

Appendix R: Land Cover Designation and Maintenance

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R.1 General Notes

The retention standard approach taken in this guidance manual for on-site stormwater management and the run-off reduction methodology recognizes the ability of pervious land covers to manage some, or most, of the rainwater that falls on it. This is termed "land abstraction" in this appendix and is assumed to be based on SCS Hydrologic Soil Group (HSG) or soil type and whether the land cover is best represented as Forest/Open Space (RvN), Managed Turf (RvC) or Impervious Cover (RvI). As noted in Section 3.7, Equation 3.2 Stormwater Retention Volume, the designation of Forest/Open Space with these lands will generate between 2-5% stormwater runoff for a design rain event. The designation of compacted cover assumes these lands will generate 15-25% stormwater runoff for a design rain event. Impervious cover will generate 95% stormwater runoff for the design rain event. The minimum area threshold for the natural cover designation is 1,500 square feet, with a minimum length of 30 feet. Areas not meeting the natural cover threshold will be considered compacted cover RvC. To ensure no loss of land abstraction, all land cover designations must be recorded in the maintenance agreement.

R.1.1 Existing Natural Cover Requirements

A site claiming natural cover based on the preservation of existing conditions must ensure conditions remain undisturbed to preserve hydrologic properties equal to or better than meadow in good condition. No credit will be given for areas that are cut and then replaced with planting. The intention of preserving areas is to allow for natural succession with saplings reaching maturity after a period of time.

Preservation areas for natural cover may include the following:

- Portions of residential yards in forest cover that will not be disturbed during construction;
- Community open space areas that will not be mowed routinely, but left in a natural vegetated state, as defined below (can include areas that will be rotary mowed no more than two times per year);
- Utility rights-of-way that will be left in a natural vegetated state (can include areas that will be rotary mowed no more than two times per year); or

- Other areas of existing forest and/or open space that will be protected during construction and that will remain undisturbed.

R.1.2 Planting Requirements for the Creation of Natural Cover

Every 1,500 square feet of created natural area shall be vegetated according to the following options of plant material quantity:

- 1 native understory tree: 1.5-inch caliper (minimum), and 2 native canopy trees: 2.5 inch caliper (minimum), or
- 6 native shrubs: 5 to 7-gallon container size (minimum), or
- 50 native perennial herbaceous or woody plants or clump-forming grasses: 1-gallon container size (minimum), or
- 1 native canopy tree: 2.5-inch caliper (minimum), and 25 native perennial herbaceous plants: 1-gallon container size (minimum), or
- 3 native shrubs: 5 to 7-gallon container size (minimum), and 25 native perennial herbaceous plants 1-gallon container size (minimum)

Plantings shall be indigenous to the immediate area and shall be arranged in a natural random pattern (e.g. not a formal composition). To ensure a resilient planting composition, diversity must be provided in the planting plan: at least 2 different species of trees, 3 different species of shrubs, and/or 5 different types of perennials/grasses shall be used in each planting.

If planting near marshes, vegetation should be elevated as much as possible to ease establishment from the saline environment and lessen the impacts of inundation from King Tide events.

Steep slopes greater than 6% grade will require additional plantings, soil stabilization, or a terracing system.

Whip and seedling stock may be used (when approved by Town of Bluffton) as a site's natural cover creation if a stream bank stabilization opportunity falls within the site's footprint. In this instance, whips or seedlings must be planted at a minimum density of 700 plants per acre, and at least 55% of these plants must remain at the end of the 2-year management period.

Natural regeneration (i.e., allowing volunteer plants to propagate from surrounding natural cover as a cover creation technique) may be allowed by Town of Bluffton, when 75% of the proposed planting area is located within 25 feet of adjoining forest, and the adjoining forest contains less than 20% cover of invasive exotic species (as documented by the South Carolina Exotic Pest Plant Council 2014 list here: https://www.se-eppc.org/southcarolina/SCEPPC_LIST2014finalOct.pdf). In this case, supplemental planting must ensure a density of 400 seedlings per acre.

All plant materials used must be native to the southeastern region and must be installed in areas suitable for their growth. There are several websites that may be consulted to select the most appropriate plantings for the Southern Lowcountry:

- Low Impact Development in Coastal South Carolina: A Planning and Design Guide; see suggested plant lists for bioretention (4.2), open channels (4.8) and stormwater wetlands (4.12) <http://www.northinlet.sc.edu/wp-content/uploads/2019/12/LID-in-Coastal-SC.pdf>

- South Carolina Wildlife Federation: <http://www.scwf.org/native-plant-list>
- South Carolina Native Plant Society: <https://scnps.org/wp-content/uploads/2012/04/CoastalNativePlantList.pdf>
- Carolina Yards Plant Database: <https://www.clemson.edu/extension/carolinayards/plant-database/index.html>
- Clemson University Cooperative Extension Services Home & Garden Information Center factsheet for freshwater shoreline landscaping: <https://hgic.clemson.edu/factsheet/shorescaping-freshwater-shorelines/>

Plant irrigation is recommended until established.

R.2 Stormwater Management Plans and Natural Cover

Sites using preservation of existing areas for the natural cover designation shall include on their Stormwater Management Plan (SWMP) their natural resources inventory, a tree and vegetation survey, identification of location, and extent of preservation areas. Depending on the extent of the preservation area, Town of Bluffton may require the SWMP to include a more detailed schedule for retained trees, noting the tree species, size, canopy, condition, and location.

The SWMP will include the identification of material and equipment staging areas and parking areas. Material and equipment staging areas and parking areas must be sufficiently offset for preservation areas to ensure no adverse impacts.

For areas maintained as meadow in good condition, the SWMP shall document either the preservation of existing conditions or the creation of meadow conditions. A plan submission claiming meadow preservation will note the existing meadow boundaries and include a field survey of the richness and diversity of existing plant species and the existing soil conditions by a qualified individual (see Section 2.1.3). A plan submission claiming meadow creation will note the proposed meadow boundaries, the planting and/or seeding species methods, and provide a soil amendment plan as specified in Appendix C Soil Compost Amendment Requirements.

R.3 Construction Requirements for Natural Cover Designation

The preservation of lands designated as natural cover—such as undisturbed portions of yards, community open space, and any other areas designated on a site’s SWMP as preserved natural cover must be shown outside the limits of disturbance on the site’s Soil Erosion and Sediment Control Plan. These areas must be clearly demarcated with signage prior to commencement of construction on the site on the site and with fencing during construction.

The creation of lands designated as natural cover as part of a public right-of-way (PROW) project and on sites where soils were not protected from compaction during construction the soils must be conditioned prior to planting with soil compost amendments as prescribed in Appendix C Soil Compost Amendment Requirements.

For maximum survivability, planting of trees, shrubs, and herbaceous vegetation for the creation of natural cover should occur only during the fall and early spring (i.e., September through November and March through May). The work should be done only under the supervision of someone qualified and skilled in landscape installation (see Section 4.14 Tree Planting and Preservation for details on qualifications). Proper maintenance of the materials after installation will be key in ensuring plants

survival. Prior to inspection, all trees and shrubs planted must be alive and in good health, and native grass and wildflower seeds must have been sown at adequate densities and at the right time of year for each species.

Once a natural cover designation has been assigned to a portion of regulated development site, that area will need to be recorded in the declaration of covenants, documented at the site prior to construction activities, protected during construction activities, and permanently protected/maintained for the life of the regulated site.

Root pruning and fertilizing are examples of preconstruction activities. These measures aim to increase the wellbeing of trees and prepare them for higher stress. Prior to beginning construction, temporary devices such as fences or sediment controls are installed and remain throughout the construction phase. Some devices, like retaining walls and root aeration systems may remain permanently. For example, if part of a root system is collapsed by a built road, permanent aeration may be necessary for the tree to remain healthy.

R.4 Maintenance Requirements for Natural Cover Designation

All areas that will be considered natural cover for stormwater purposes must have documentation that prescribes that the area will remain in a natural, vegetated state. Appropriate documentation includes subdivision covenants and restrictions; deeded operation and maintenance agreements and plans; parcels of common ownership with maintenance plans; third-party protective easements within the PROW; or other documentation approved by Town of Bluffton.

While the goal is to have natural cover areas remain undisturbed, some activities may be prescribed in the appropriate documentation, as approved by Town of Bluffton, such as forest management, control of invasive species, replanting and revegetation, passive recreation (e.g., trails), limited bush hogging to maintain desired vegetative community, etc.

R.5 Compacted Cover Designation

The compacted cover designation can apply to all site areas that are disturbed and/or graded for eventual use as managed turf or landscaping. Examples of compacted cover include lawns, portions of residential yards that are graded or disturbed and maintained as turf (including yard areas), residential utility connections, and PROW. Landscaping areas intended to be maintained as vegetation other than turf within residential, commercial, industrial, and institutional settings are also considered compacted cover if regular maintenance practices are employed.