

**NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA CONSERVATION PRACTICE STANDARD**

ROAD/TRAIL/LANDING CLOSURE AND TREATMENT

(Ft.)

CODE 654

DEFINITION

The closure, decommissioning, or abandonment of roads, trails, and/or landings and associated treatment to achieve conservation objectives.

PURPOSE

To minimize various resource concerns associated with existing roads, trails, and/or landings by closing them and treating to a level where one or more the following objectives are achieved:

- Controlling erosion (road, sheet and rill, gully, wind), chemical residues and off-site movement, sediment deposition and damage, accentuated storm runoff, and particulate matter generation;
- Restoring land to a productive state by reestablishing adapted plants and habitat (wildlife food, cover, and shelter), reconnecting wildlife habitat and migration corridors including streams and riparian areas, and controlling noxious and invasive species;
- Reestablishing drainage patterns that existed prior to construction of the road, trail, or landing to restore the form and integrity of associated hill slopes, channels, and floodplains and their related hydrologic and geomorphic processes;
- Minimizing human impacts to the closure area to meet safety, aesthetic, sensitive area protection, or wildlife habitat requirements.

CONDITIONS WHERE PRACTICE APPLIES

On roads, trails, and landings designated for closure including cut-and-fill slopes, sidecast areas and associated drainage structures.

CRITERIA

Roads, trails, and landings will be designated into one of three levels of treatment:

- 1) Closure and treatment to a level that facilitates future use for management activities.
- 2) Closure, treatment, and reconnection to applicable drainage networks (usually involves culvert removal which limits potential for future use).
- 3) Closure, removal and reshaping to natural contours, treatment and stabilization, and natural landscape and drainage restoration.

Determine the appropriate level of treatment based on the associated severity of environmental effects of existing roads, trails, and landings; future access requirements; and short-term disturbance effects during closure and treatment activities.

Treatment shall result in physical conditions and a configuration that achieve the stated purpose and objective(s). Approved technology tools will be used to support design and specifications development such as prediction models for erosion, hydrology and hydraulics, soil mechanics and slope stability, and

wildlife/habitat interactions.

Closure and treatment activities and final conditions and configuration will minimize adverse onsite and off-site effects such as water and wind erosion including particulate matter/dust generation, concentrated flows to unprotected areas, destabilization of slopes and mass wasting, riparian area or wetland degradation, stream channel and streambank damage, barriers to aquatic organism and wildlife movement or migration, hydrologic modification, or other water resource damage. Any seep or spring that is on or associated with the area to be treated shall not be buried under fill nor have its drainage concentrated through unarmored fill areas. Seeps and springs shall be reconnected to appropriate drainage networks.

Treatment and construction techniques will be scheduled to minimize soil erosion, displacement, compaction, aesthetics degradation, safety concerns, barriers to wildlife movement, or unacceptable damage to adjacent areas.

All levels of treatment will utilize measures applicable to that level such as, but not limited to, the following:

- Permanent or temporary traffic barriers and caution signage.
- Excavation and reshaping of roads, trails, landings, and drainage ways to natural conditions including culvert removal and reconnection of the site areas to appropriate drainage networks.
- Ripping to improve infiltration and vegetation root growth.
- Topsoil stockpiling and resspreading and, in some cases, importing.
- Rolling grades to disperse runoff of selected road and trail segments to be closed.
- Control of nuisance, noxious or invasive species.

- Establishment of adapted vegetation in accordance with the Virginia Plant Establishment Guide. This includes application of mulch and soil amendments as necessary to enhance establishment.

Treatments to restore natural topography and surface hydrology will result in stable slopes and be compatible with existing land uses in the vicinity.

Minimize indirect adverse impacts or effects of the practice on species with declining populations, particularly aquatic species in streams or wetlands downslope of project area.

Remove hazardous material from the site prior to the start of construction. Follow all local, state, and federal requirements for removal and disposal. Use soil tests to determine needed remediation.

To control emissions of particulate matter to the air during closure and treatment operations, utilize a dust palliative or other method of dust control on bare and disturbed surfaces.

Design, construction criteria, and specifications of other practices used in combination with this practice shall be integrated and compatible to conduct closure and treatment activities and achieve specified final conditions and configuration. Criteria for design of components not addressed in NRCS practice standards shall be consistent with professional engineering practices.

Initial monitoring and patrolling shall be conducted during water and/or wind erosive period(s) as needed until the site is determined to be stable. Stabilizing measures and additional treatment will be applied when and where necessary.

CONSIDERATIONS

For roads, trails, or landings deemed unsuitable as candidates for closure and treatment, consider addressing the resource concerns by upgrading the condition of the existing practices. Use Virginia NRCS Conservation Practice Standards *Access Road (Code 560)* and/or *Forest Trails and Landings*

(Code 655) to achieve conservation objectives. In these cases, install complementary practices and measures concurrently while upgrading road, trails, and/or landings.

Compacted areas will need bulk density tests at various depths to assure treatment specifications are adequate to reestablish hydrologic function and vegetation.

Use native species when establishing vegetation, especially those having multiple values, e.g., biomass, nuts, fruit, browse, nesting, and aesthetics. Avoid use of introduced or exotic species that could become nuisances.

In areas where steepness of slope and severity of cut and fill operation preclude returning sidecast to create a rooting medium, assess the road base for ripping and usage as a rooting medium. If not suitable as a rooting medium, suitable haul in topsoil/fill material may be needed. Assure that such material is free of weeds seeds and/or contaminants.

Road sites are typically nutrient poor. Consider soil amendments or organic matter, as appropriate, to accelerate the rate of revegetation.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for the specific site conditions in accordance with this standard. Describe the requirements for applying the practice to achieve its intended purpose.

Record all required information in Virginia Conservation Practice Job Sheet JS-654, an engineer field book, on a plan sheet or design computation sheet, or in another appropriate location.

DESIGN DATA

1. Completed Environmental Evaluation and subsequent requirements.
2. Soils investigation, if needed. Document pH, chemical properties such as fertility, and physical properties such as compaction.
3. Remediation plan, if needed.

4. Survey and plot data: profile, cross-sections, topography, as needed.
5. Design computations, including purpose of practice and references used. Include:
 - a. Designated level of treatment.
 - b. Show computations for surface water controls, water bars, drainage structures and outlets, as needed.
6. Plan view of site with existing and planned features, including dimensions, distances, drainage structures, erosion control measures, etc. Include a location map unless the Standard Cover Sheet is used.
7. Standard Cover Sheet (VA-SO-100).
8. Materials and quantities needed. Identify borrow material and/or spoil area, as needed.
9. Sequencing, timing, and details of closure and/or treatment activities.
10. Identification of access control, if needed.
11. Vegetation and/or ground cover requirements.
12. Identification of needed Erosion & Sediment Control measures.
13. Supplemental practices required.
14. Virginia Conservation Practice Specifications (700 Series).
15. Operation and Maintenance Plan

CHECK DATA

1. As-built survey.
2. As-built plans including dimensions, types and quantities of materials installed, and variations from design. Include justification for variations.
3. Locations of appurtenant practices.
4. Adequacy of vegetation and/or ground cover.
5. Complete as-built section of Cover Sheet, if used.

Use the practice job sheet to plan and certify this practice.

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan for the site. As a minimum, include the following items:

- Inspect the site annually and after storm events. Repair or replace damaged components as needed.
- Maintain vegetation on site.
- Control nuisance, noxious, or invasive species.
- Maintain safety measures and access control.

REFERENCES

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