Understanding the Future of Nutrient Management

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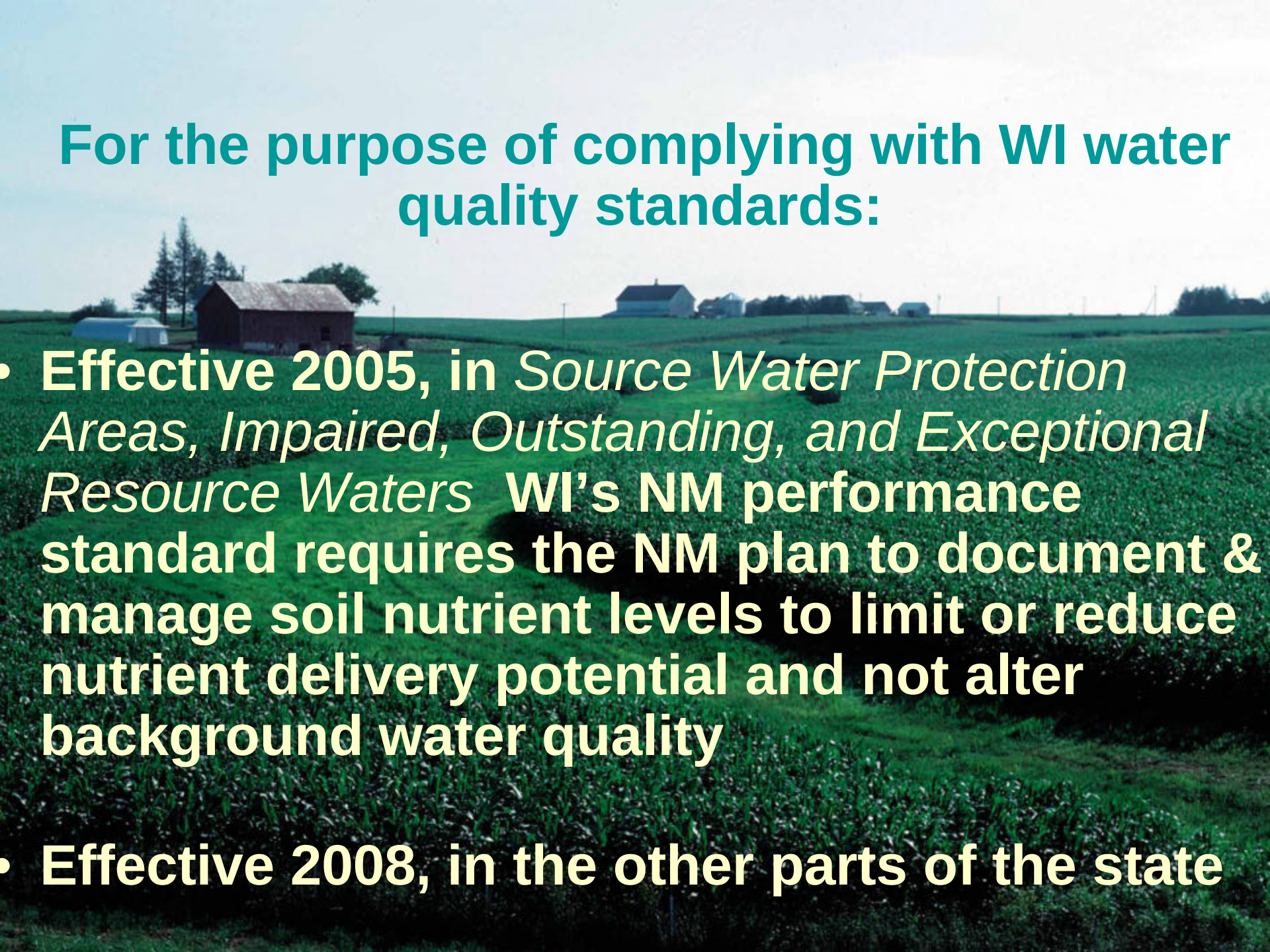
P based 590 Technical Standard

- June 2000 National NRCS HQ ruled that WI's 590 (1999) does not limit P applications if manure is incorporated and is inconsistent with National NRCS 590 std. as required for CAFOs.
- WI NRCS approved P-based 590 (July 2002)
  - P Index or Soil test P levels
  - Provides nutrient application requirements for all sizes and farm types.
  - DATCP will codify the P-base standard in ~2006.

Counties Implement Agriculture Performance Standards through County & DATCP approved LWRM plans

- Control erosion to meet tolerable soil loss (T) RUSLE 2
- Construct manure storage facilities to standards
- Divert clean water around feedlots close to streams
- No overflowing manure storage facilities
- No unconfined manure piles near surface water
- No direct feedlot or manure storage runoff
- Restrict livestock access to maintain adequate sod cover (vegetation) near water
- Apply nutrients to crop needs

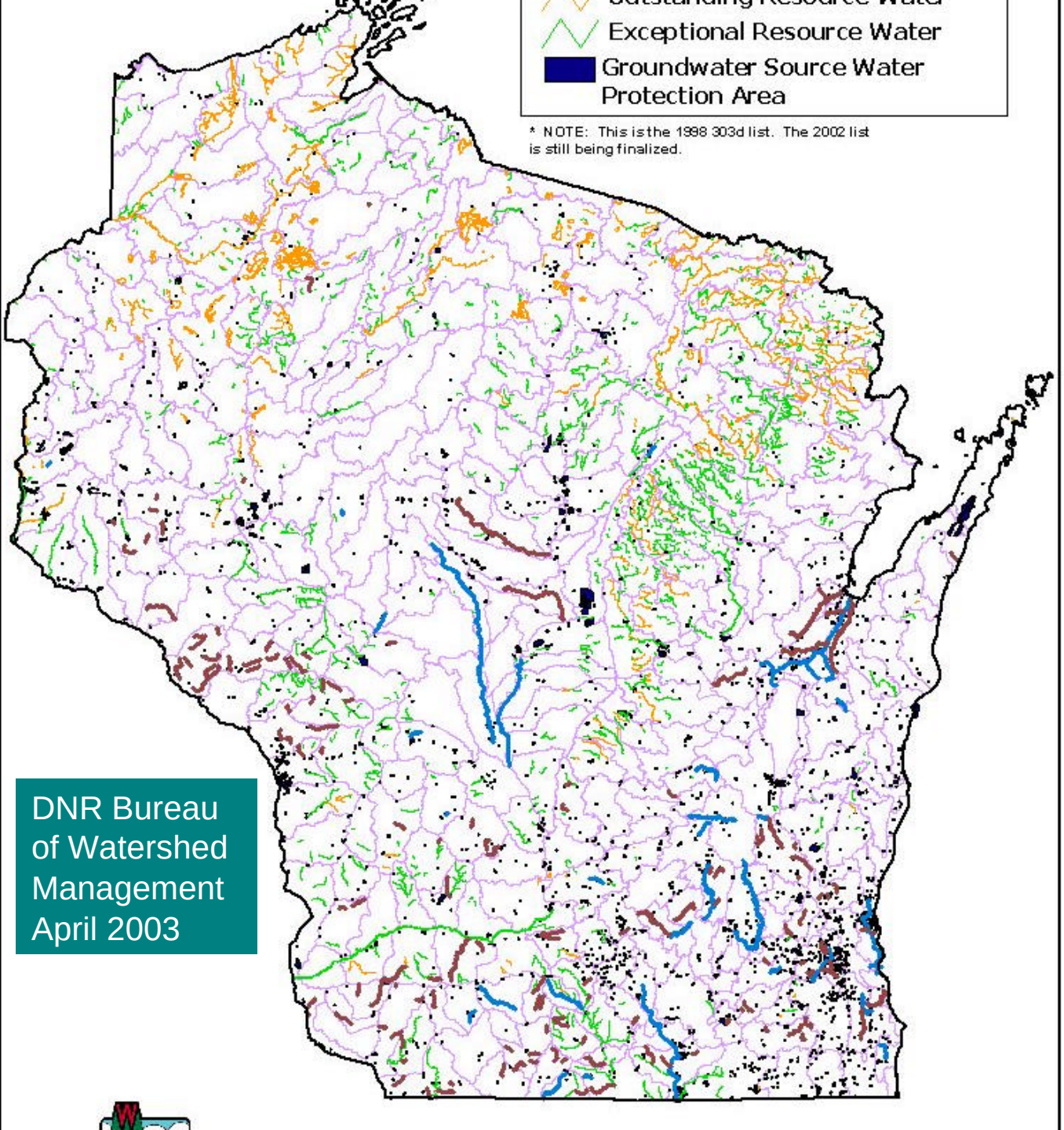
ALL STANDARDS BECOME EFFECTIVE Oct. 1, 2002 EXCEPT NM



For the purpose of complying with WI water quality standards:

- **Effective 2005, in** *Source Water Protection Areas, Impaired, Outstanding, and Exceptional Resource Waters* **WI's NM performance standard requires the NM plan to document & manage soil nutrient levels to limit or reduce nutrient delivery potential and not alter background water quality**

- **Effective 2008, in the other parts of the state**



Blue & Brown
303d

Gold

Outstanding Resource Water

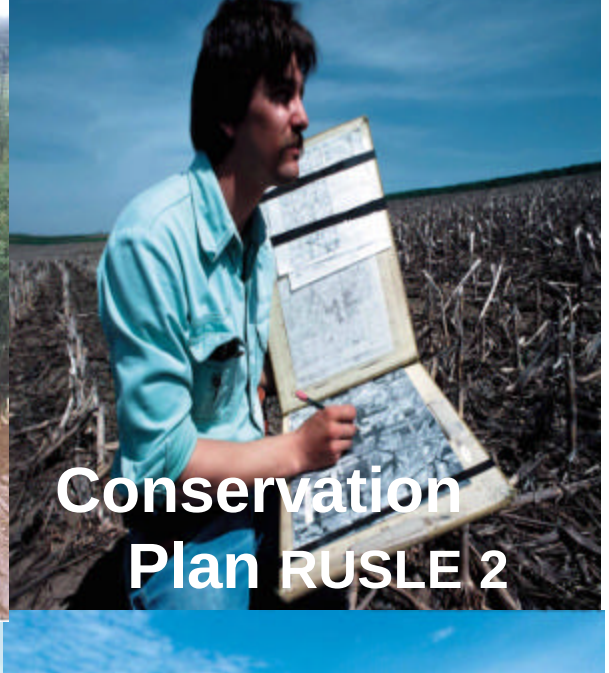
Green

Exceptional Resource Water

Black dots

Source Water Protection Area

ATCP 50 Code Revisions For Implementing the NM Perf. Std.



After 2005 or 2008, farmer "sha have a NM plan for mechanicall applied nutrients if at least 70% cost sharing is offered. **Require qualified nutrient managemer planners & farmers to:**

- Follow the NM Perf.Std.
- Follow the 590 std. for all nutrients & UW soil test recommendations from a DATCP certified lab with soil test updates every 4 years
- Crop fields to (T) tolerable so loss levels
- Grass concentrated flow area

New 590 P Restrictions by farm or tract

Soil Test P Values or P Index

- 50-100 ppm soil test P
  - P removal for crops to be grown in rotation (4 years)
  - Potatoes, P applications shall not exceed rotational crop removal if soil tests are optimum or higher
- >100 ppm soil test P
  - Stop manure applications or apply less than removal, apply one of the practices to limit P loading
    - Leave 30% residue on the soil surface after planting or
    - Establish fall cover crops or
    - Establish contour strips or buffer strips

Water Quality

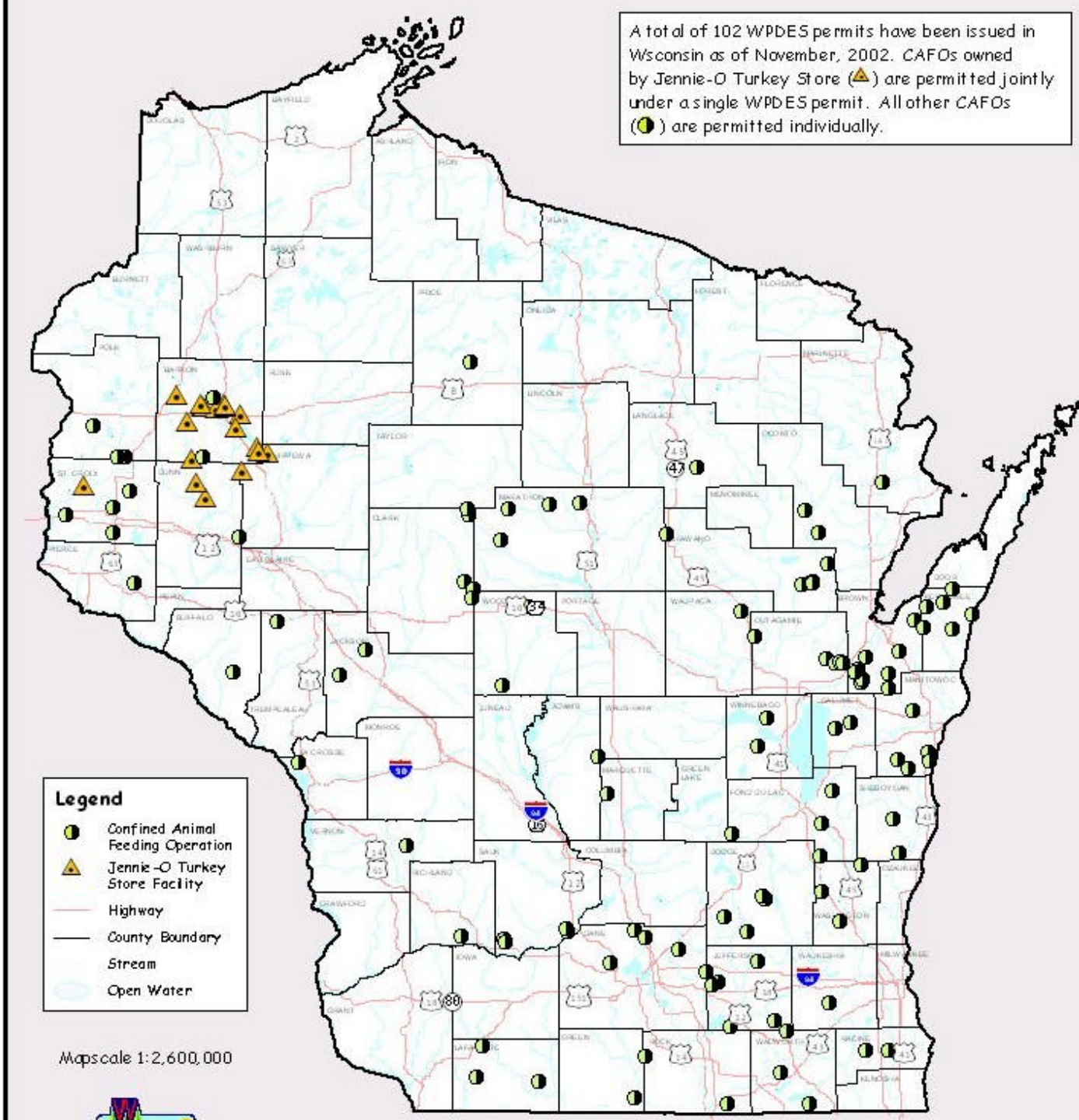
- Waters that do not meet the Clean Water Act's designated use are classifie as "impaired" (303 d).
- States are required to identify waters that are not expected to achieve water quality standards after implementing point source required controls and establish Total Maximum Daily Loads (TMDL's) for 303 d-waters through non-point source controls.

Wisconsin's DNR

WPDES Permits
NR 243 Wis. Admin. Code

Confined Animal Feeding Operations

P-based 590 is part of allowable effluent discharge or minimizing N & P discharge to surface water

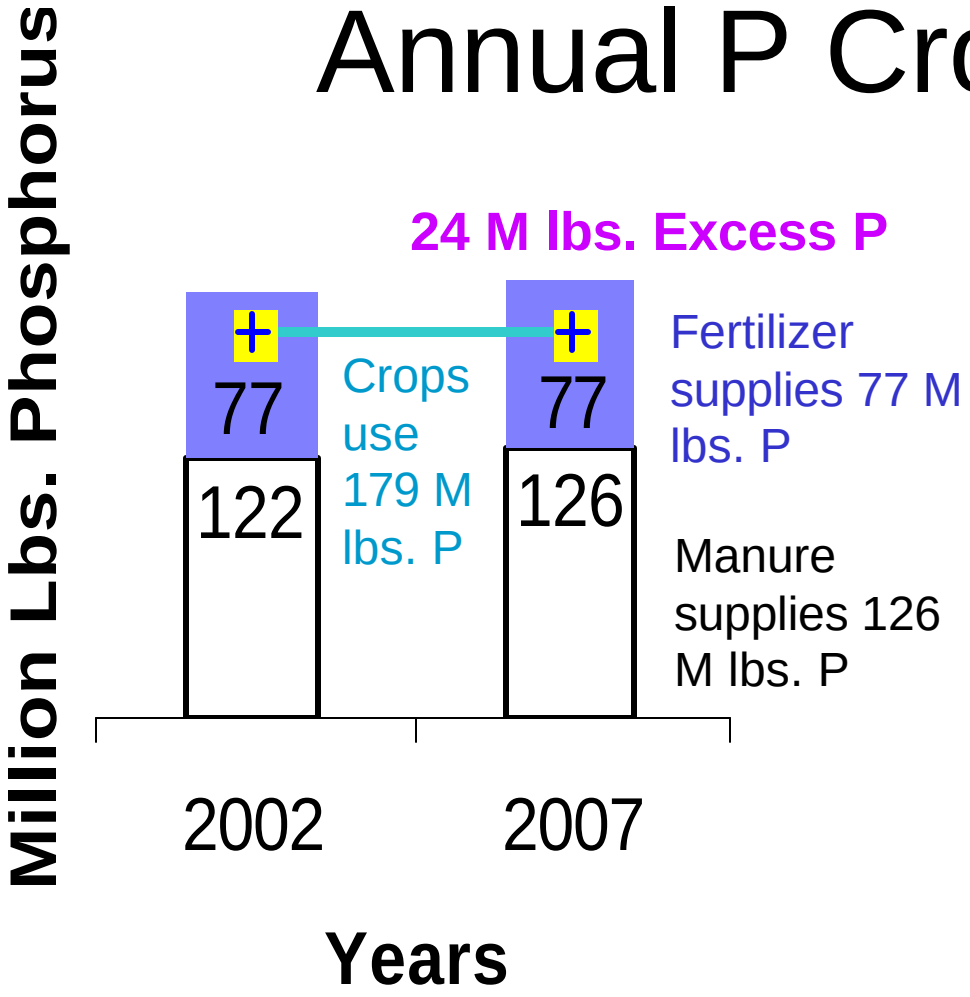


Siting & Modernizing Livestock Operations in WI

21 member committee recommends the following to reduce conflic

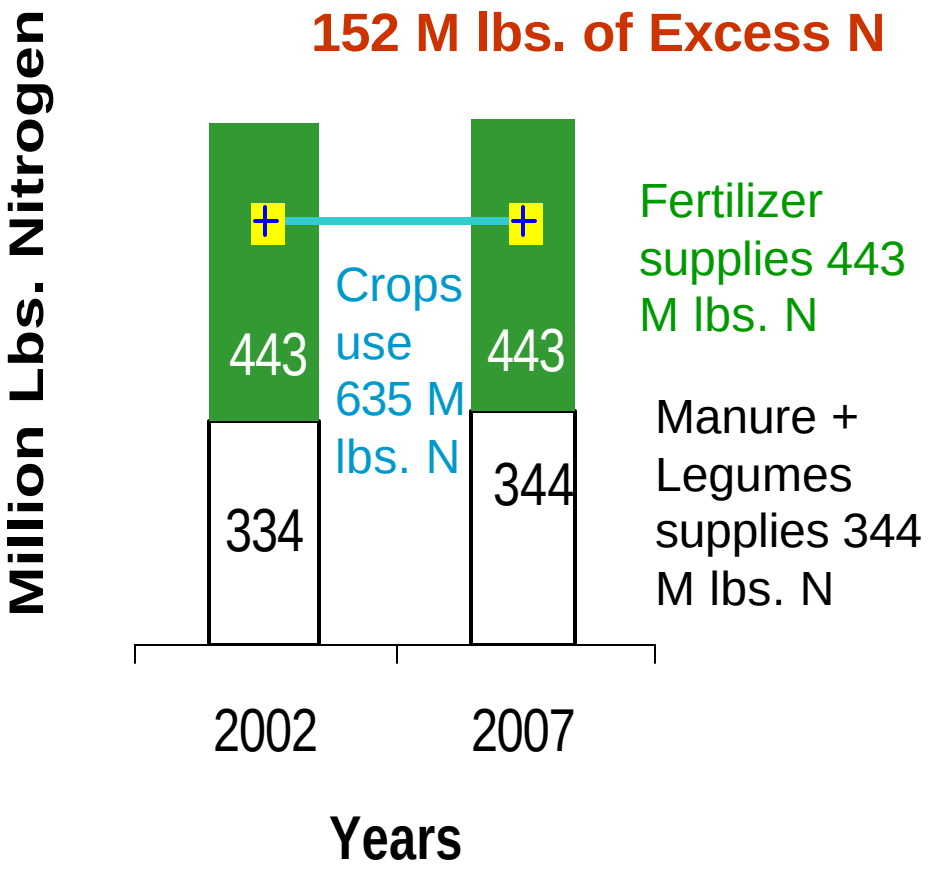
- The DATCP will use consistent state standards for managing air and water quality (nutrient management and manure containment).
- A county or municipality, that regulates livestock operation siting and expansion, will approve a livestoc farmer's application if the application meets state standards and is consistent with local regulations.
- A State Review Board will be created to determine whether a county or municipality properly applied the state standards when it made its decision.

Annual P Crop Balance



- 2002 WASS Dairy Producer Survey finds 1.27 M cows in WI in 2002. Farmers project 1.4 M cows by 2007. (Ave. herd size 73 to 101)
- If fertilizer sales remain consistent with 2002, In 2007, WI will be over applying P by 24 M lbs. based on 179 M lbs. of P removed by crops.

Annual N Crop Balance



- 2002 WASS Dairy Producer Survey finds 1.27 M cows in WI in 2002. Farmers project 1.4 M cows by 2007.
- If 2002 fertilizer sales remain constant, in 2007 WI could over apply N by 152 M lbs. based on 635 M lbs. of N removed by all crops.
- We must make better use of our manure nutrient resources by crediting and more distribution.

Fertilizer Law Ch. 94.64 & ATCP 40

- Fertilizer is anything containing plant nutrients for plant growth; or used to make fertilizer. **Exempt from fertilizer license and tonnage fees are: wood ashes, liming material, raw sewage sludge, and unmanipulated manure.** (Manipulation is mechanically drying, pelletizing, or by any other means.)
- **Distributing** manipulated manure for ag use requires a license, paying tonnage fees, and the guaranteed analysis for total nitrogen, available phosphate, and soluble potash.
- Manure analysis and testing can be addressed in code. Other changes may need to be statutory.

Distributing Manipulated Manure

A 20 acre corn field, optimum soil test crop nutrient need, **160** lbs. N, **60** lbs. P_2O_5, **45** lbs. K_2O

Manure application

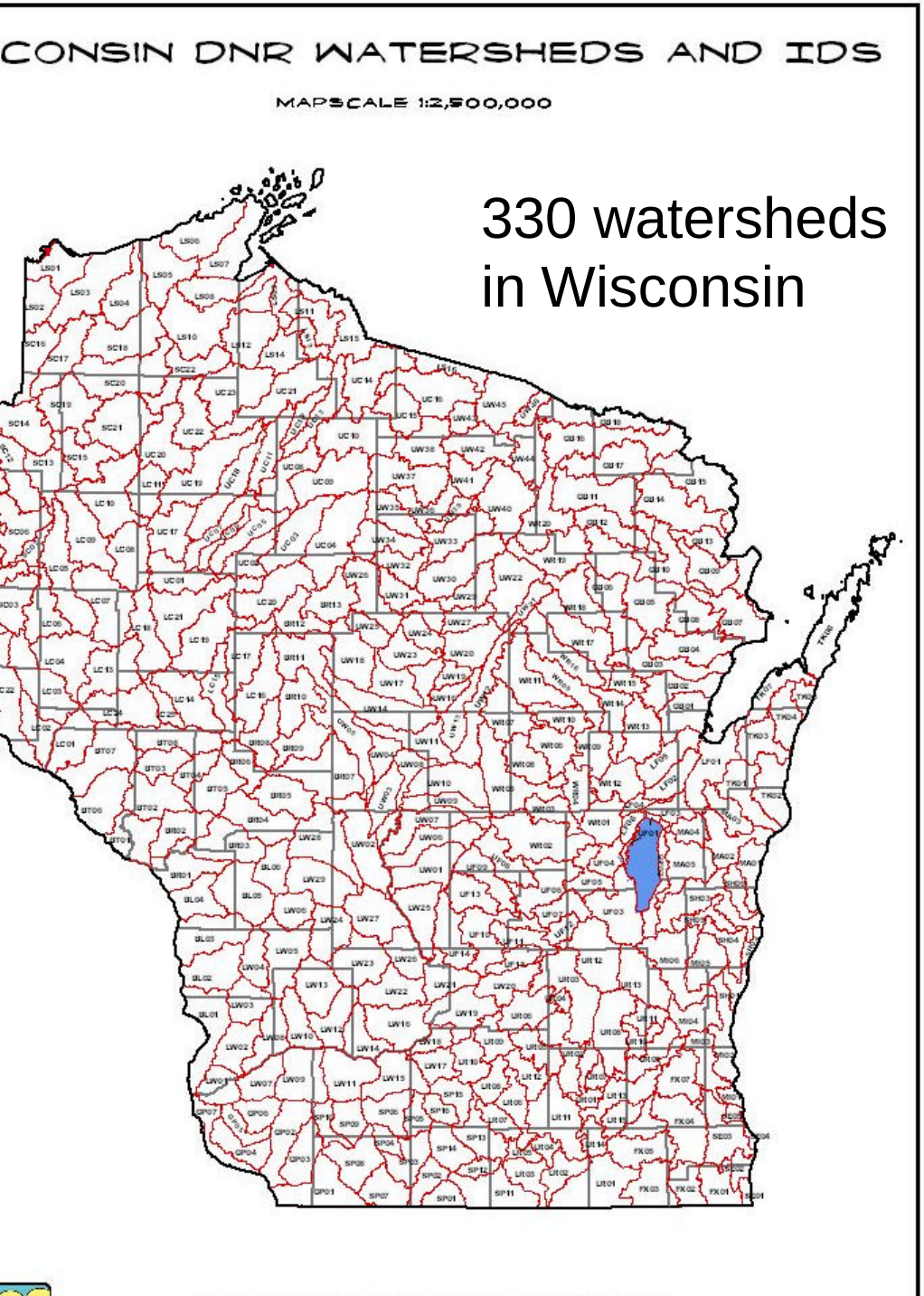
16,000 gal/ac (11-5-20 per 1,000 gallons)
176-80-320 per ac

- Fertilizer value/ ton **$1.34**
- Tonnage fees **$1,440**
- Application cost $1,600 @ $5/1,000 gal. $80/ac

Fertilizer application

53 gal/ac of 28% & 250 lbs. 9-23-3
179-57-75 per ac

- Fertilizer value/ ton **$341**
- Tonnage fees **$8 @ $1/ton**
- Application cost $210 @ $10/ac



- **County LWRM plans set implementation priorities for water quality activities, including performance standards.**
- **Counties' annual activity reports are likely to include**
  - **the practice location by watershed**
  - **the number or acres evaluated - and those in compliance for each performance standard.**

LCD Ag performance standard implementation strategy

DNR survey (2003)

25 counties (40%) of 62 expect compliance activities to include:

- Monitoring cost-shared practices
- Enforcing county ordinances
- Monitoring Nutrient & Pest Management (NPM) plans for increased phosphorus on fields
- Responding to public complaints
- Ensuring that new owners are made aware of NR 151 compliance information for their property

18 counties (29%) expect to enforce standards through: 1) DNR, 2) county ordinances, 3) financial sanctions available through state program, and 4) the local district attorney

NM implementation

Cost $252 million for 9 million acres @ $7 per acre x 4 yrs

600,000 acres/ yr (12,000 new acres/county)
Costs $16.8 million / yr
At least 15 years to complete

2003	2004	Funding in millions
$ 9.5	$ 8.8	(DATCP cash)
$ 13.7	$ 15.7	(DATCP/DNR bond revenue)
$ 0.2	$ 0.1	(NM Research)
$ 0.1	$ 0.12	(MALWEG NRCS & UW)
$ 2.6	$ 2.3	(DNR in 44 counties)
$11.5	$13.0	(USDA EQIP in every co.)

In 2003 most counties EQIP pays $21/ac over 4 year contract

Plus $5-$7 /ac TSP or about $40-$50/ac ove 4 yrs

(techreg.usda.gov

Compliance & Privacy Issues

The Privacy Act of 1974, 5 U.S.C. *§ 552a* as amended in 2002:

Limits information sharing to data without personal or programmatic identifiers

Agencies must find ways to determine where fields have been paid to comply with the water quality performance standards or costs could double

Ultimately counties will be seeking RUSLE 2 soil loss, PI, and soil test P levels by field to monitor compliance

Wisconsin needs to make better use of our manure as a nutrient resource

We should promote environmentally sound agricultural modernization

Talk to producers about signing-up for NM planning with NRCS