PY20 Cost Share Training-Engineering Updates

Amanda S. Pennington, PE

District Engineering Services Manager

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What's on the agenda? Some new, some old…

- Animal Waste
  - Manure Injection (NM-6)
  - Animal Waste Control Facilities (WP-4)
  - Variance Procedure
- Engineering
  - EJAA
  - Specification vs Standard
  - Training

Animal Waste

- Manure Injection (NM-6)
  - New specification
  - Description and Purpose:

This practice will encourage manure injection on pasture and cropland, which will reduce nutrient transport to waterways and other environmentally sensitive features. Applications must be based upon the Nutrient Management Plan (NMP).

Manure Injection

- Uses direct manure injection equipment to place the manure in the ground
- Equipment to be determined by SWCD
- Technology currently only available for liquid manure

Manure Injection

- Eligibility
  - Must have current NMP
  - Must practice no till
  - Written verification must be provided to the district within 30 of application:
    - Work order or invoice
    - Must have:
      - Field and acreages
      - Application rates
      - Equipment used
      - Person who applied it

Manure Injection

- Rates
  - Only applies to fields that are a part of the current NMP
  - Cannot receive tax credit and cost share
  - $45 per acre applied

Animal Waste

- Animal Waste Control Facilities (WP-4)
  - Received a major facelift!
    - Much like an actual facelift, not much changed under the surface
  - Revised to make language more clear
  - A few significant changes

Animal Waste Control Facilities (WP-4)

- Shall vs should when considering existing storage facilities
  - As long as they are structural sounds, must consider them
- Changed “only six (6) months of storage to “up to six (6) months of storage”
- Roofs and covers over both the manure storage area and the feeding area are eligible

Animal Waste Control Facilities (WP-4)

- Removed language that enlargements cannot receive funding
  - Note-this was decided in a previous TAC year, the language was not revised
- Changed the lifespan to 15-years
- Changed the practice cap to $100,000
- Liquid storage pits sized for 7 months

Animal Waste

- Variance Procedure
  - Procedure to allow Districts to request an exception to the practice cap
  - Eligible Practices
    - WP-4
    - WP-4B
  - Must have money in the budget!

Variance Procedure

- Must be approved by the District Board before submittal to the DCR Variance Committee
- DCR variance committee will consist of:
  - Agricultural Incentives Programs Manager
  - CDC
  - AG BMP Engineer

Variance Procedure-required documentation

- Narrative outlining the Resource Concerns (AWMS Plan-System Description and Resource Concerns)
- Contract Number
- Tract #
- BMP Specification
- Conservation Plan
- Animal Type(s)
- Animal #

Variance Procedure-required documentation

- Quantity Waste Treated
- Sizing Calculations
- Size of Storage Facility
- If Feeding Facility: What Feeding, How being fed, % Confinement Used for Sizing
- Needs Determination Worksheet or Risk Assessment Form
- Copy of Topo with proposed location of facility

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Variance Procedure-required documentation

- Plan Map with proposed location of facility and all associated components
- Detailed Total Estimated Project Cost
- Estimated Cost-Share and Tax Credit
- Other Sources of Funding (Partner Agencies)
- Additional documentation (such as pictures) to support the request is encouraged.
- The DCR Variance Committee may request additional information if needed.

EJAA

- 2019 reviews coming soon!
- Includes folks who were reviewed in 2016 and on a 3-yr review cycle
- Regardless if you are due or not, may request increase
- Must include designs done since last review

EJAA

- Know if you have EJAA and what your cutoffs are
- Very important to stay within your EJAA when implementing projects

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VA Department of Conservation Recreation Engineering Job Approval Authority

Name: Tesla Pennington **Delegated by:** Amanda Pennington, PE **Title:** District Engineering Services Manager **Date:** 10/26/2018

District: DCR **Signature:** Amanda Pennington

Notes

1. Authority is issued based on the individual's training, experience, and demonstrated competence.
2. Employees shall not approve designs or certify construction for practices that exceed their maximum approval limit.
3. The controlling factor that results in the highest classification determines the Job Class. For example, a waste storage facility (pond) with a storage capacity of 100,000 cu. Ft. (Class II) and a fill height of 15 ft. (Class III) would be a Job Class III.
4. Engineering approval applies to new construction only. Refer to NEM 501.20-501.24 for repair and rehabilitation.
5. Engineering practices not listed, or more complex than those listed, shall be sent with documentation to the DCR Richmond Office for review and approval by the District Engineering Services Manager.
6. All jobs to be constructed under formal contract must undergo a functional review by the District Engineering Services Manager or designee.

Definitions of Maximum Approval Limits

INVENTORY AND EVALUATION (IE)-On site observations of an exploratory nature for planning and preparation of sound alternative solutions of sufficient intensity for the cooperator to make treatment decisions. May require assistance from higher levels for large or complex jobs. (See NEM 501 and 510)

All notes are important, but pay close attention to Notes 2 and 5.

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DESIGN-Designing and checking all aspects of the supporting data, drawings, and specifications to ensure that the planned practice will meet the purpose for which it is installed. Also includes setting any specific inspection requirements. Approval signature is required. (See NEM 501 and 511).

CONSTRUCTION (Const.)-Surveys, layout, staking, inspection of materials and work, and making tests to determine that the job meets specifications. Approval signature is required. Jobs where inspection staffing plans are issued are not included on this chart. (See NEM 201 and 512).

There are three types of EJAA, you must have EJAA for each phase of the project:

- Inventory and Evaluation
- Design
- Construction

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Approved Practices

ID	PracticeName	Controlling Factors	Units	I	II	III	IV	V	IE	Design	Const	Notes
313a	Waste Storage Facility	Storage Capacity	1,000 c	-	100	500	1,000	2,000	1		1	
362a	Diversion	Drainage Area	acre	10	25	50	150	All	2	2	2	
412a	Grassed Waterway	Capacity	cfs	25	50	150	250	All	2	1	2	
412b	Grassed Waterway	Design Slope	%	> 0.5	> 0.5	> 0.5	> 0.5	All	2	2	2	
516a	Livestock Pipeline	Pressure	psi	50	100	200	250	300	2	2	2	
516b	Livestock Pipeline	Diameter	in.	1.5	2	3	5	All	2	1	2	
516c	Livestock Pipeline	Length (longest run)	ft.	1,000	2,500	5,000	10,000	All	1	1	1	
533a	Pumping Plant	Livestock watering facility - Pu	each	-	All	-	-	-	5	5	5	
561a	Heavy Use Area Protection	Surface Area	acre	0.5	1	2	4	All	2	2	2	
561b	Heavy Use Area Protection	Surface Cover	type	veg	veg, gr	veg, grave	veg, gravel,	All	2	2	2	
578a	Stream Crossing	Design Velocity <= 6 fps	fps	All	-	-	-	-	1	1	1	3
578b	Stream Crossing	Design Velocity > 6 fps	fps	-	-	7	8	10	1	1	1	

ID-This is the NRCS Conservation Practice Standard ID. Note, the lower case letters indicate different controlling factors for issuance. For example, stream crossing, 578, can be issued for less than 6 fps (a) or greater than 6 fps (b).

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Practice Name-this is the NRCS Conservation Practice Standard name

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There may be several controlling factors for each NRCS practice standard, as indicated by the lower case letters under ID. You may earn EJAA for one or all of the Controlling factors.

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This lists the cutoffs for each controlling factor. You can refer to these columns for information regarding what you are authorized to design with your EJAA.

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This is where you find what your EJAA cutoff levels are. They are listed separately for I&E, Design and Construction. Please note, if the design exceeds these levels, you do not have the authority to approve the project at any phase.

Example-a watering system calls for 2600 feet of pipeline, Tesla does not have the authority to approve the design NOR the as built for this project. He would need level 3 EJAA to do so.

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For most NRCS Standards, this column will be blank. If a number is shown, as it is above for 578a, refer to the notes directly below your EJAA chart.

578b	Stream Crossing	Design Velocity > 6 fps	fps	-	-	7	8	10	1	1	1	

Practice Notes

1. Effective Height - Difference between the emergency spillway crest (top of embankment if no emergency spillway) and the lowest point in the original cross-section along the centerline of the embankment. All embankments that require a VA DCR Dam Safety permit shall be designed by a registered professional engineer.
2. Must use standard drawings approved by the District Engineering Services Manager (DESM). Note applies to all jobs classes unless note (2) appears with a particular class.
3. Up to maximum limit shown on DESM approved standard drawing. Note applies to all job classes unless note (3) appears with a particular class.
4. Wall Height - The distance in feet from the top of the floor inside the storage facility to the top of the wall.
5. All must have relatively impervious cutoff, simple foundation needs, and use standard detail drawings approved by the DESM. Dam classification must be Low Hazard and the product of storage (acre-feet) times effective height (feet) equals 3,000 or less. All dams subject to Virginia Dam Safety regulations shall be designed and sealed by a registered professional engineer.
6. NRCS will not provide design or construction assistance to solve erosion problems created by wave action on the open and unprotected shores of the Atlantic Ocean.
7. Dam removal requires approval by DESM.
8. See controlling factors listed below for Dams and Structures Practices 410, 552, 436, 378, 350, and 587.
9. All custom roof designs shall be designed by a Virginia licensed P.E.

Inventory and Evaluation (I&E)

- This is planning the appropriate engineering practice for the problem
- Must have I&E EJAA for the NRCS practice standard for board approval
  - We often receive design requests for projects that already have board approval, and find the project does not qualify
- Must be a water resource concern

Least Cost, Technically Feasible!

I&E

- Least cost, technically feasible
  - Example-When to use a reservoir
    - Should not be installed as an emergency water source
    - Can be used with a gravity or solar system
  - No producer convenience
  - Finding the least cost solution to solve the water resource concern

I&E

- Must meet VACS specification
  - Using an SL-6 vs a WP-2
    - SL-6 includes alternative watering system and fencing
    - WP-2 is a fencing practice, can do a limited access, but no alternative watering system
    - One or the other
  - WQ-12, water coming off of the barn roof must be coming into contact with manure
  - Be sure to use the specification for the program year the project is being funding from

I&E

- Risk assessment for feeding facilities
  - Can moving the operation solve the resource concern?
- Each site is different, solution will be different

Site dictates the practice, the practice does not dictate the site!

I&E

- When being assisted by NRCS, remember, they have a very different program and their planning may be different as they address different resource concerns, and some production based practices, even if the designs are the same-VACS is strictly water quality!
- When using a private PE for design, District employee still needs I&E

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VACS Specification vs NRCS Conservation Practice Standard

- VACS Specifications are the program qualification requirements
- VACS Specifications reference NRCS Conservation Practice Standards
  - Ex SL-6 (VACS spec, Stream Exclusion) references CPS 578 (Stream Crossing)
- VACS spec always overrides the NRCS CPS

VACS Spec vs NRCS CPS

- WP-4 Animal Waste Control Facilities, VACS Spec, references NRCS CPS 313 Waste Storage Structure
- CPS 313 states:
  - "the storage period is the maximum length of time anticipated between emptying events
- WP-4 states:
  - "…cost share for up to 6 months of storage"

VACS Spec vs NRCS CPS

- WQ-12 Roof Runoff Management System, VACS spec, references NRCS CPS 558 Roof Runoff Structure
- CPS 558 states:
  - "Consider installation of rain gardens at the outlets to clean, transpire and infiltrate runoff water"
- WQ-12:
  - purpose to keep clean water clean that would otherwise be coming into contact with manure, and not intended to address stormwater management

Upcoming 2019 Training

- Area I JED
  - July 10
- Graves Mountain
  - Wednesday, August 21st PM
  - Thursday, August 22nd AM

Questions???

Contact:

Amanda S. Pennington, PE

District Engineering Services Manager

804-786-0113

amanda.pennington@dcr.virginia.gov

Raleigh Coleman

Ag. BMP Engineering Specialist

540-270-0039

raleigh.coleman@dcr.virginia.gov

Ben Chester, PE

Agricultural BMP Engineer

540-553-6263

benjamin.chester@dcr.virginia.gov