Implementing P-based nutrient management Strategies

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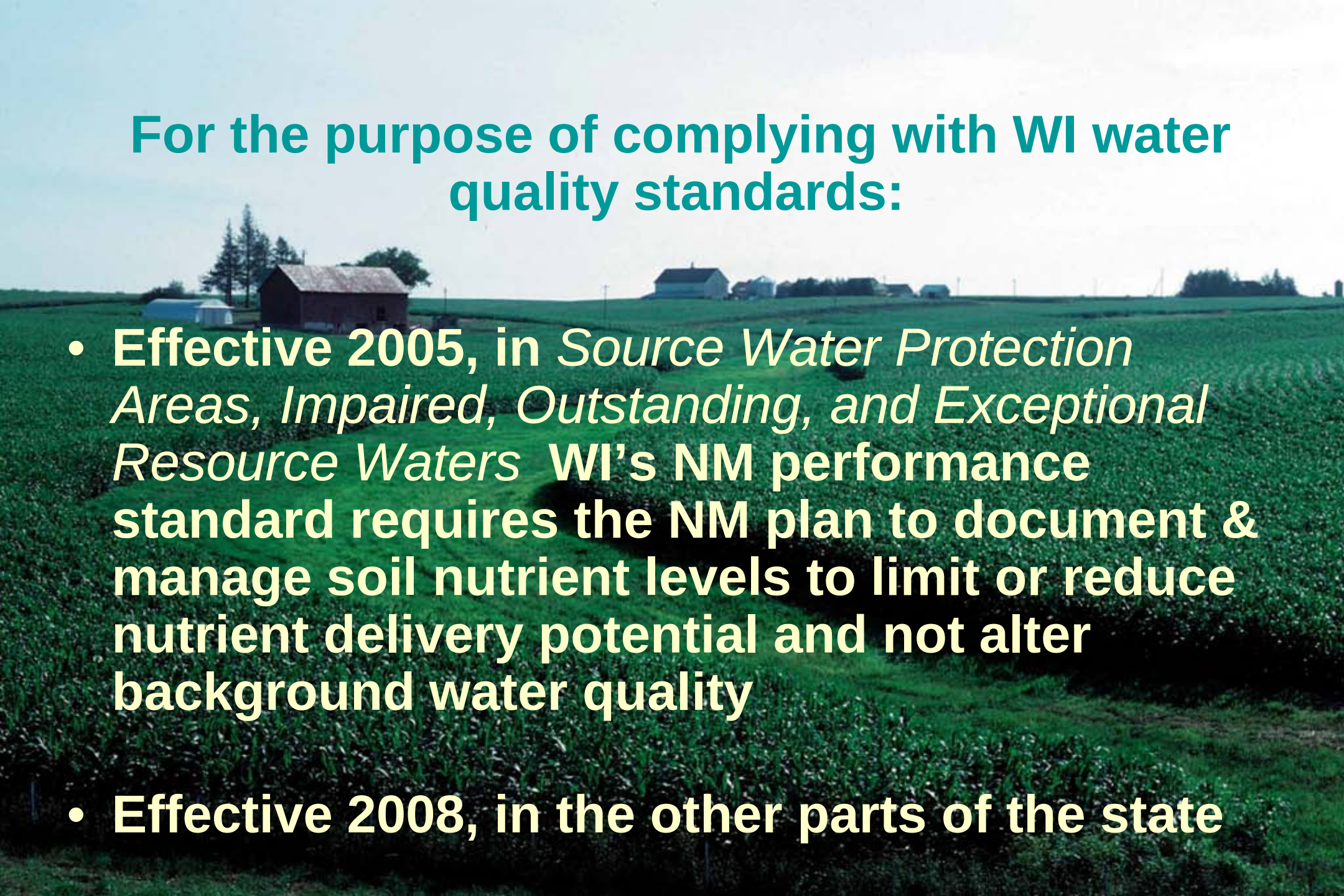
Counties Implement Agriculture Performance Standards through County & DATCP approved LWRM plans

- 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

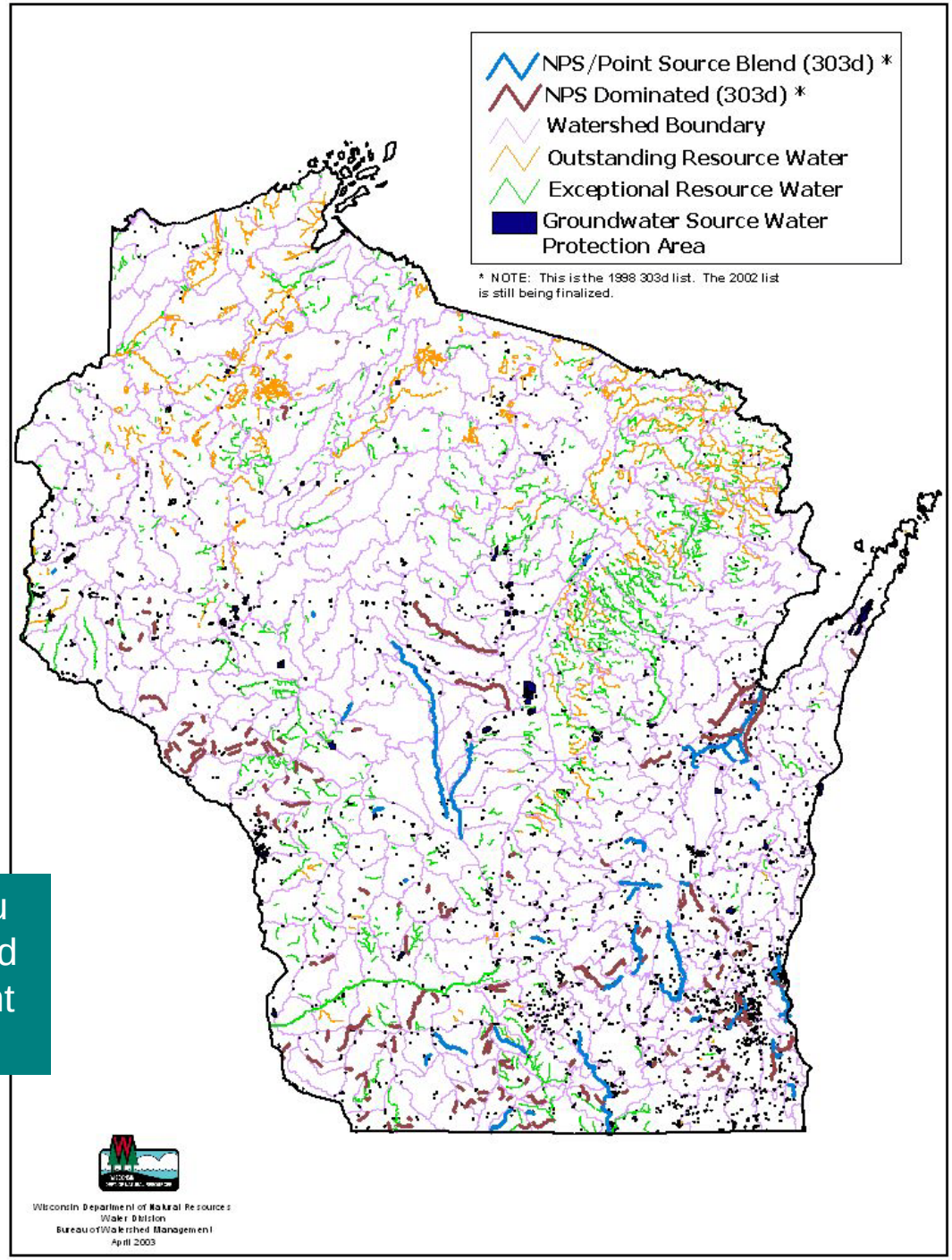
ALL STANDARDS BECOME EFFECTIVE Oct. 1, 2002 EXCEPT NM



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**



DNR Bureau of Watershed Management April 2003

Blue & Brown
303d

Gold

Outstanding Resource Water

Green

Exceptional Resource Water

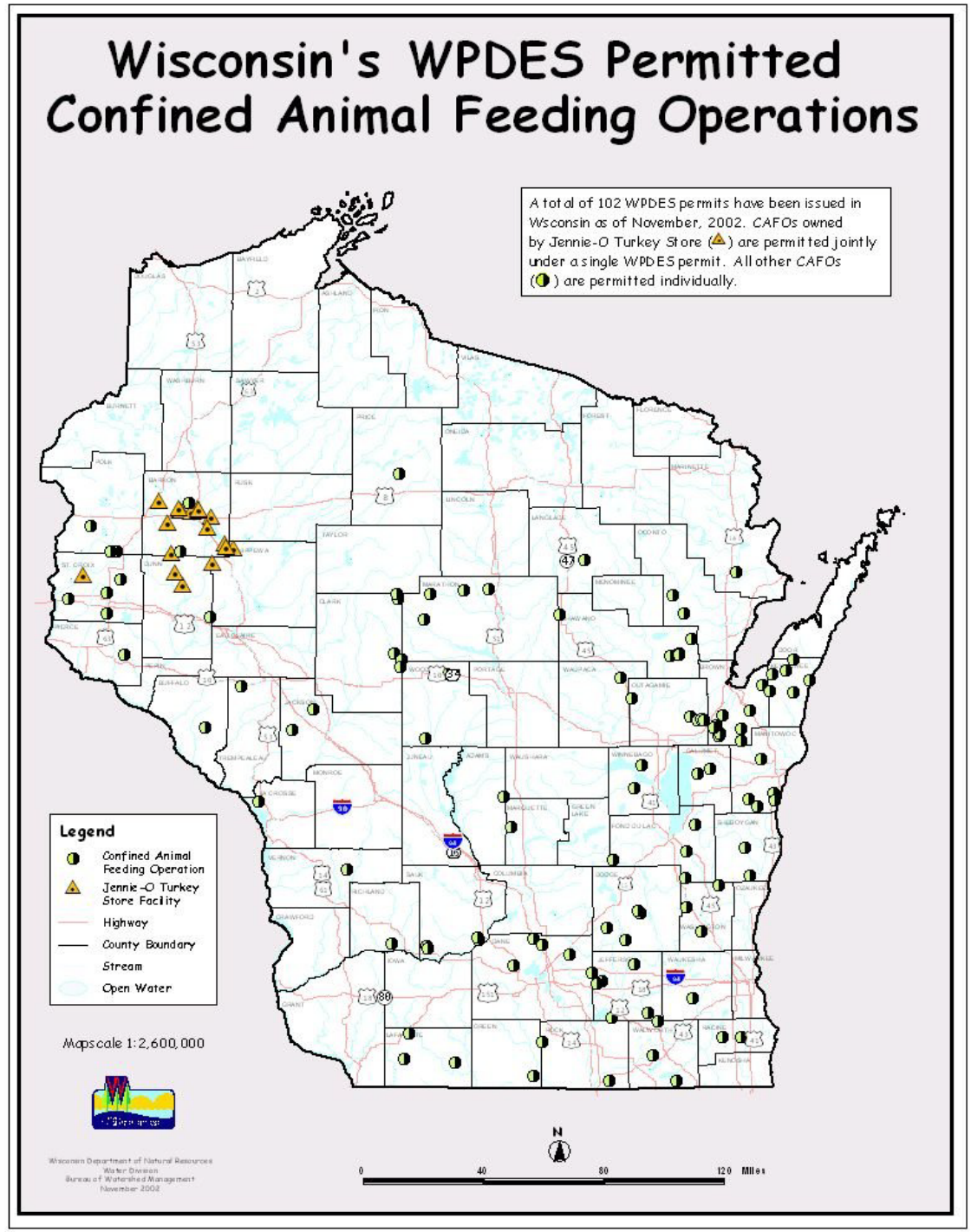
Black dots

Source Water Protection Area

Wisconsin's DNR

WPDES Permitted Confined Animal Feeding Operations

NR 243 Technical Advisory committee meets in 03-04 to update Wis. Admin. Code



P based 590 Technical Standard

- June 2000 National NRCS HQ ruled that WI's 590 (1999) is inconsistent with National NRCS 590 std.
- Does not limit P applications if manure is incorporated.
- WI NRCS approved P based 590 (July 2002) to provide nutrient application requirements for all farm types and sizes. DATCP will codify the P-base standard in ~2006.

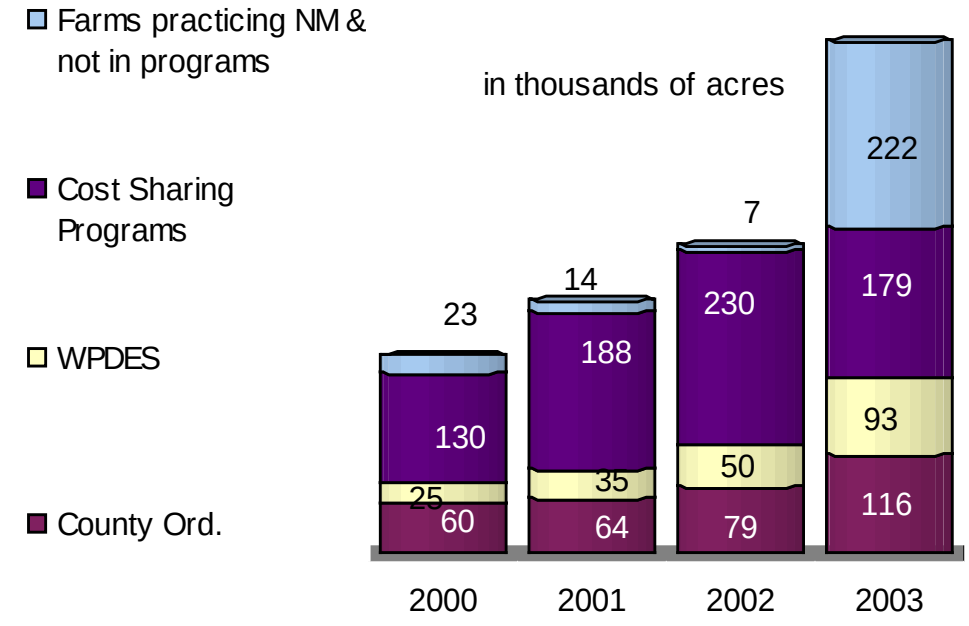
ATCP 50 Code Revisions

- **After 2005 or 2008,** farmer "shall" have a NM plan for mechanically applied nutrients if an offer of at least 70% cost sharing is offered.
- **Requires qualified planners to**
  - Approve plans for NM PS
  - Follow the 590 std. & UW soil test recommendations from a DATCP certified lab with soil test updates every 4 years
  - Make plans available for DATCP inspection if requested
  - DATCP will track farmer planners on *Checklist* & provide *NM Briefings* newsletter to all qualified planners

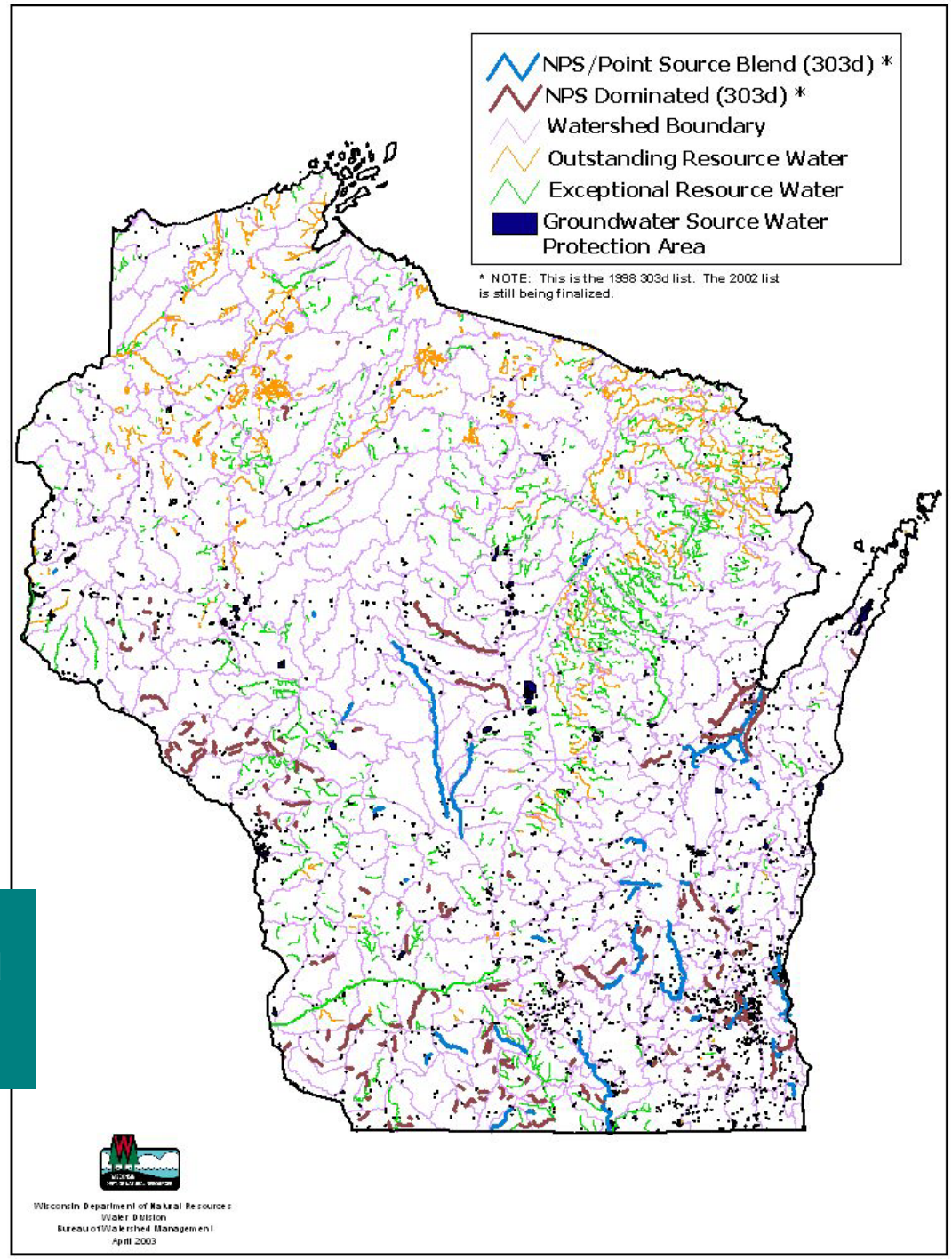
ATCP 50 Code Revisions

- **Bulk fertilizer dealers survey WI farmers:**
  - "Do you have a NM plan written for the current growing season that meets the WI 590 NM standard?"
  - If yes, record the planner's name, address - keep for 2 years. Report number of plans and acres.
  - **1,412 plans on 611,405 ac in fertilizer survey (7% of WI crop acres)**
    - **883 plans on 405,572 ac from Checklists**

Nutrient Management Acres by Program and Year 2000-2003



	2000	2001	2002	2003
total reported acres	**236,326**	**302,070**	**366,581**	**611,405**



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ATCP 50's NM cost share requirements

Existing, out of compliance operations, must be offered at least 70% cost share.

NM ($7/ac x 4 years) or $28/ac

EQIP pays $7 x 3 years plus 1 year without $ plus $5-$7 /ac TSP or about $40-$50/ac in most counties in 2003 rates.

(www.techreg.usda.gov)

New 590 Nutrient Management Std.

- Do not apply nutrients to fields > T or in waterways
- Establish waterways where needed
- Nutrients shall not runoff the field during application

Federal Conservation Compliance

- **Re-occurring Ephemeral Erosion caused by the uncontrolled concentrated flow of water is required to be treated:**
  - **Vegetate flow area and slow or spread flow where needed to and reduce runoff from uplands.**

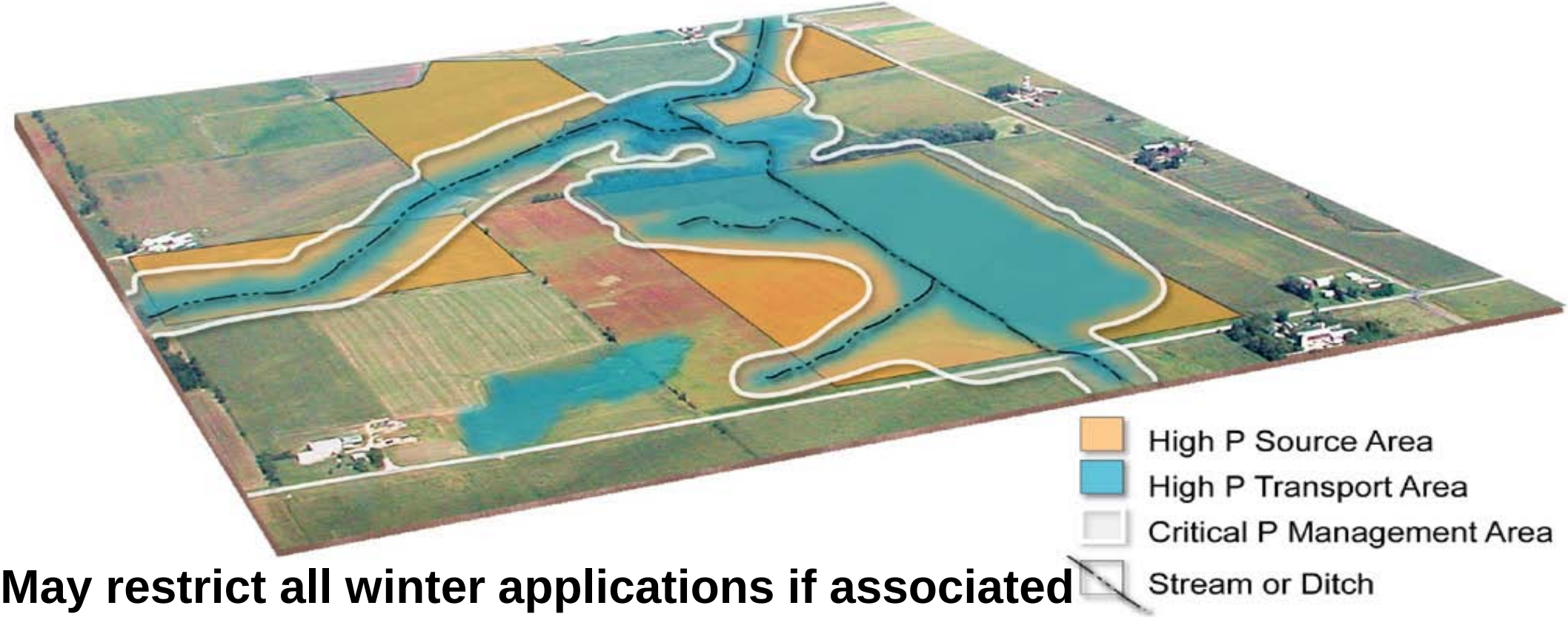
New 590 Application Restrictions

on frozen or snow covered ground

- Do not apply in ***excess of P removal*** (liquid manure applications > ***7000 gallons per acre***)
- ***Do not apply within 1000' of lakes & 300' of perennial streams***
- Do not apply within 200' upslope of wells, sinkholes, gravel pits, fractured bedrock (must incorporate in 72hrs)
- Do not apply to slopes > 9 %, except up to 12% only if conservation measures are in place (residue, contoured, waterways, etc.)
- No commercial fertilizer applications to frozen soils except for grass pastures & on winter grains

New 590-Application restrictions

on frozen or snow covered ground



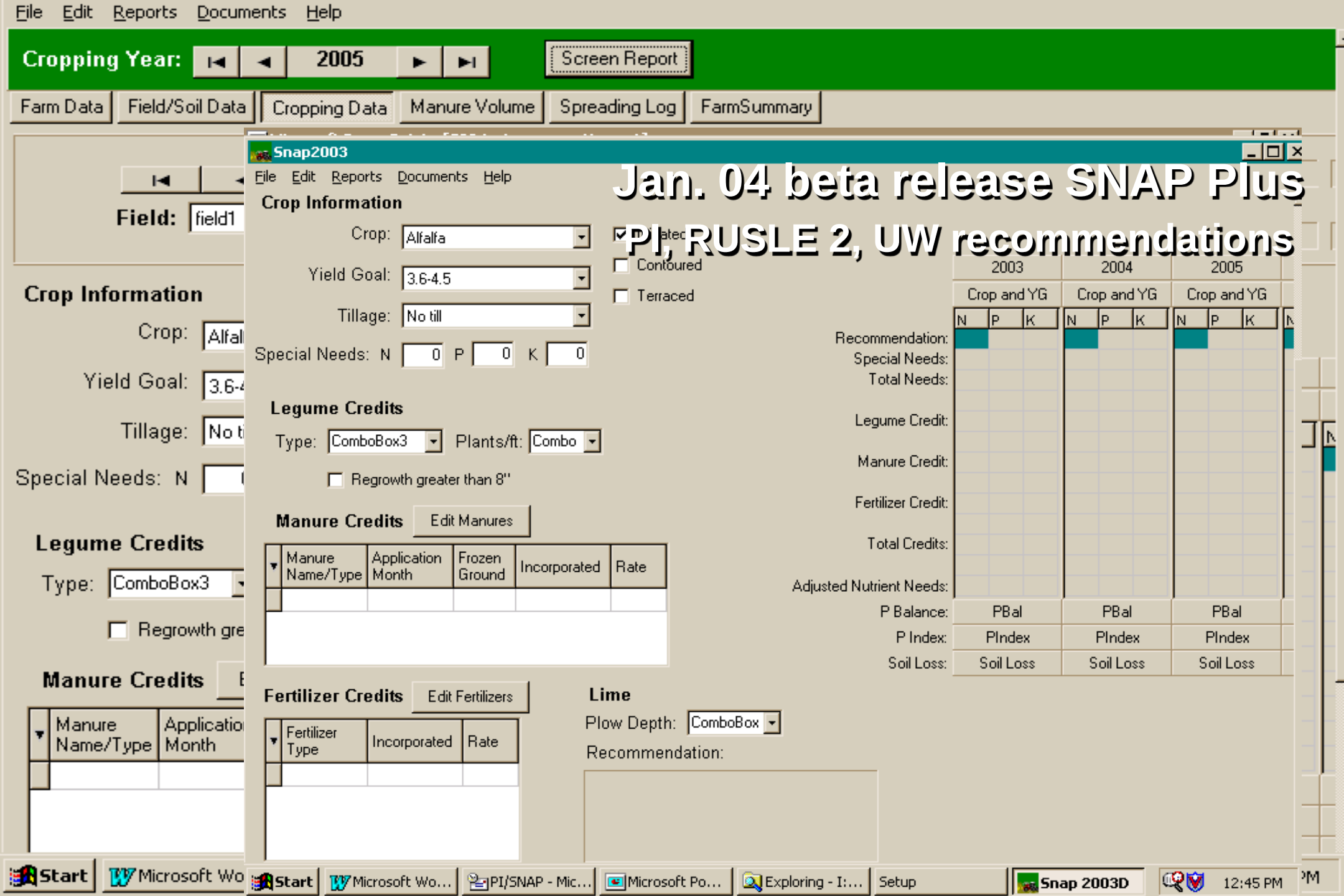
May restrict all winter applications if associated drainage areas of concentrated flow channels contribute to water and are identified on-site; approved in a conservation plan; & are > 1/3 of field

Nutrient and Pest Management Program 2002

New 590 P Restrictions by farm or tract

Soil Test P Values or P Index

- **< 50 ppm soil test P - crop removal for P 4 yr rotation**
- **50-100 ppm soil test P - crop removal for P 4 yr rotation**
  - Potato 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**
- **Nutrients on non-frozen setback (300' streams & 1,000' lake) must have buffers, 30% residue, incorporation, or cover crops**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Farm Data
Field/Soil Data
Cropping Data
Manure Volume
Spreading Log
FarmSummary
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Crop Information
Crop: Alfal
Yield Goal: 3.6-4
Tillage: No t
Special Needs: N
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File Edit Reports Documents Help
Crop Information
Crop: Alfalfa
Yield Goal: 3.6-4.5
Tillage: No till
Special Needs: N 0 P 0 K 0
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Special Needs:
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Jan. 04 beta release SNAP Plus
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Particulate P too High

- Decrease & Trap erosion
  - **USE MORE WATER INFILTRATING PRACTICES such as in-field diversions and buffers**
  - **CONTOUR TILL**
  - **LEAVE MORE RESIDUE by less tillage, take less bedding, plant cover crops**

- Lower Soil test P
  - **FEED LESS P**
  - **APPLY LESS NUTRIENTS to high P fields**
  - **PLANT HIGH P NEED CROPS like corn silage and alfalfa**

Soluble P too High

- Change manure applications
  - **STORE MANURE IN WINTER**
  - **LOW DISTURBANCE INCORPORATION**
  - **APPLY TO LOW RISK SITES APPLY AT LOW RISK TIMES**
  - **INFILTRATE WATER with in-field diversions and buffers**
- Lower Soil test P
  - **FEED LESS P**
  - **APPLY LESS NUTRIENTS to high P fields**
  - **PLANT HIGH P NEED CROPS like corn silage and alfalfa**

Planning for implementation

Cost for 9 million acres @ $7 per acre

600,000 acres/ yr (12,000 new acres/county)
Costs $16.8 million/ yr (4 year cost $28/ac)
Will take at least 15 years

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.)