THE DIFFERENCE BETWEEN NRCS CONSERVATION PRACTICES & RESOURCE IMPROVEMENT PRACTICES

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BASIC DESCRIPTIONS

NRCS Conservation Practice Standards

The conservation practice standard contains information on why and where the practice is applied, and it sets forth the minimum quality criteria that must be met during the application of that practice in order for it to achieve its intended purpose(s).

CPs make up the foundation of the Field Office Technical Guide (FOTG), which provides technical information about the conservation of soil, water, air and related plant and animal resources.

NRCS Standards define a minimum. State conservation practice standards may be more restrictive.

When planning, designing or installing a CP, the standard must have been developed by the state the practice is located in. All state and local criteria must be met.

Resource Improvement Practices

Non-Cost Shared BMPs that are typically financed by the operator or other non-public entity or source and may or may not meet the practice standards associated with federal and state cost-share programs.

These practices do not fully address all NRCS practice standards but do comply with appropriate CBP BMP Definitions.

NRCS Conservation Practice Standards

WHAT IS CONTAINED WITHIN NRCS CONSERVATION PRACTICE STANDARDS?

(1) The official name, practice code, and unit of measurement for the practice (required).

(2) Definition of the practice (required).

(3) Purpose(s) for applying the practice including the resource concern(s) to be addressed (required).

(4) Conditions where the practice applies (required).

(5) Criteria supporting each purpose (required).

(6) Considerations for practice planning, design, and installation (optional but recommended).

(7) Minimum requirements for plans and specifications (optional but recommended).

(8) Minimum requirements for the operation and maintenance of the practice (optional but recommended).

(9) References that are the basis for or support the technology in the practice (required).

NRCS PRACTICE CONTRACT DURATION AND PRACTICE LIFESPAN

CONTRACT DURATION

- Most **NRCS contracts** last for a minimum of three years, and it is required that you have at least one **conservation practice** commenced during the first year of your **contract**
- Environmental Quality Incentives Program (EQIP) contracts can last up to **ten** years**.**
- Conservation Stewardship Program (CSP) contracts can last three years.
- The conservation practice must be maintained for the duration of the agreement.
- NRCS will monitor the contract throughout its entire duration.

PRACTICE LIFESPAN

- The minimum time (years) the implemented practice is expected to be fully functional for its intended purposes.
- Lifespans are based on following an operation and maintenance plan developed for the practice.
- NRCS practice lifespans can only be reached if the practice has been maintained as set forth in the practice standard.

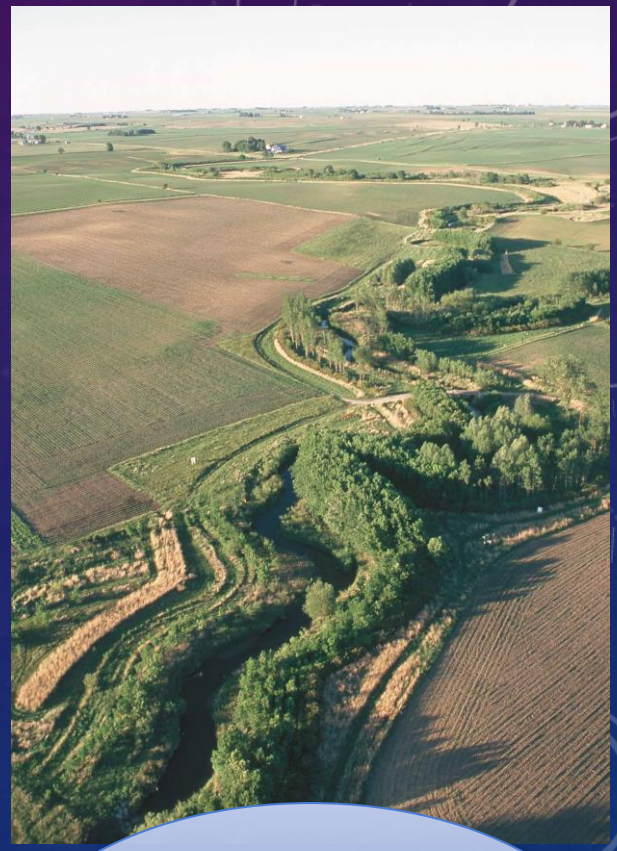
DEEPER DIVE INTO NRCS LIFESPANS PER THE GENERAL MANUAL 401 SUBPART B – CONSERVATION PRACTICE STANDARDS

- Lifespans for “structural” practices may vary from 3 years for small earthen structures to 20 years or longer for large earthen or concrete structures, buried pipelines, etc.
- The minimum lifespan for permanent “vegetative” establishment type practices is 5 years.
- A 1-year application lifespan is established for those “management” type conservation practices, where practices are reapplied (other than normal operation and maintenance) annually or more than one time on the same land to achieve its purpose(s). Examples of one (1) year lifespans include: Prescribed Grazing, Cover Crops, Nutrient Management, Irrigation Water Management, Residue and Tillage Management practices, etc.

NRCS OPERATION AND MAINTENANCE

Example: NRCS 391; Riparian Forest Buffer

- Inspected periodically and protected from adverse impacts such as excessive vehicular and pedestrian traffic, pest infestations, concentrated flows, pesticides, livestock or wildlife damage and fire.
- Replacement of dead trees or shrubs and control of undesirable vegetative competition will be continued until the buffer is, or will progress to, a fully functional condition.
- Any manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation shall sustain the intended purpose(s). Refer to the standard Forest Stand Improvement, 666.
- Control or exclusion of livestock and harmful wildlife shall continue. Refer to the standards Prescribed Grazing, 528, and/or Access Control, 472, as applicable.
- Fertilizers, pesticides and other chemicals used to maintain buffer function shall not impact water quality.



Practice lifespan:
15 years

USDA OMB GUIDANCE ON VERIFICATION

From the AgWG Guidance in the Framework Document:

- *The AgWG considered the USDA's 5% Verification Cap a Critical Overarching Issue.*

- From the Framework Document:
  - USDA currently places a cap on its level of verification of contracted cost-share practices at 5%.
  - USDA documents reflect that USDA bases this verification level primarily on dollars spent, not pollution control achieved.
  - In addition, USDA limits access to location information of the practices for purposes of conducting verification.

- "The Agricultural Work Group recognized that the Bay Program's state jurisdictions cannot alter the federal USDA verification standards, and that only a sister federal agency such as EPA can challenge and, as appropriate, rework this federal standard for Chesapeake Bay water quality improvement.
- The Work Group determined that **EPA and USDA** must take the necessary steps **to together determine the appropriate federal standard for verification of USDA contracted cost-share practices** from a water quality, natural resource stewardship perspective."

Resource Improvement Practices

WHY IS IT IMPORTANT TO REPORT NON COST SHARED BMPS?

- **Farmers and Agricultural Landowners** voluntarily install many BMP's outside of state or federal cost share programs or cannot accept a government subsidy.
    - Plain Sect Farmers (Amish, Mennonite Farmers as examples)
    - Farms owned by corporations that cannot accept federal funding due to the payment limitations.

- **Some state nutrient regulations** require farmers to install practices that provide water quality protection and need to be verified for compliance with state laws. These state requirements may result in practices that are not required to meet NRCS Standards and Specifications
    - Stream Exclusion (fencing type or distance from stream)
    - 10’ and 35’ buffers for fertilizer and manure application setbacks

- **Watershed Organizations, Environmental Organizations, Conservation Organizations, and NGOs** are all helping Farmers and Agricultural Landowners to meet WIP goals to protect water quality by installing BMPs:
    - Shenandoah RC&D Council - Stream exclusion fencing with narrow width tree plantings Nanticoke Watershed Alliance – 10’ Buffers on Drainage Ditches
    - Chester River Association - Switch grass plantings for field buffers
    - Mid-Shore Riverkeeper Conservancy - Water Control Structures on Field Ditches

WHY WERE RI PRACTICES DEVELOPED?

- These practices provide a similar annual environmental benefit for water quality but may not fully meet all the design criteria of existing governmental standards.
- RI BMPs can be the result of a farmer choosing not to completely follow all the details of the design standard from the Conservation District or NRCS but will contain all the critical elements for water quality resource improvement.

How were RI practices developed?

- Development began in July 2013 with MDA presenting their “Non Cost-Shared Management Practice Verification Procedures Manual” (developed in conjunction with representative Conservation Districts) to be approved by the AgWG.
- In 2011, MDA conducted a review of practices farmers installed without cost sharing and determined there were 14 practices that were (at the time) called “Functional Equivalent Practices”.
- The November 2013 version of this document was used by the technical panel to develop the RI Report.
- The final RI document was approved by the AgWG, WTWG, and WQGIT in 2014.
- Jurisdictions that chose to report RIs developed the specified guidance and sought the appropriate CBP approval process.

WHO WAS INVOLVED IN DEVELOPING RI'S?

Technical Review Panel Members	Affiliation
Robert Ensor – Panel Chair	District Manager, Howard SCD-MD
Debbie Absher	Director of Ag Programs, SCD-DE
Gary Moore	Ag Incentives Program Manager, DCR-VA
Lamonte Garber	Watershed Restoration Coordinator Stroud Water Research Center, PA
Beth McGee	Sr. WQ Scientist, Chesapeake Bay Foundation, MD
Greg Albrecht	NYS Department of Agriculture and Markets-NY
Elmer Weibley	District Manager, Washington County SCD- MD
Charlie Wootton	Piedmont SWCD- VA, TMDL Conservation Specialist
Jeff Hill	Ag Program Manager, Lancaster County SCD-PA
NRCS Members In an Advisory Role	
Hosea Latshaw	State Conservation Engineer, NRCS-PA
Larry Tennity	State Conservation Engineer, NRCS-DE
Ann Baldwin	Environmental Engineer, NRCS-MD
Sally Kepfer	State Resource Conservationist, NRCS-DE
Dale Gates	Resource Conservationist, NRCS-NY
Other Advisors	
Dana York	Green Earth Connection
Mark Dubin	University of Maryland

Technical assistance provided by Emma Giese (Chesapeake Research Consortium)

Technically qualified member nominations were requested by the Ag WG and made by jurisdictions.

- Specialists from MD, DE, VA, PA, and NY.
- NRCS Conservation Engineers and Conservationists from PA, DE, MD, and NY.
- "Other Advisors": Dana York with Green Earth Connection and Mark Dubin with UMD.

WHICH BMPS ARE RESOURCE IMPROVEMENT PRACTICES?

Resource Improvement Practices

There are 19 Resource Improvement Practices. Some practices have multiple options for different widths or vegetation:

	Resource Improvement Practice Name	Additional Practice Information
RI-1	Dry Waste Storage Structure	
RI-2	Animal Compost Structure	
RI-3	Alternative Crop/Switchgrass	
RI-4a	Watercourse Access Control-Narrow Grass	10'-34' Width Exclusion Area, Natural Grass or planted
RI-4b	Watercourse Access Control-Narrow Trees	10'-34' Width Exclusion Area, Native Trees or planted
RI-5	Watercourse Access Control-Grass	35'+ Width Exclusion Area, Natural or planted Grass
RI-6	Watercourse Access Control-Trees	35'+ Width Exclusion Area, Natural or planted Trees
RI-7	Grass Nutrient Exclusion Area on Watercourse	10'-34' Width Nutrient Exclusion Area
RI-8	Grass Buffer on Watercourse	35'+ Width Buffer
RI-9	Forest Nutrient Exclusion Area on Watercourse	10'-34' Width Nutrient Exclusion Area
RI-10	Forest Buffer on Watercourse	35'+ Width Buffer
RI-11	Vegetative Environmental Buffer for Poultry-Grass	Warm Season Grass
RI-12	Vegetative Environmental Buffer for Poultry-Trees	Trees
RI-13	Conversion to Pasture	
RI-14	Conversion to Hayland	
RI-15	Rotational Grazing	
RI-16	Barnyard Clean Water Diversion	
RI-17	Water Control Structure	
RI-18	Watering Trough	

HOW DO JURISDICTIONS SUBMIT RI PRACTICES?

- Jurisdictions complete the following checklist to ensure the practice meets the approved RI definition and all elements of an RI are present with appropriate Visual Indicators.

  - ✓ Date of verification and name of certifying official;
  - ✓ Landowner information: such as address, county, etc.;
  - ✓ Location of RI on the landscape such as: marking on an aerial map or conservation plan map, GPS location or Latitude/Longitude coordinates, etc.;
  - ✓ Presence of the required VIs (as appropriate);
  - ✓ Date the practice was installed by the farmer;
  - ✓ Appropriate reported units for state database and NEIEN;
  - ✓ Visual documentation such as a photo of the practice, drawing or other description;
  - ✓ Other notes as needed for additional documentation or re-verification.

  The RI checklist and associated information will be placed the farmer's conservation plan or other jurisdictional approved location.

HOW DO JURISDICTIONS PROPOSE ADDITIONAL RI PRACTICES?

Additional RIs, per the Ensor RI Report, must be approved by the AgWG, WTWG, and WQGIT.

HOW ARE RI PRACTICES VERIFIED?

- If the practice has been properly maintained and operated on the landscape for more than one year, a Visual Assessment is appropriate.
- The visual assessment seeks the presence of key elements that must be present to achieve the sought-after water quality benefits of the practice.
- The Visual Indicators test followed a WQGIT approved process developed by the Stormwater Sector for verification of homeowner BMPs.

How are RI Practices located?

- RI practices are usually identified during a visit with a farmer.

Why is the re-verification interval for some agricultural RI BMP more frequent than practices meeting state or federal programs?

- To ensure that the BMP is functioning properly by reviewing the efficacy of the RI BMP and the farmer's operation and maintenance of the BMP.
- State and federal programs have design criteria and requirements that do not apply to RI practices, which is why RI practices were developed in the first place.
- The design of an RI practice may not be as extensive as similar state funded or NRCS practices.
    - **For example**, NRCS practices must be inspected to ensure design criteria have been met; RI practices do not. Other programs may have different requirements for different lengths of time.

WHO CAN REPORT RI PRACTICES?

Any trained and/or certified technical field staff person that has the required knowledge and skills to determine if the practice meets the applicable RI definition and VIs may conduct the RI practice review.

Jurisdictions will have final oversight and will be the certifying entity of all information that is provided and approved for entry into the CBP NEIEN reporting system.

RI BMPs may be reported by using any approved AgWG Verification method (See Appendix B in the BMP Framework Document).

EXAMPLE: DRY WASTE STORAGE STRUCTURE

- Purpose: To temporarily store dry stackable manure.
- Criteria: Facility size large enough to store all accumulated dry animal manure, for the maximum period during which such wastes cannot be applied to the land for reasons such as operational restrictions, weather, or crops. Storage of stackable manure must meet all state and local regulations. All runoff is controlled and non-polluting. Waste handling equipment shall be available.

RI-1: Dry Waste Storage Structure Example Checklist Verification Date:

Cooperator Name, Address, and Phone #	FSA Farm / Tract Field Number:	SCD	Inspection Type ☐ Initial Inspection ☐ QA Spot Check ☐ Re-verify ☐ Other _____

	RI-1 Practice: Dry Waste Storage Structure				Supporting Data & Documentation:
	Re-Verification Interval: 5 years	Y	N	N/A	
	RI-1 Visual Indicators				
1	Does facility operate without polluting waters?				Visual observation
2	Facility is located ≥ 100' from wells, unless there is a Health Dept. waiver or per State, County or Local Regulation				Estimate by paces
3	Facility is 100 feet from top of bank of any stream or per state, county or local regulation.				Estimate by paces
4	Volume per sizing sheet for NRCS Spec or describe management methodology used by farmer				Owner interview
5	Offsite runoff is excluded or accounted for in storage				Visual observation
6	Storage of stackable manure must meet all state and local regulations. All runoff is controlled and non-polluting.				Visual observation and Owner interview
7	No safety concerns present.				Visual observation
8	Slab on grade, or may be other stabilized impervious surface.				Visual observation
9	Retaining wall if used is straight, not in imminent danger of failure				Visual observation
	Meets RI-1 Visual Indicators				
	RI-1 Installation Date:				
	RI-1 Reportable Units:				
	Number of Systems:				
	Animal Type: AU:				
	CERTIFICATION DATE/INITIALS:				
	RE-VERIFICATION DATE/INITIALS:				

All Visual Indicators must either have a Y or NA marked. If an N is marked on the checklist, the RI may not be reported until the deficiency is addressed.

Additional Notes/Documentation about RI:

WHAT ARE THE CREDIT DURATIONS OF RI PRACTICES?

RI BMP Name	RI Re-Verification Intervals (Years)
Dry Waste Storage Structure	5
Animal Compost Structure	5
Alternative Crop/Switchgrass	5
Watercourse Access Control (Narrow, Grass, Trees)	5
Grass Nutrient Exclusion Area on Watercourse and Grass Buffer on Watercourse	5
Forest Nutrient Exclusion Area on Watercourse and Forest Buffer on Watercourse	10
Vegetative Environmental Buffer for Poultry, Grass	3
Vegetative Environmental Buffer for Poultry, Trees	5
Conversion to Pasture or Hayland	3
Rotational Grazing	3
Barnyard Clean Water Diversion	5
Water Control Structure	5
Watering Trough	5

CREDIT DURATION EXAMPLE: DRY WASTE STORAGE

Related NRCS Practices

- NRCS 313; Waste Storage Facility

Purpose: To store manure, agricultural by-products, wastewater, and contaminated runoff to provide the agricultural operation management flexibility for waste utilization.

Practice Lifespan is 15 years.

Contract duration can range from 3 to 10 years.

RI Practice

- Purpose: To temporarily store dry stackable manure.
- This practice does not address liquid waste storage.
- Re-verification occurs every 5 years

HOW DO THE PRACTICES DIFFER?

1) Design Criteria

RI-1 Dry Waste Storage

- Size of the facility should be large enough to store all accumulated dry animal manure, for the maximum period during which such wastes cannot be applied to the land for reasons such as operational restrictions, weather, or crops.
- Storage of stackable manure must meet all state and local regulations.
- All runoff is controlled and non-polluting.
- Waste handling equipment shall be available to remove waste materials from agricultural waste storage facility and apply it to the land at the locations, times, and rates per local, county or state regulations.

RI-1 Visual Indicators
Does facility operate without polluting waters?
Facility is located ≥ 100' from wells, unless there is a Health Dept. waiver or per State, County or Local Regulation
Facility is 100 feet from top of bank of any stream or per state, county or local regulation.
Volume per sizing sheet for NRCS Spec or describe management methodology used by farmer
Offsite runoff is excluded or accounted for in storage
Storage of stackable manure must meet all state and local regulations. All runoff is controlled and non-polluting.
No safety concerns present.
Slab on grade, or may be other stabilized impervious surface.
Retaining wall if used is straight, not in imminent danger of failure

HOW DO THE PRACTICES DIFFER?

1) Design Criteria

NRCS 313; Waste Storage Facility

- Operational, emergency, and freeboard volume identified.
- Corrosion, plugging, freeze damage, ultraviolet resistant inlet.
- Provide components for removing waste such as gates, pipes, docks, wet wells, pumping platforms, retaining walls, or ramps.
- Maximum operating level with staff gauge.
- ASABE Standard EP470 features to minimize hazards.
- NRCS 367 to design roofs and covers, fasteners and treated wood.
- Foundation, bottom elevation, outlet, embankments, spillway protection, excavations, seepage, internal drainage, structural loading etc. all considered.

Table 1. Minimum Top Widths

Total embankment height (ft)	Top width, (ft)
Less than 15	8
15–19.9	10
20–24.9	12
25–30	14
30–35	15

Table 2. Presumptive Allowable Foundation and Lateral Pressure[1]

Class of materials	Allowable foundation pressure (psf)	Lateral bearing (psf/ft) below natural grade	Coefficient of friction	Cohesion (psf)
Crystalline bedrock	12,000	1,200	0.70	-
Sedimentary and foliated rock	4,000	400	0.35	-
Sandy gravel or gravel (GW and GP)	3,000	200	0.35	-
Sand, silty sand, clayey sand, silty gravel, clayey gravel (SW, SP, SM, SC, GM and GC)	2,000	150	0.25	-
Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH)	1,500	100	-	130

[1] International Building Code (IBC), 2015, International Code Council (ICC)

HOW DO THE PRACTICES DIFFER?

2) Operation and Maintenance

RI-1 Dry Waste Storage

- Re-verified every 5 years using visual indicators.

HOW DO THE PRACTICES DIFFER?

2) Operation and Maintenance

NRCS 313; Waste Storage Facility

- Develop an operation and maintenance plan that is consistent with the purposes of the practice, its intended life, safety requirements, and the criteria for its design. At a minimum, the plan will contain where appropriate:
- Include the operational requirements for emptying the storage facility including the expected storage period. Begin removal of the liquid storage facility as soon as practical after the maximum operating level has been reached. Also include the requirement that waste be removed from storage and utilized at locations, times, rates, and volume in accordance with the overall waste management system plan.
- For impoundments and other liquid storages include an explanation of the staff gauge or other permanent marker to indicate the maximum operating level. For storages where the contents are not visible and a staff gauge would not be visible, such as below a slatted floor, identify the method for the operator to measure the depth of accumulated waste.
- Include a provision for emergency removal and disposition of liquid waste in the event of an unusual storm event that may cause the waste storage structure to fill to capacity prematurely.
- Include instructions as needed for ventilating confined spaces according to ASABE standard S607, Venting Manure Storages to Reduce Entry Risk.
- Develop an emergency action plan for waste storage facilities where there is a potential for significant impact from breach or accidental release. Include site-specific provisions for emergency actions that will minimize these impacts.
- Include a description of the routine maintenance needed for each component of the facility. Also include provisions for maintenance that may be needed as a result of waste removal or material deterioration.

WHAT DO RI PRACTICES AND NRCS CONSERVATION PRACTICES HAVE IN COMMON?

- These practices both involve agricultural BMPs.
- Both practice standards involved the input and expertise of NRCS Conservationists and NRCS Conservation Engineers.
- NRCS practices are used as reference practices in the identification of Non-Cost Shared Practices as meeting an NRCS Standard or a RI.
- RI Practices build off the foundation laid by NRCS Conservation Practice Standards, but do not match NRCS design specifications.
  - Ultimately, these practices seek to introduce flexibility to BMP validity and reporting.
- Both practices stress the importance of maintenance and verification to ensure practices are functioning as intended to improve water quality.