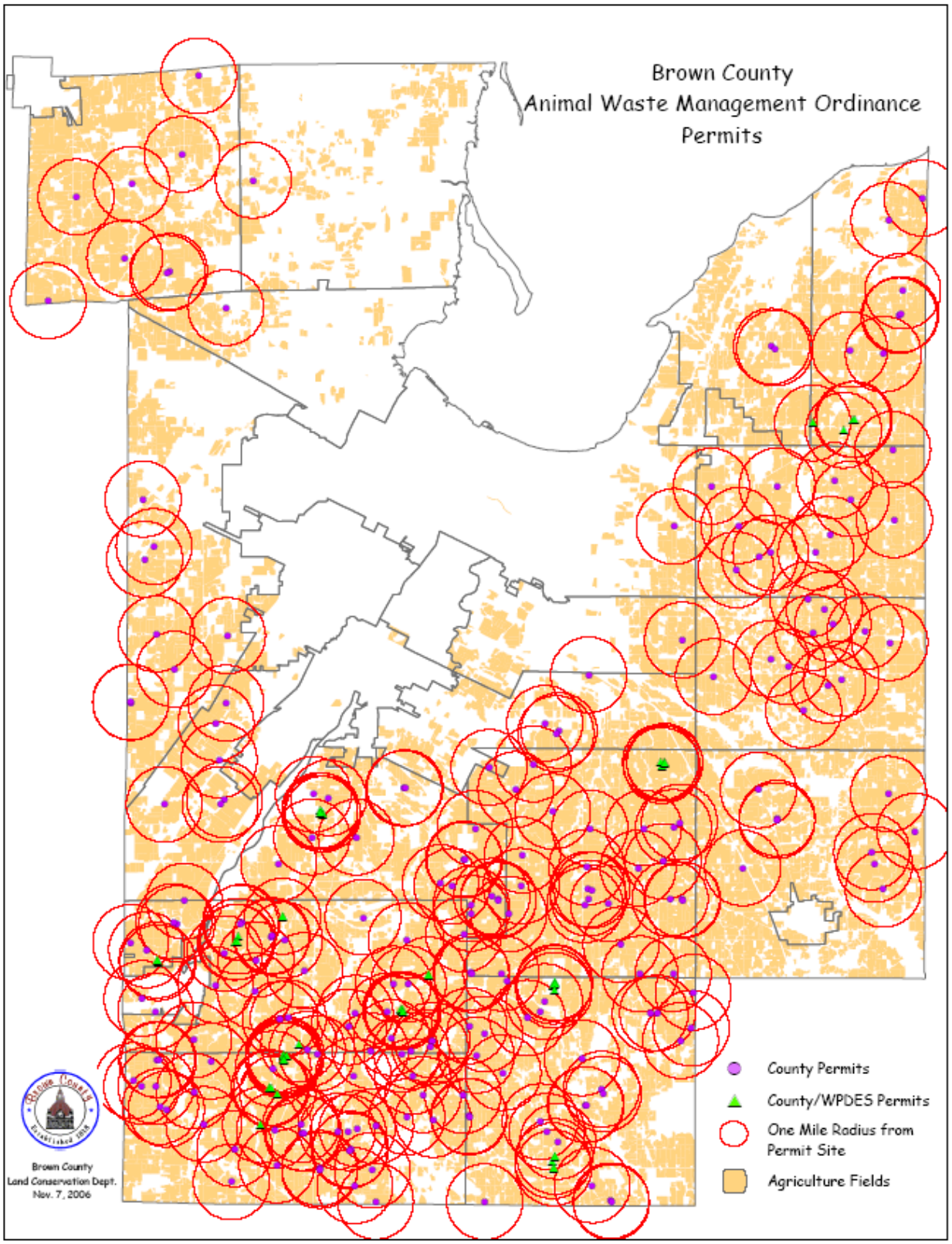
Most popular conservation practices adopted:

- Animal Waste Storage **374 permits** since 1986.
- Barnyard runoff
- Nutrient Management (590) **110,000 acres** in 2011. (Nutrient management was not available in early watershed projects)

Least popular conservation practices adopted:

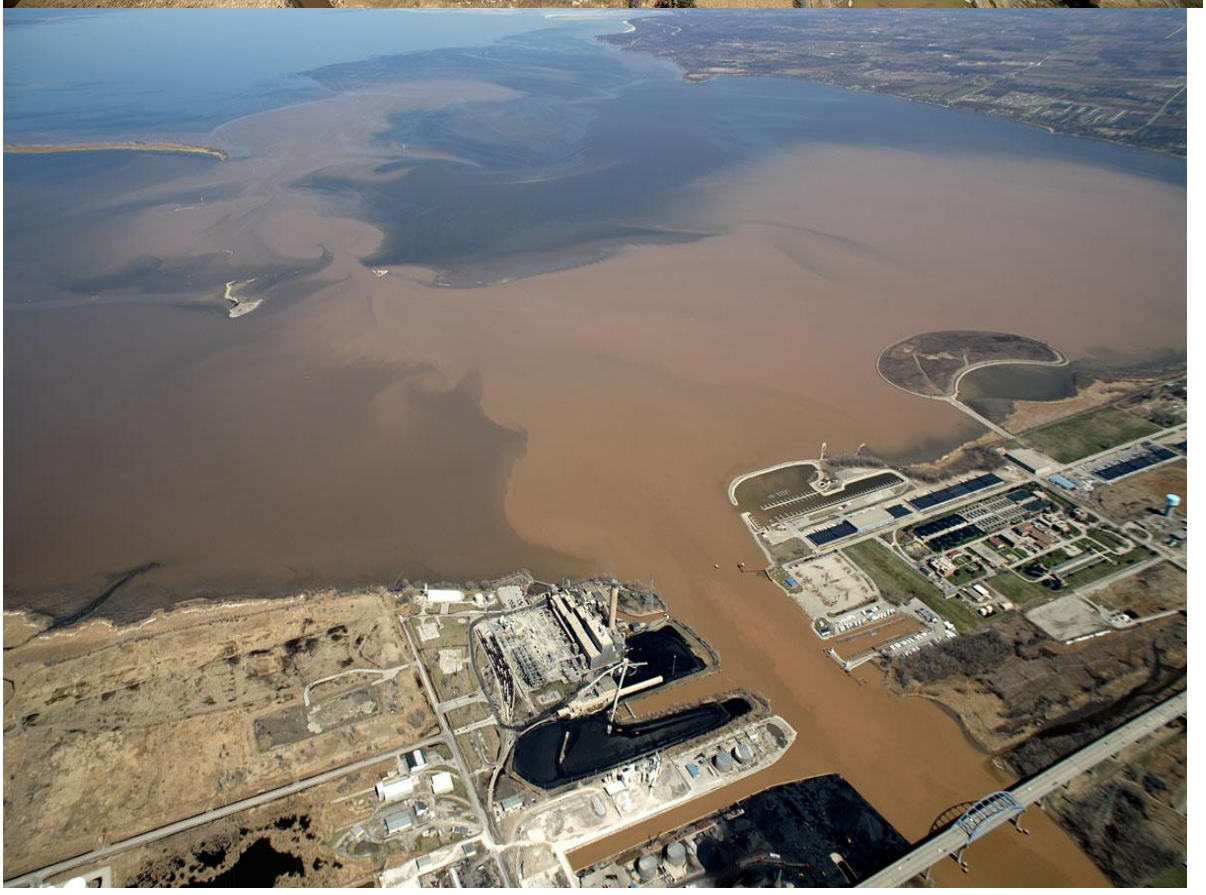
- Grassed Waterways
- Buffers
- Cover Crops

Most Popular:
Animal Waste and Barnyards



Not Popular: Grassed Waterways, Buffers, Cover Crops

April 15, 2011 - Results



Water Quality

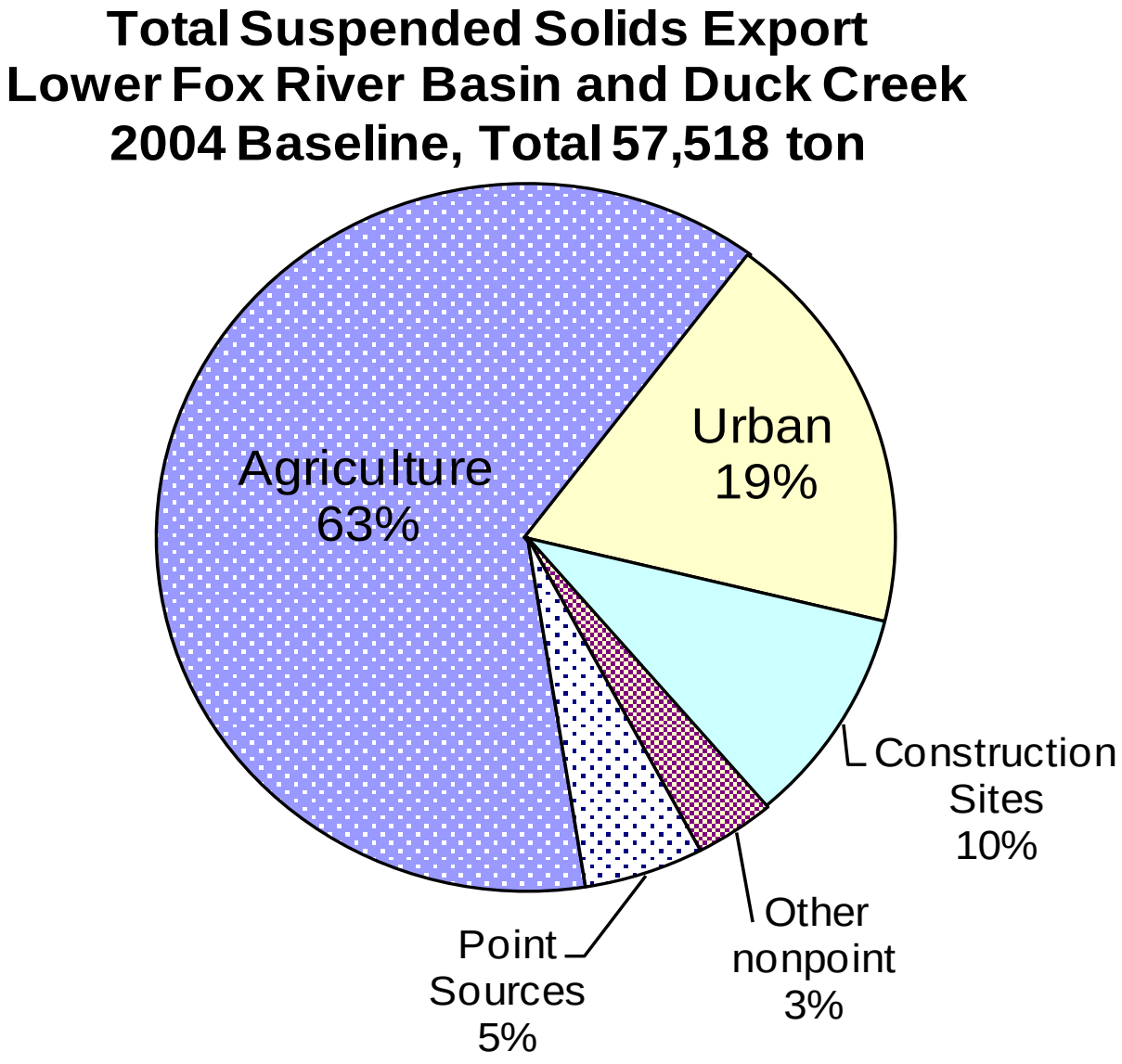
Surface Water

The Fox River is the **3rd largest** contributor of Sediment to Lake Michigan of all tributary streams.

(U.S.G.S. Water Resources)

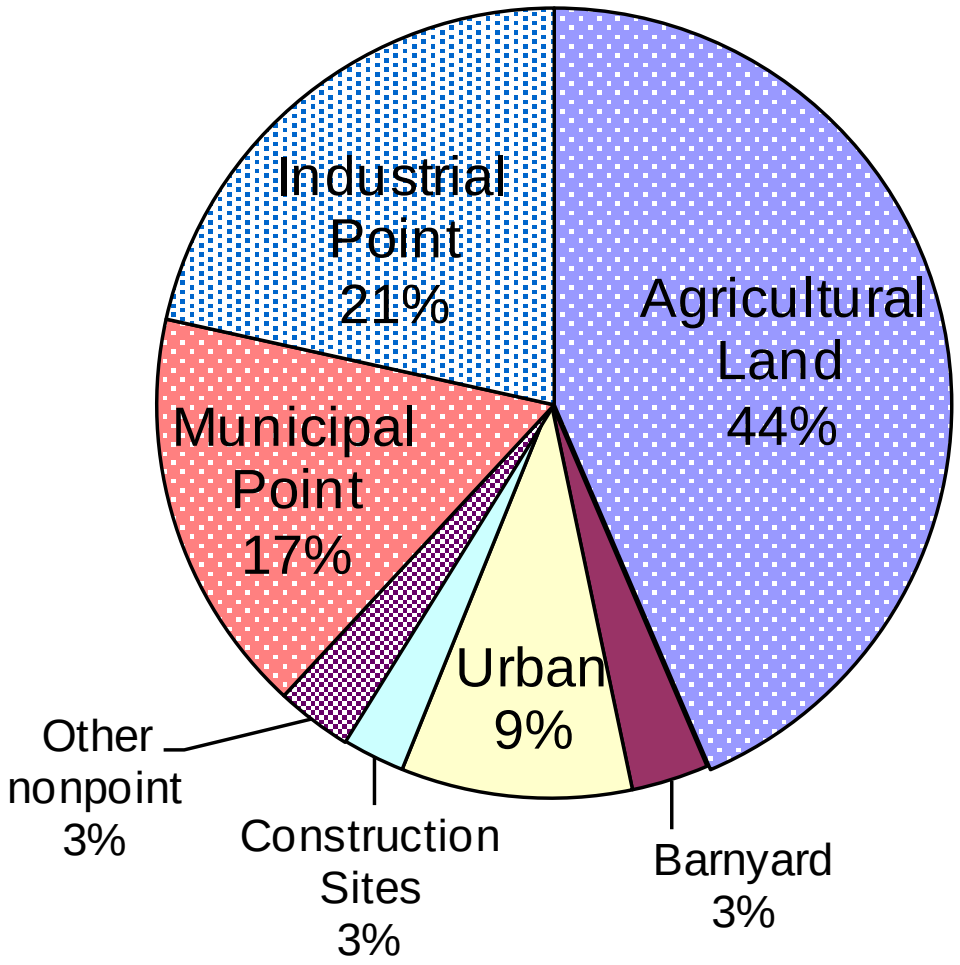
Private Agronomists: 590 Plan is good for animal waste spreading, but they will not tell farmer to install waterways, buffers or address concentrated flow for risk of losing their client.

Surface Water Suspended Sediments



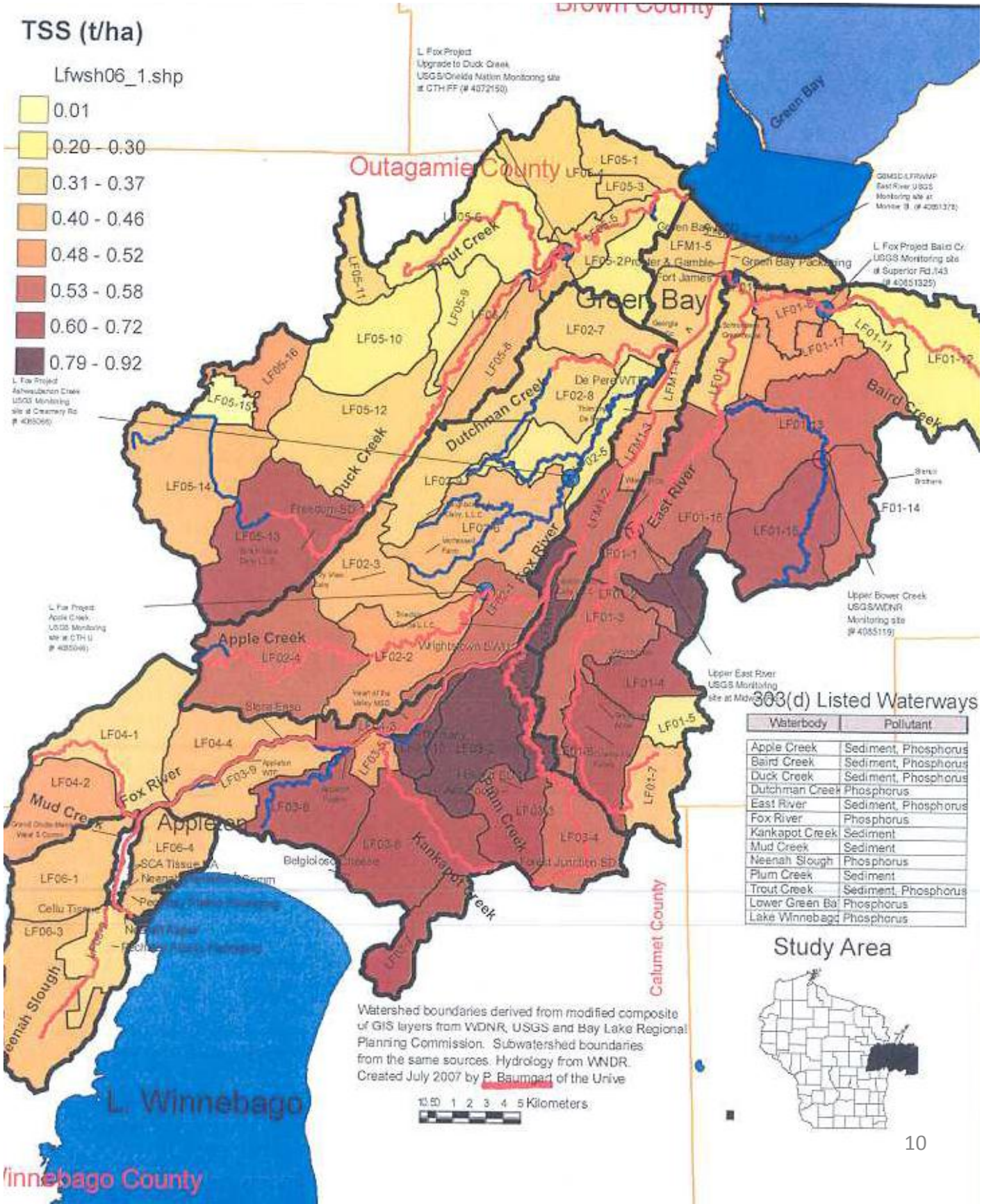
Surface Water - Phosphorus

Total Phosphorus Export
Lower Fox River Basin and Duck Creek
2004 Baseline, Total 238,912 kg



(Data Sources: Integrated Watershed Approach Demonstration Project: A Pollutant Reduction Optimization Analysis for the Lower Fox River Basin and the Green Bay Area of Concern. August 2007; prepared by the Cadmus Group for the U.S. EPA, with contributions from the University of Wisconsin-Green Bay, 26 pp. Solids data from P. Baumgart, UW-Green Bay, 2008.)

Suspended Sediment



Why are grassed waterways, buffers and cover crops not popular?

LAND USE TRENDS

Brown County total land area approximately 350,000 acres.

Year	Farms	Land in Farms
1954	2,672	300,900 acres
1972	1,920	274,800 acres
1978	1,730	263,400 acres
1983	1,480	241,500 acres
2008	1,053*	**162,000 acres**
2011 ?		

Source: 1991 Brown County Farmland Preservation Plan; NASS 2007*, 2009

Brown County Crop Production Overview

Less crop acres, more corn silage, more soybeans, less conservation tillage, less hay and cover crops . Need more waterways, concentrated flow channels and buffer strips to reduce sediment and phosphorus delivery to Streams and Green Bay.

Crop	1969	1981	2008
Potatoes	50		
Barley	700	750	
Corn	67,800	65,000	62,000
Hay	**87,000**	**74,000**	**61,000**
Peas	1,600	2,500	
Oats	47,300	31,500	
Snap Beans	300	1,200	
Soybeans	100	200	**22,400**
Sweet Corn	2,100	1,600	
Wheat	150	2,050	**15,800**
Total acres	207,100	178,800	**162,000**

Higher percentage of Corn, Soybeans, Wheat
Lower percentage of Hay
Oats eliminated
Cropping trends = Less Ground Cover over winter

Brown County Dairy Production Overview

Higher cow numbers, higher milk production has lead to more intensive cropping practices. Grassed waterways , concentrated flow channels and buffer strips are needed to reduce sediment and phosphorus delivery.

	1969	**1981**	**2008**
Production/Cow Lbs./head/year	9,959	13,200	**22,300**
Number of Cows	40,919	39,200	41,000
Number of Herds	1,348		**239**
Average Herd Size	~30		~172
All Cattle numbers		91,400	**105,000**
1000 AU operations	**0**	**2**	**18**

Higher milk production = higher manure production

Reduced herds , Bigger herd size, Concentration of livestock

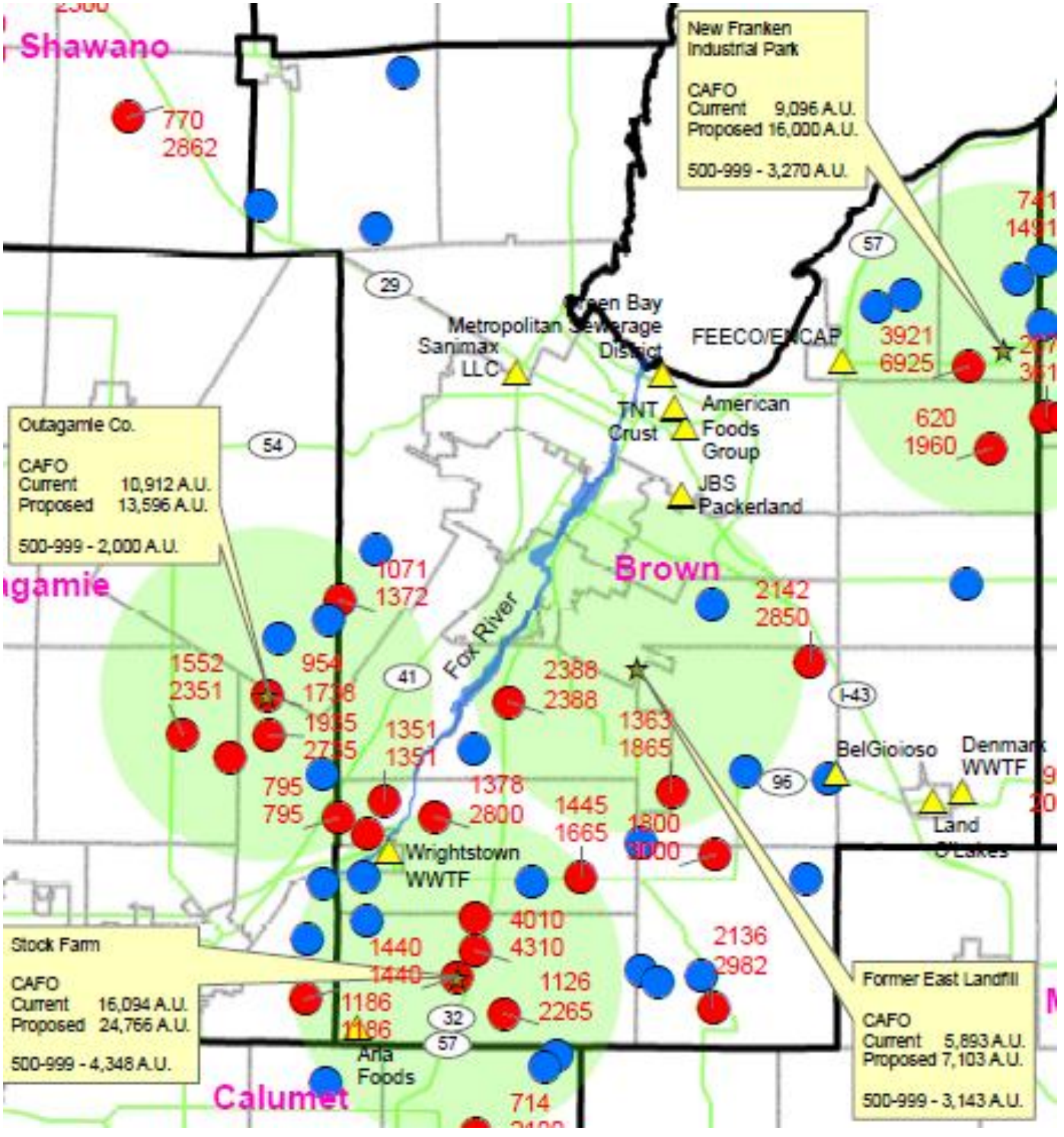
Increased Cattle numbers (all cattle)

Need for more feed on less cropland =

~~**Waterways**~~ **,** ~~**Cover crops**~~**,** ~~**Buffers**~~**.**

NE WIS CAFO's

New Franken	9,096 AU current	16,000 proposed
Stock Farm	16,094 AU current	24,766 proposed
East Land fill	5,893 AU current	7,103 proposed
TOTAL	**31,083 AU current**	**47,869 proposed**



What makes projects work?

#1 : Adequate Qualified Staff

Staff without cost share will get conservation on land, **cost share without staff <u>will not</u>!**

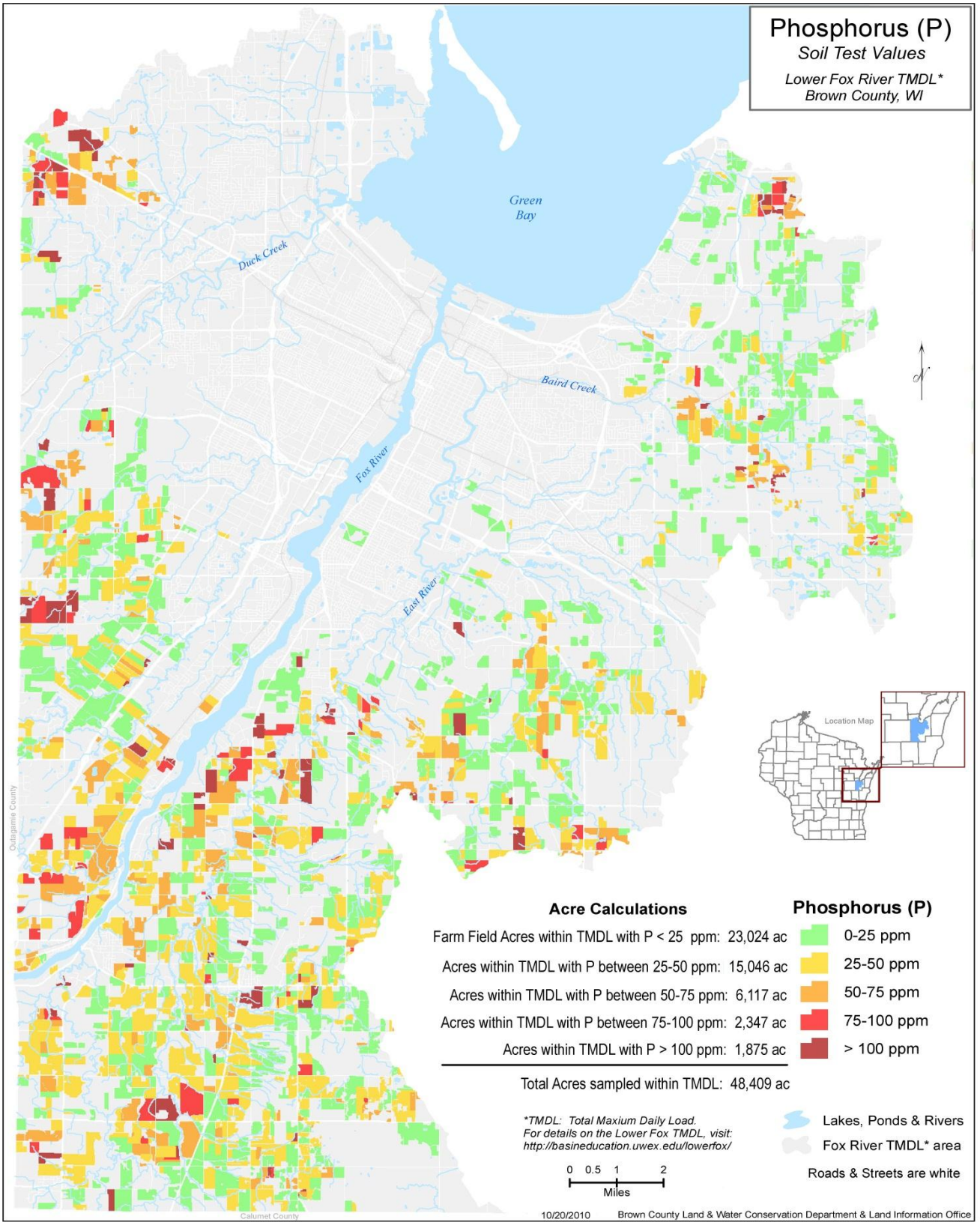
Teamwork	Harmony
Commitment	Outreach
Values	Technical
Cooperation	**Marketing**

Marketing/ Education needed

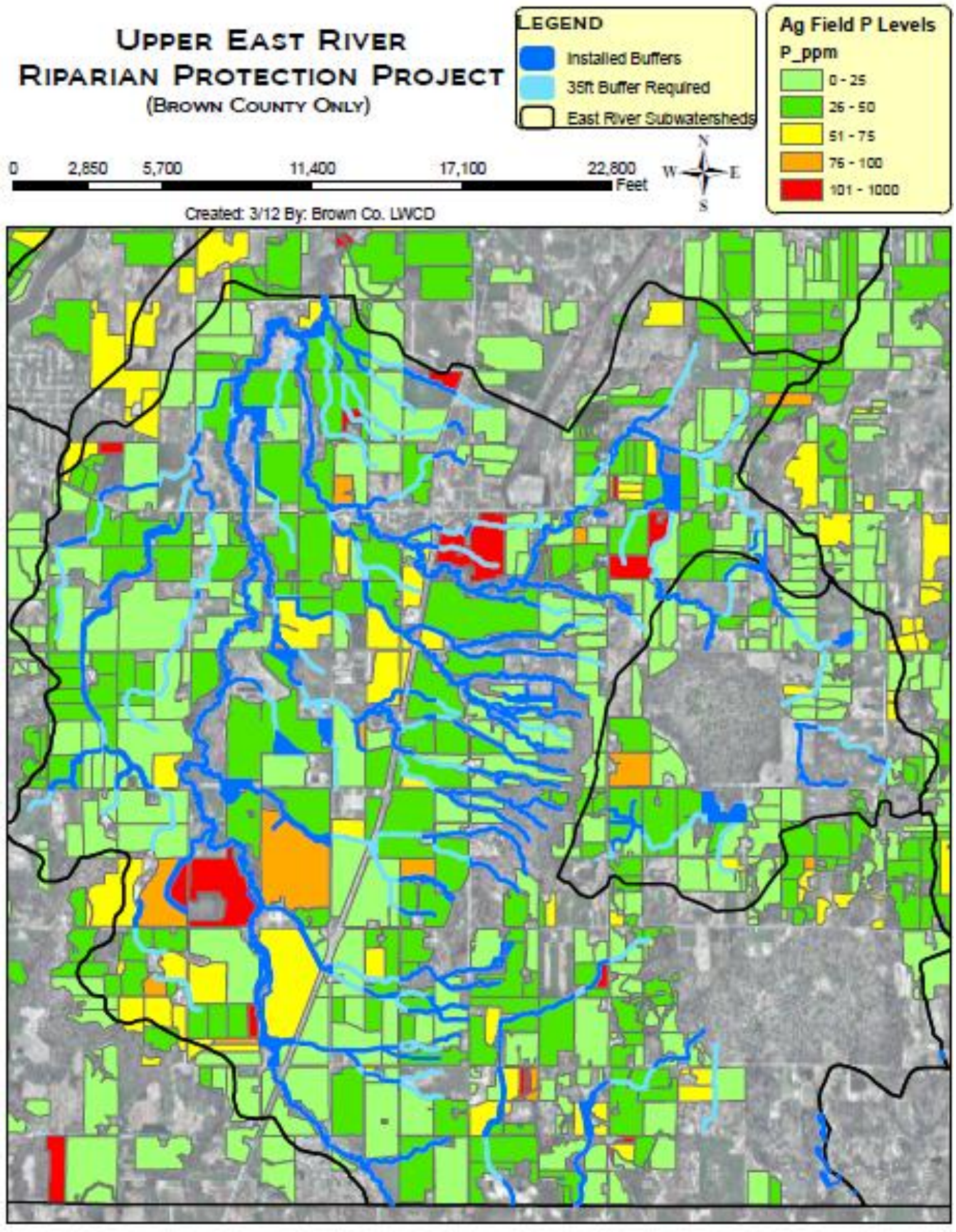
Survey of Dairy Farmers in Lower Fox by UW (February 2007)

- 168 (58%) responded (CAFO's not in survey)
  - 86% agreed it is their responsibility to protect WQ.
  - **Only 14% would be willing to pay more to improve WQ.**
  - Twice as many (36%) identified Waterfowl droppings as more serious than Agriculture (18%).
  - Respondents see water pollution as generated principally by non Ag sources.
  - **Two most influential factors are profitability (88%) and out of pocket expense (87%).**
  - **75% will maintain or expand herd size in next 5 years.**

Monitoring – P every 4 years with GIS and Soil Tests



GIS Monitoring –
High P fields / Needed Buffers



TMDL Monitoring

Three year Total Phosphorus concentrations for the period 2004 and 2006 available from the Lower Fox River Watershed Monitoring Program show all the stream data with higher phosphorus levels than the state standard which was set at .075 ppm. (New Wisconsin standards are **.1 mg/L for rivers and lakes and .075 mg/L for streams adopted in 2010).**

Sub Basin	3 year record of Total Phosphorus concentrations Lower Fox River Watershed Monitoring Program 2004-2006*
Apple Creek	.2 - .31 mg/L
Ashwaubenon Creek	.275 - .4 mg/L
Baird Creek	.12 - .19 mg/L
Duck Creek	.16 - .195 mg/L
East River	.18 - .355 mg/L

Source: Lower Fox River Watershed Monitoring Program 2004-2006 (page 10 Total Maximum Daily Load and Watershed Management Plan for Total Phosphorus and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay). * Annual ranges

Goals, approach/strategies

- Total Maximum Daily Load identifies source of loading as target.
- Nutrient Trading. GBMSD $220 million dollars to reduce 3% of P load vs. Agriculture BMP's.
- Waste Transformation Facilities to save transportation costs and remove Phosphorus from Watershed.
- Use Phosphorus maps as priority setting.
- Attaching conservation practices like buffers to landowner deed.
- Fees for services increases awareness and will maintain dialog with agriculture.

What's next in the project?

- Precision Ag?
- Gypsum standard to help reduce Phosphorus and create better soil structure.
- Tile line phosphorus answers – 50% of phosphorus now soluble and not attached to sediment.
- Waste Transformation Facilities.
- Continued funding by GLRI.
- Nutrient Trading.
- Sustainable livestock limits (Quota's?) Cows per township or county. How far can we transport waste, fertilizer and feed if fuel reaches $6.00/ gallon? Will we have enough cropland for feed for livestock if expansions continue ? Potential climate change impacts.

Questions?