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, agrichemical 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:

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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
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