Determining Feasibility of Engineering Practices for Conservation Activity Plans (CAPs)

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Review – What are CAP Plans?

Conservation Activity Plans (CAPs) that involve Engineering practices:

- CAP 102 – CNMP – Comprehensive Nutrient Management Plan
- CAP 110 – Grazing Plan
- CAP 118 – IWM – Irrigation Water Management Plan
- CAP 128 – AgEMP – Ag Energy Management Plan
- CAP 130 – DWM – Drainage Water Management Plan
Review – What are in CAP Plans?

- Identify conservation practices needed to address a specific natural resource need.
- Provides site specific information on how to address the resource concern.
Engineering Practices Requirement

- Practice of Engineering
  - IL610.21 – TSP

Handbook sets requirements for who can do Engineering Practices.
What are Engineering Practices?

- FOTG Section IV
- Index of Conservation Practices
Inventory & Evaluation

- I&E (or *Feasibility*) is required for each proposed practice.
- Amount of information needed for I&E varies:
  - Complexity and size of practice
  - Topography
  - Soils
  - Groundwater
  - Number of practices associated with proposed system.

Waste Transfer  ➔  Waste Separation  ➔  Waste Storage
Inventory & Evaluation

Does it solve a resource concern?

- Resource Concern: Water quality degradation: excess nutrients in surface and ground waters
- Solution: Nutrient Management, with Waste Storage Facility

The producer has only 6 months of manure storage on site and requires a minimum of 12 months of storage for proper nutrient management on application fields. The proposed waste storage will increase the storage for the site to approximately 13 months. This will allow the producer to have additional storage for when manure applications are delayed because of weather.
Inventory & Evaluation

- Is it feasible? Will it work with other proposed and existing practices? *(If site conditions are limiting, may need to find a different solution)*

- Estimated quantities *(enough for producer to make informed decision)*
CPS 313 – Waste Storage Facility

- Soils – Is a perimeter drain needed? (CPS 606)
- What size?
- Location
- Works with the management of the site
CPS 316 – Mortality Composting Facility

- Soils
- Capacity Needed
- Location
- Works with the management of the site
- Are all decisionmakers on board with the idea?
CPS 360 – Waste Facility Closure

- Clean up of site
- Proper disposal of waste
- No longer confinement
CPS 362 – Diversion

- Diverting clean water
- Sized properly
- Adequate slope
CPS 367 – Roofs & Covers

- Soils and foundation
- Roof support
- Type
- Span
CPS 533 - Pumps

- Sizing
- Capacity
- Pipeline parameters
- What is being pumped?
CPS 556 – Roof Runoff Structure

- What is the purpose?
- Sizing and type
- Downspout locations
- Adequate water removal
CPS 560 – Access Road

- Purpose
- Culverts/stream Xing
- Impediments
CPS 561 – Heavy Use Area Protection

- Purpose
- Stable cover
- Location
CPS 632 – Waste Separation Facility

- Purpose
- Works within the system
- Adequate bypass
CPS 634 – Waste Transfer

- Purpose
- Works within the system
- Can an agitator work
- Reception pit sizing
CPS 374 – Farmstead Energy Improvement

- Energy savings
- For IL, usually improving grain drying/storage
- Works with existing grain storage system
- Support for new system
CPS 670 – Lighting System Improvement

- Energy savings
- Bulb or Fixture Replacement?
- Quality of Light
CPS 672 – Building Envelope Improvement

- Energy savings
- Additional Insulation
- Sealing
- Air Quality Effects?
CPS 554 – Drainage Water Management

- CAP 130 is the plan; CPS 587 is the structure
- How many acres will each structure affect
- Don’t flood out the neighbors
CPS 449 – Irrigation Water Management

- Conservation of water
- Analyze the system for uniformity
- Irrigation scheduling
CPS 441 – Irrigation System Microirrigation

- IWM Plan
- Water Source
- Pump
- Crop
- Adequate water to crop
CPS 442 – Sprinkler System

- IWM Plan
- Water source & pump
- Distribution uniformity
CPS 443 – Irrigation System, Surface & Subsurface
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