

DATCP and the NRCS Soil Survey

SARA WALLING

CHIEF, NUTRIENT MANAGEMENT AND WATER QUALITY
SECTION

DATCP Uses of the Soil Survey

- Drainage Districts
- Agricultural Impact Statements
- Farmland Preservation Program
- Groundwater Investigations
- Conservation Engineering
- Nutrient Management Planning



Drainage Districts

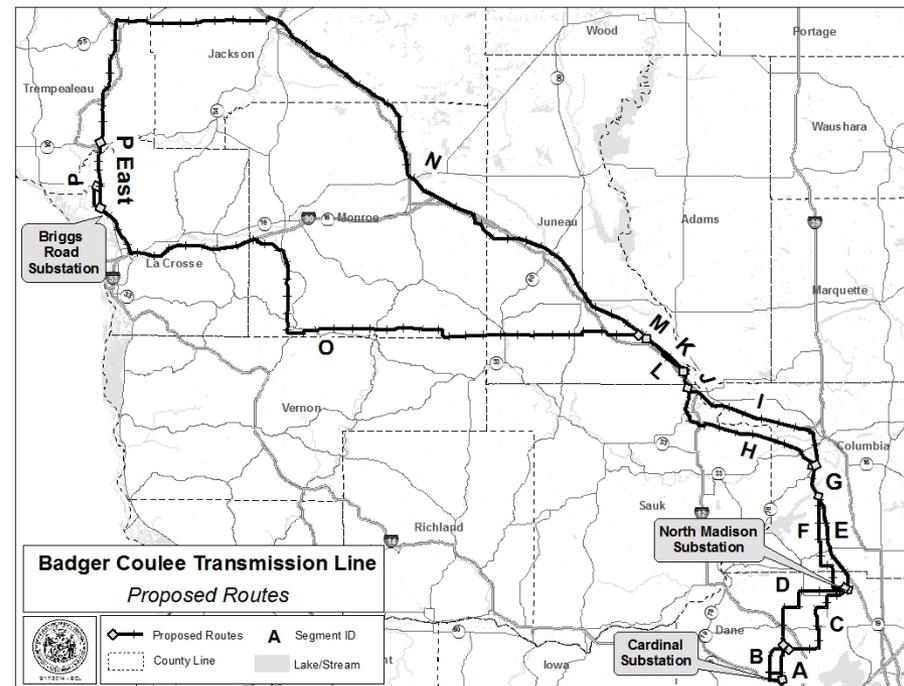
- WI has 176 drainage districts in 28 counties
- Ag land in drainage district is categorized based on soil types
- Used to determine benefits of drainage ditches and apportioning costs to pay for drainage.
- For example, soils with high water tables normally receive the greatest benefit from drainage.

http://datcp.wi.gov/environment/drainage_programs



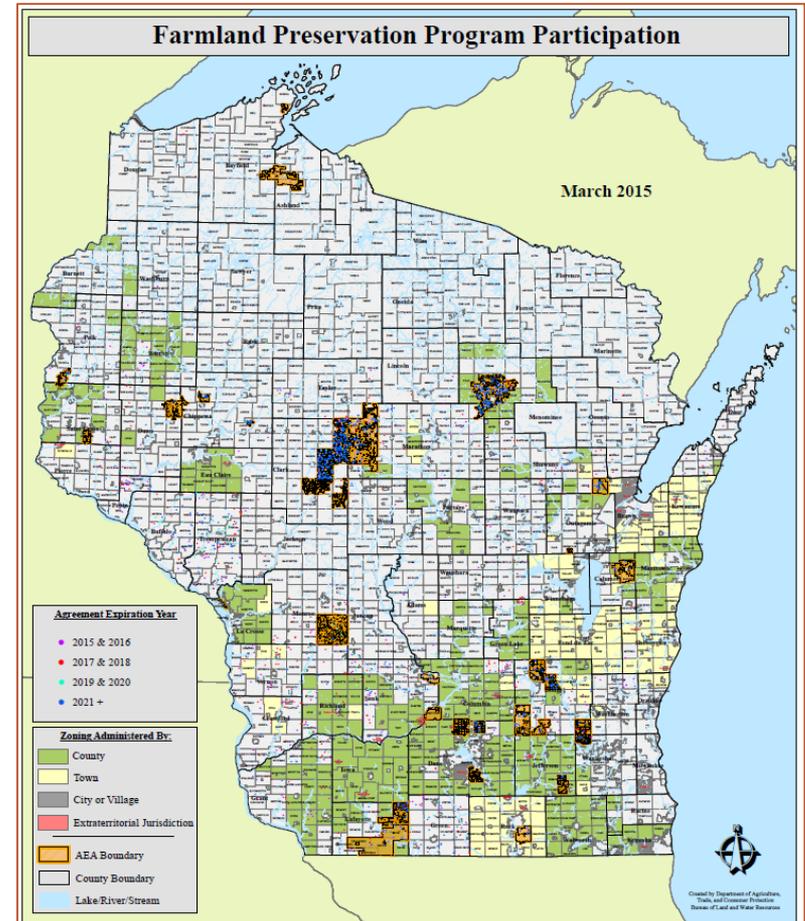
Ag Impact Statements

- DATCP develops AISs for all public transmission and pipeline projects that affect agricultural land
- Soil Survey Identifies:
 - Areas with steep slopes for increase erosion control
 - Soil Classification for determining extent of prime farmland impacted
 - Soil texture and hydrologic groups
 - Depth to water table



Farmland Preservation

- Soil land capability class & estimated yields - common inputs for LESA analysis to rate farmland productivity
- Soil productivity index - used as an indicator of farmland productivity

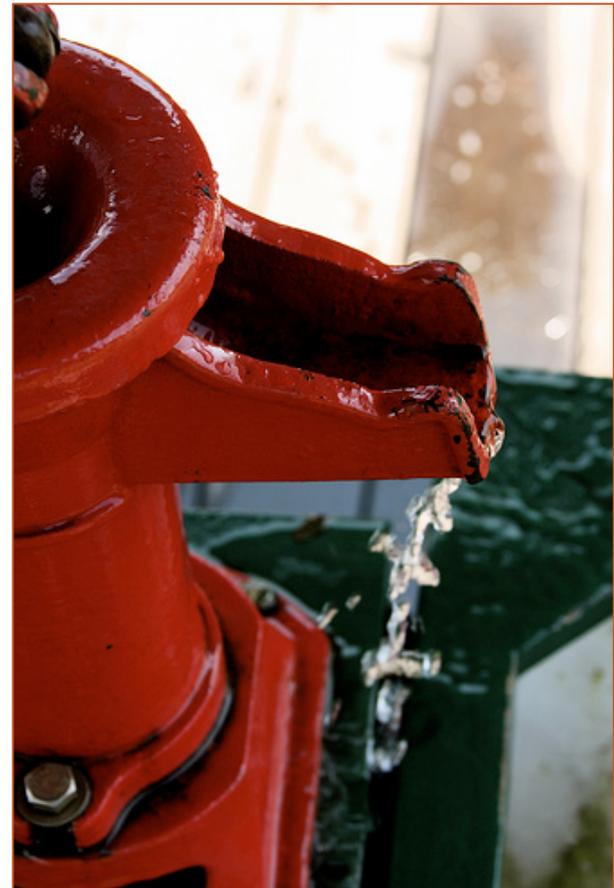


Groundwater Investigations

- Ag Chemical Bureau Hydrogeologists
- Targeted Sampling Project
 - Collect water samples from private wells in ag areas considered “vulnerable”
 - Relay the “Groundwater Susceptibility” map assembled using soil texture data as a key component
- Determining Pesticide Application Rates
 - Rate at which a pesticide can be applied (or applied at all) can be adjusted according to what soil type the pesticide will be applied to
 - Ex. application rate for Atrazine on coarse textured soils is 0.75 #/acre/year
 - When reviewing atrazine use observations, the Soil Survey is used for soil texture identification to determine what rate atrazine can be legally applied.
 - Some pesticide labels require soil have sufficient soil organic matter

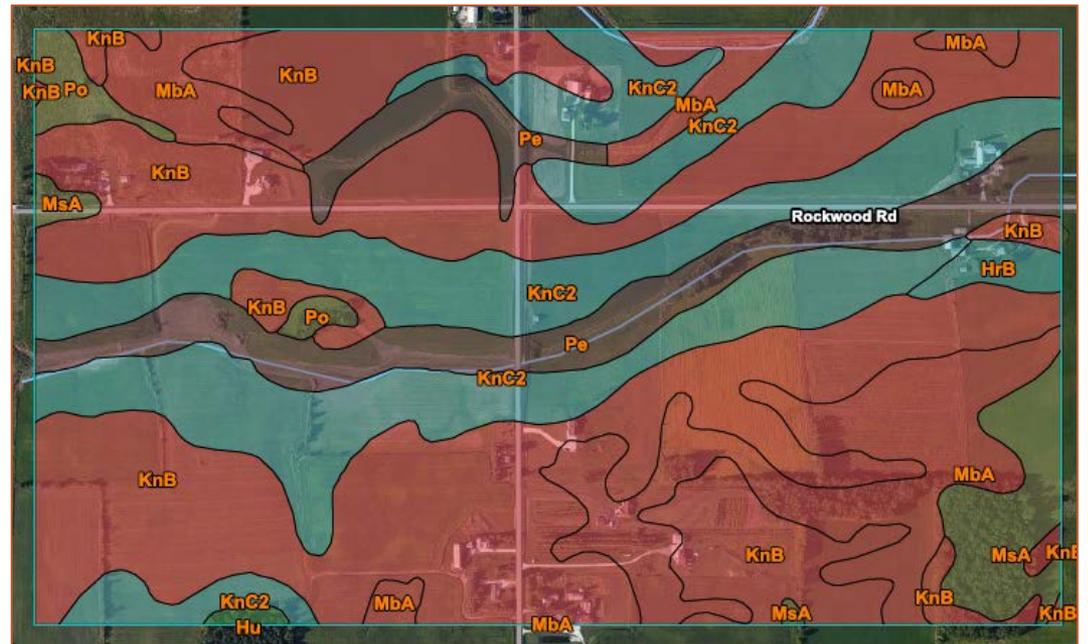
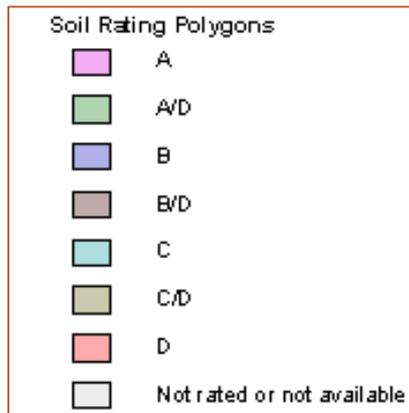
Groundwater Investigations

- Landspreading Permits
 - Soils become contaminated with fertilizer and/or pesticides (spills, agricultural dealerships...) due to spills and accidents
 - Contaminated soils need to be removed from the site
 - Usually spread on nearby fields at rates established in the permitting process
 - Part of the review process and rate determination requires identifying receiving field's soil type and slope



Conservation Engineering

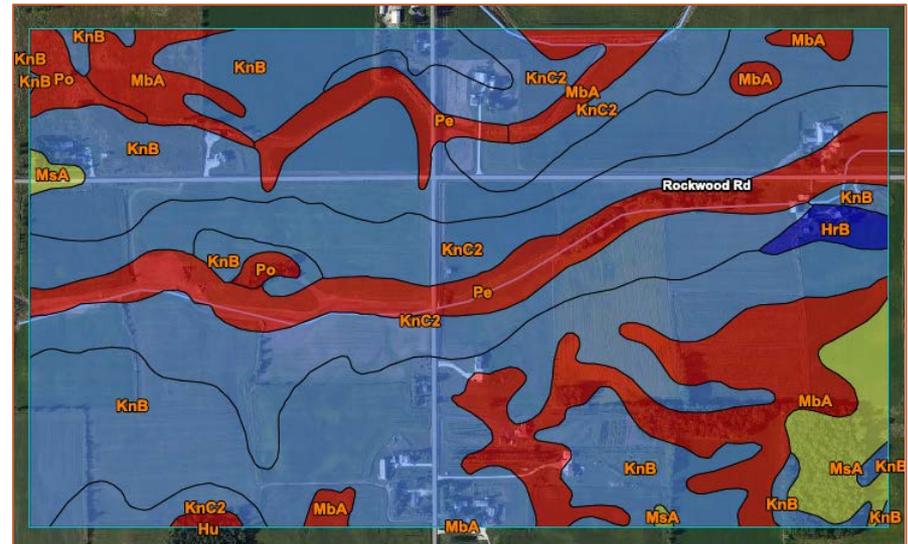
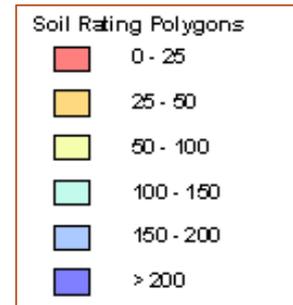
- Soil Qualities and Features
 - *Hydrologic soil groups* - necessary information for generating runoff curve numbers in hydrology analyses when designing conservation practices



Conservation Engineering

■ Soil Qualities and Features

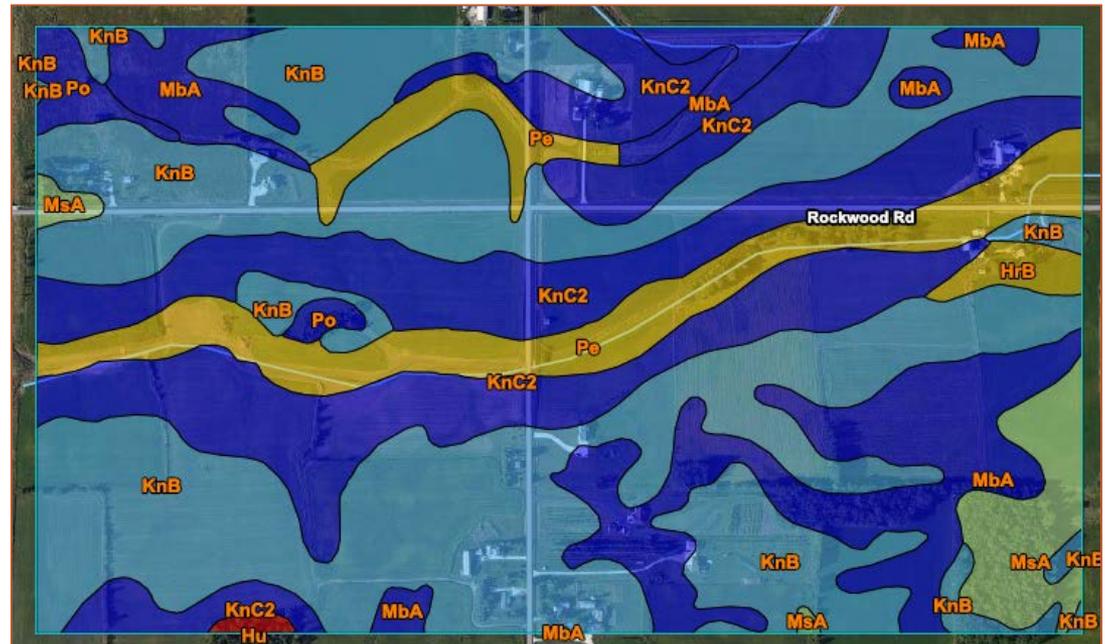
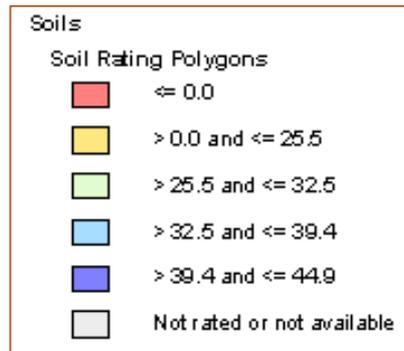
- Reconnaissance in office prior to site visits:
 - Depth to water table
 - Depth to restrictive layers (bedrock)
 - Wetland Soil indicators
- Helps with planning locations of conservation practices and determining location of soils investigations



Conservation Engineering

- Soil Physical Properties
 - Assists with planning type of practice and locating potential soil borrow areas
 - Percent Clay, Sand, Silt

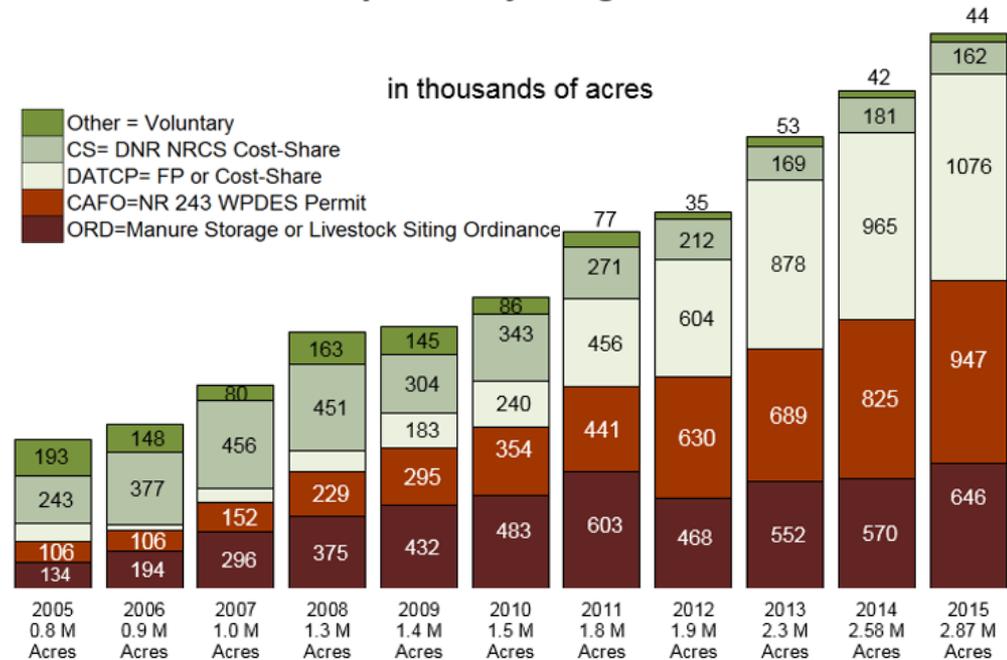
Percent Clay:



Nutrient Management

- NRCS 590 Nutrient Management Standard
- All farms in WI need a NMP if:
 - Given a \$28/ac NM cost share offer
 - Causing a significant **discharge**
 - Regulated by local manure storage or livestock siting **ordinances**, or by a DNR WPDES permit
 - Accepting manure **storage cost share**
 - Participating in the **Farmland Preservation Program**
- ~6,700 NMPs in 2015

2005-2015 Nutrient Management Plan Acres Reported by Program



Nutrient Management

- Wisconsin's NRCS 590 NM Standard includes many restrictions and prohibitions on manure and fertilizer applications based on soil properties
 - Slopes - $>12\%$ cannot receive winter manure applications
 - Nitrogen Restricted Soils
 - Depth to water table - $<12''$ to water table
 - Depth to bedrock - $<20''$ to bedrock
 - Degree of permeability – Sandy soils/high permeability
 - Cannot receive fertilizer in the fall
 - Reduced manure application rates

