

R-2576 Mid-Currituck Bridge

Attachment 21:

Invasive Species Control Plan

Non-Native Invasive Species Control Plan

Mid-Currituck Bridge (R-2576)

The North Carolina Turnpike Authority (NCTA) as a unit of the North Carolina Department of Transportation (NCDOT) is planning the construction of transportation improvements in Currituck and Dare Counties of North Carolina as part of the Mid-Currituck Bridge project (R-2576). The Mid-Currituck Bridge is a controlled-access toll road on new location that extends from US 158 near Coinjock/Aydlett to NC 12 near Corolla. The total length of the project is approximately 7.0 miles and includes a bridge over Maple Swamp on the Currituck County mainland and a bridge over Currituck Sound between the mainland and the Outer Banks of Currituck County. In addition, the project includes improvements to US 158 (both in Currituck and Dare Counties) and NC 12 (in Currituck County).

BACKGROUND

In February 1999, President Clinton signed Executive Order 13112 which calls on Executive Branch agencies to work to prevent and control the introduction and spread of invasive species (<https://www.federalregister.gov/documents/1999/02/08/99-3184/invasive-species>). In August 1999, the Federal Highway Administration (FHWA) issued guidance on invasive species and the roadside use of native plants ([Federal Highway Administration Guidance on Invasive Species | Roadside Use of Native Plants | Ecosystem and Vegetation System Management | Environmental Review Toolkit | FHWA \(dot.gov\)](https://www.federalregister.gov/documents/2016/12/08/2016-29519/safeguarding-the-nation-from-the-impacts-of-invasive-species)). Then in December 2016, President Barak Obama signed Executive Order 13751 which amended and continued Executive Order 13112 (<https://www.federalregister.gov/documents/2016/12/08/2016-29519/safeguarding-the-nation-from-the-impacts-of-invasive-species>).

During the project development portion of the Mid-Currituck Bridge project under the National Environmental Policy Act (NEPA), the US Environmental Protection Agency (USEPA) in a letter dated March 12, 2012 (page C-4 of the Final Environmental Impact Statement Reevaluation Report) provided the following comment on the Final Environmental Impact Statement (FEIS) regarding how prior USEPA comments on the Draft Environmental Impact Statement (DEIS) were addressed:

“Regarding the response to comment #19 dealing with the introduction of invasive plant species, the information provided is not believed to be responsive or consistent with the FHWA requirements under Executive Order 13112. EPA has previously provided additional guidance to NCDOT and FHWA concerning the use of a combination of methods to potentially control invasive plants. Foremost, the transportation agencies should minimize clearing to existing vegetated areas to the extent practicable. Contractor and NCDOT equipment arriving from off-site locations can be cleaned daily to remove foreign seed sources, one of the most common sources of invasive plants on highway projects. Disturbed areas should be re-vegetated as soon as possible with native plants. Wherever aggressive invasive plants begin to establish a colony, measures that include physical or mechanical removal, herbicide spraying and/or re-planting should be performed expeditiously. Trained and knowledgeable site personnel can monitor for invasive plants weekly or monthly and take appropriate steps as soon as invasive plants are identified. EPA acknowledges and concurs that current NCDOT BMPs [Best Management Practices] and monitoring activities are not to [too] adequate to address the issues and only becomes a potential concern identified by resource agencies

after construction of the project. A detailed monitoring and action plan needs to be developed prior to the approval of the project permits.”

As part of the FEIS Reevaluation Report (page B-18), the following response was provided relative to the USEPA comment above:

“As discussed in Section 4.3.5 of this reevaluation study report and Section 3.3.5 of the FEIS, an invasive plant species control plan will be developed during construction planning and will be included in the permit application. Preparation of an invasive species control plan during construction planning was added as Commitment 11 to the Project Commitments in Appendix C of this reevaluation study report. The invasive species control plan will be developed in accordance with Federal Highway Administration (FHWA)’s August 10, 1999 guidance on invasive species. In accordance with FHWA’s guidance, the invasive species control plan will include a discussion of any preventative measures or eradication measures for invasive species that will be taken on the project. Such measures may include the inspection and cleaning of construction equipment, commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes, and eradication strategies to be deployed should an invasion occur. The invasive plants that must be addressed and the measures to be implemented to minimize their harm will be based on the North Carolina Department of Agriculture and Consumer Services’ list of noxious weeds (i.e., plants whose presence is detrimental to crops or other desirable plants, livestock, land, or other property, or is injurious to the public health).”

As a result of the USEPA comment and response, a Project Commitment was added in the FEIS Reevaluation Report and in the Record of Decision. This Project Commitment states:

“An invasive plant species control plan will be developed during construction planning and will be included in the permit application.”

This invasive species plan for the Mid-Currituck Bridge project has been developed to satisfy this Project Commitment.

CONTROL PLAN

NCDOT will, to the maximum extent practicable, monitor the contractor’s compliance with the non-native invasive species protections included in the construction contract documents for the project. For this project, non-native invasive species are defined as listed by the North Carolina Invasive Plant Council for coastal North Carolina (<http://nc-ipc.weebly.com/coastal-plain-invasive-plants.html>).

In general, the contractor is to minimize, to the maximum extent practicable, the removal of existing vegetation from the project area. Additionally, areas of the project that have vegetation removed are to be revegetated with appropriate species as quickly as practicable and in accordance with NCDOT specifications and provisions.

The contractor will control the introduction of non-native invasive species within the project limits by adhering to the requirements of landscape materials in Section 1060 of the NCDOT Standard Specifications for Roads & Structures. These requirements limit noxious weeds for seed, mulch, planting

materials and other landscape materials in accordance with the North Carolina Department of Agriculture & Consumer Services (NCDA&CS). NCDOT will also incorporate its standard provision 'NCDOT General Seed Specification for Seed Quality', with additional restrictions on noxious weeds for seed approved by NCDA&CS for NCDOT use into the project contract. This standard provision is attached as part of this plan. NCDOT will specify only the use of weed free compost following CFR 503 regulations and obtained from sources approved by the US Composting Council (USCC) or those using USCC procedures to ensure no noxious weeds or pathogens are present. This specification is attached as part of this plan.

The contractor will be required to clean by pressure washing all construction equipment, including cranes, graders, pavers, excavators, loaders, barges, boats, etc., prior to being brought into project construction areas or immediately upon entering the project. Equipment will be cleaned thoroughly before moving from identified infested sites to ensure that seeds or other propagules are not transported to other portions of the project site. Residual material from cleaning will be collected via a wash pit and disposed of to ensure the non-native invasive species do not propagate either by removal to an approved facility or buried at sufficient depth to prohibit germination or propagation within the project limits.

Should any ground disturbed area within the project limits (all right of way and easement areas), with the exception of areas to be bridged in Maple Swamp and in Currituck Sound, be identified as containing non-native invasive species following revegetation, the contractor will be responsible for remediation that may be required to control the non-native invasive species. Any disturbed area containing an invasive species will be sufficiently electronically mapped by the contractor so as to be able to locate these areas in the future and document them for NCDOT use. These areas will be coordinated with the NCDOT Roadside Environmental Unit and the NCDOT Division 1 Environmental Officer to develop a mutually agreeable and appropriate remediation approach depending on the particular non-native invasive species.

The provisions outlined in this document will be included in the project construction documents along with additional details as appropriate. As the Mid-Currituck Bridge project continues through the project development process, some updates and revisions to the requirements outlined in this plan may be appropriate and necessary prior to issuance of the construction documents. This plan does not set a precedent for future NCDOT projects since the Mid-Currituck Bridge has unique project circumstances.

STANDARD SPECIAL PROVISION¹
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. Of Seed</u>	<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. of Seed</u>
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

¹ Source: NCDOT Roadside Environmental Unit

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet – Strain R
Weeping Lovegrass	Clover – Red/White/Crimson
Carpetgrass	

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass
Crownvetch
Pensacola Bahiagrass
Creeping Red Fescue

Japanese Millet
Reed Canary Grass
Zoysia

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem
Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

COMPOST BLANKET:²

(8-23-17)

Description

This work shall consist of furnishing, installing, maintaining, and seeding a water permeable *Compost Blanket* to reduce soil erosion and sediment by promoting the establishment of vegetation on sandy soils where vegetation is difficult to establish.

Materials

Compost:

Compost used for Compost Blankets shall be weed free and derived from a well-decomposed source of organic matter. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations, including time and temperature data indicating effective weed seed, pathogen, and insect larvae kill. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted. Test methods for the items below should follow USCC TMECC guidelines for laboratory procedures:

1. pH between 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost".
2. For seeded Compost Blankets, seed should be incorporated at the time of application in the entire depth of the compost blanket, at rates per foot, per square yard, or per acre, as acceptable to the engineer. The following particle sizes shall also be followed: 100% passing a 2" sieve; 99% passing a 1" sieve; minimum of 60% passing a ½" sieve. All other testing parameters remain the same. The seeding rates are generally similar or slightly higher than those used when considering application of seed via hydroseeding or other seeding methods.
3. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.
4. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.
5. A sample shall be submitted to the engineer for approval prior to being used and must comply with all local, state and federal regulations.

Construction Methods

1. Compost Blankets will be placed as directed. Unless otherwise specified, Compost Blankets should be installed at a minimum depth of 1".
2. The Compost Blanket shall be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seeding requirements.
3. Compost Blankets are not to be used in direct flow situations or in runoff channels.
4. The type and rate of seed, fertilizer and lime shall be in accordance with the Seeding and Mulching provisions of this contract and as directed.

² Source: NCDOT Roadside Environmental Unit

Maintenance

1. The Contractor shall perform routine inspections and maintain the Compost Blanket in a functional condition at all times.
2. Where the Compost Blanket fails, it will be routinely repaired.
3. The Compost Blanket will be seeded on site, at rates and seed types as determined by the Engineer. Once vegetation is established, final seeding is not required.

Performance

1. The Contractor is responsible for establishing a working erosion control system and may, with approval of the Engineer, work outside the minimum construction requirements as needed.
2. Where the Compost Blanket deteriorates or fails, it will be repaired or replaced with a more effective approved alternative.

Measurement and Payment

The Contractor shall provide the Engineer with proof that a minimum 1" thick Compost Blanket has been applied after settling. This rate equals approximately 270 cubic yards of compost material per acre of application area. The Contractor shall supply satisfactory evidence that the specified amount of material has been effectively placed (i.e., truck load tickets).

Compost Blanket will be measured and paid for as the actual number of acres measured along the surface of the ground over which the Compost Blanket is installed and accepted.

Payment will be made under:

Pay Item	Pay Unit
Compost Blanket	Acre