

**SATURATED BUFFER
(CODE 604)**

DESCRIPTION

A subsurface, perforated distribution pipe used to divert and spread drainage system discharge to a vegetated area to increase soil saturation.

PURPOSE

Install the practice to achieve one or more of the following purposes:

- To reduce nitrate loading from subsurface drain outlets.
- To enhance or restore saturated soil conditions in riverine, lacustrine fringe, slope, or depression hydrogeomorphic landscape classes.

CONDITION

This practice is applicable to lands with a subsurface drainage system adaptable to discharge in a vegetated area.

Apply this practice where the soils and topography of the vegetated discharge area can maintain a raised water table without adverse effects to crops, channel banks, shorelines, or adjacent land.

This practice does not apply to drainage systems or underground outlet systems that have surface inlets which allow entry of soil and debris capable of plugging the distribution pipe(s).

Do not use this practice to discharge septic system effluent or animal waste.

POLICIES

1. NRCS Standards and Specifications for Saturated Buffer (Code 604) shall be followed when applying this practice either alone or as part of a system.
2. The applicant and the farm's Nutrient Management Plan must be in compliance with Maryland's Nutrient Management regulations (COMAR 15.20.08) at the time of Application. No Applications will be approved without a Nutrient Management Plan Certification Form submitted with the Application (SECTION III, #30).
3. It is the owner's responsibility to contact MDE and/or the Corps to make a determination whether a permit will be required before a new practice can be installed.
4. This practice must be properly maintained for a minimum of ten (10) years. The applicant agrees to provide all equipment, labor, and materials needed to meet this requirement. Financial assistance may be provided for repairs if a BMP previously installed with MACS support was damaged due to an unpredictable act of nature and not due to the applicant's negligence or poor maintenance.

5. Cost share *is authorized* for the following:

- a. *Lined Waterway or Outlet (code 468)*
- b. *Structure for Water Control (code 587)*
- c. *Subsurface Drain (code 606)*
- d. *Underground Outlet (code 620)*

6. Cost share *is not authorized* for the following:

- a) *Vertical Drain*
- b) *Field drainage lateral(s)*

7. If required, a Drainage Water Management plan (code 554) must be followed.

8. Drainage area calculations must be based solely on runoff from the agricultural parcel upon which the saturated buffer will be constructed.

9. Design the water control structure using the criteria found in CPS Structure for Water Control (Code 587). Locate the water control structure where it is accessible for water table observation and for operation and maintenance.

10. Design the water control structure to maintain the target water table elevation(s) over the distribution pipe during the management period. Convey drainage water exceeding the design capacity of the saturated buffer through an overflow pipe to a suitable, stable outlet. Use a nonperforated pipe for the overflow pipe for a minimum of 20 feet from the water control structure to avoid draining the saturated soil zone around the water control structure.

11. The water control structure must not cause water to back up into a main or lateral beyond a property line unless the upstream landowner provides written permission.

12. Vegetate the soil saturation area and any other disturbed areas to prevent erosion and to utilize nitrogen from the drain water.

13. Protect all disturbed areas from erosion by seeding or mulching. Refer to CPSs Conservation Cover (Code 327) or Critical Area Planting (Code 342) for criteria on seed selection, seedbed preparation, fertilizing, and seeding.

14. Maintain a water table within 12 inches of the ground surface at the location of the distribution pipe during the management period. Maintain the water control structure at the design level except when the water table must be lowered for providing an adequate root zone for the crop, trafficability for field work, adverse weather conditions, or system maintenance.

15. Consider using other practices and management systems in conjunction with this practice to achieve a reduction of nitrate-nitrogen levels. Examples include CPSs Nutrient Management (Code 590), Cover Crop (Code 340), Drainage Water Management (Code 554), Denitrifying Bioreactor (Code 605), and Created Wetland (Code 658).

16. For cost-effectiveness, consider locating the saturated buffer where it will intercept a subsurface drain outlet draining at least 15 acres.
17. Consider installing observation wells in the buffer midway between the distribution pipe and the stream bank or shoreline to facilitate water table documentation and sampling.
18. A saturated buffer may infiltrate less overland flow than a nonsaturated buffer.
19. Where possible to maintain a water table at or near the buffer soil surface, planting the buffer to a mix of hydrophytic species suitable for wet soil conditions will enhance nitrate removal and increase soil carbon replacement at and near the soil surface.
20. Installation of this practice may enhance wildlife and pollinator habitats.
21. Consider measures to reduce the potential for root plugging of distribution lines by woody species. Set planted trees back far enough that distribution lines will not be under the drip line of mature tree canopies. Plant herbaceous species in areas over distribution lines. If the riparian area is currently in trees, either clear the trees or establish an herbaceous zone outside the tree line for the water distribution area.

OPERATION AND MAINTENANCE

Develop an operation and maintenance plan. Review this plan with the land manager. Specified actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance). At a minimum, include a description of—

- Planned water level management and timing.
- Inspection and maintenance requirements of the water control structure(s), distribution pipe(s), and contributing drainage system, especially upstream surface inlets.
- Periodic removal of invasive trees or shrubs to reduce distribution line plugging.

COST-SHARE RATE

The State cost-share payment, alone or when combined with any other cost-share program, shall not exceed 100% of the total eligible cost, not to exceed \$150,000 per project.

ATTACHMENTS

Applicant(s) with an outstanding Unsatisfactory On-Farm Status Review of BMP Maintenance and Use of previous project(s) may be ineligible for MACS Cost-Share funding. When a previous project expires with outstanding unsatisfactory status, the applicant is ineligible for any future MACS funding.

The following items are needed:

1. A copy of a recorded deed(s) for the parcel(s) where the BMP is located. If the current, appropriate deed is already on file in the MACS Office, then record both the agreement number of the file where the deed is kept and the liber/folio numbers in the General Comments section of the application.
2. A copy of the Real Property Data Search page from the Maryland Department of Assessments and Taxation's website (www.dat.maryland.gov) indicating the Maryland Property View Account ID Number and owner information.
3. An aerial photograph indicating the property lines as well as all existing and proposed BMPs. In addition, indicate drainage area and direction of flow.
4. A plan view sketch of the area indicating the location of the proposed BMP and graphically demonstrating the layout and details of the project.
5. Nutrient Management Plan Certification Form shall be submitted with the Application (SECTION III, #30).
6. Provisions for Saturated Buffer.