

B-4185 Mitigation Plan

Bridge No.16 on NC 171 over Hardison Mill Creek

Martin County

33532.1.1

11/20/2012

1.0 Baseline:

The North Carolina Department of Transportation (NCDOT) will perform onsite mitigation for wetland impacts associated with STIP B-4185, Bridge No. 16 on NC 171 over Hardison Mill Creek. The project is located in the southeast section of Martin County approximately 0.3 miles from SR 1542 Noah Roberson Road. Development in the area is agricultural and residential in nature. The selected alternative will replace the existing 100 foot bridge with a 150 foot long bridge approximately 15 feet due west of the existing location with two 12 foot lanes and 3 foot offsets on each side. All jurisdictional streams and wetlands in the study area of the bridge are located within USGS HUC 03010107. Permanent wetland impacts for this project are 0.51 acres of Cypress-Gum Swamp also classified by NCWAM as Riverine Swamp Forest. Additional information about this project can be found in the Categorical Exclusion dated April 18, 2012.

2.0 Site Selection:

Hardison Mill Creek has a well-developed floodplain on both the east and west sides of the project area. The wetlands in the floodplain of Hardison Mill Creek paralleling the causeway are Cypress-Gum Swamp. These wetlands consist of a mature forest dominated by water tupelo (*Nyssa aquatica*) and bald cypress (*Taxodium distichum*). The wetland areas comprise approximately 4.5 acres of the project study area and are in all four quadrants of the bridge project. The causeway fill consist of approximately 8 feet of material placed in an area that was historically wetlands.

3.0 Site Protection Instrument:

NCDOT will manage the proposed mitigation site to prohibit all use inconsistent with its use as mitigation property, including any activity that would materially alter the biological integrity or functional and educational value of the site, consistent with the mitigation plan. The site will be placed on the NES mitigation geodatabase and protected in perpetuity.

4.0 Objectives:

The goal of the project is to restore 0.29 acres of Cypress Gum Swamp. The functional restoration of the mitigation site will be accomplished through the removal of approximately 12,632 square feet (0.29 acres) of existing causeway.

5.0 Mitigation Work Plan:

The mitigation site will be constructed in conjunction with STIP B-4185. Construction activities involve pavement, causeway and bridge removal, site grading and site planting. The fill material that will be removed is approximately 8 feet in depth, approximately 22 feet in width at a maximum and approximately 457 feet paralleling the new approach and bridge. Once the pavement and causeway have been excavated, the areas will be graded to match existing adjacent reference wetland elevation as well as being ripped, and disked if necessary. Attached are the design plans of the areas that will be removed.

The Natural Environment Section shall be contacted to provide construction assistance to ensure that the mitigation site is constructed appropriately.

Following the successful completion of site grading, the mitigation site will be planted on 8 foot centers with native species typical of the reference wetland community including water tupelo (*Nyssa aquatica*) and bald cypress (*Taxodium distichum*) depending on seedling availability. Native grass seed and mulch will also be placed on any disturbed areas within the wetland restoration site for stabilization purposes according to the guidance and standard procedures of NCDOT's Roadside Environmental Unit. An as-built report will be submitted within 60 days of completion of the project

6.0 Performance Standards:

Success for vegetation monitoring within the mitigation site is based on the survival of at least 260 stems of five year old trees at year five. Hydrologic success is based on grading the restoration area to the target elevation. The target elevation is based on the adjacent reference wetland areas and will be verified during construction. Constructing the site to the adjacent wetland elevation will ensure the hydrology in the restored area is comparable to the hydrology in the reference area.

7.0 Monitoring Requirements:

Upon successful completion of construction, the vegetation monitoring is proposed for the 0.29 acre wetland restoration. This will consist of counts of planted stems within vegetation plots established within the wetland areas. No specific hydrological monitoring is proposed. These monitoring activities will be conducted annually for over a five year period and documented in an annual report distributed to the regulatory agencies.

8.0 Other Information:

N/A

9.0 Determination of Credits:

Per the NCDOT plans and 401/404 permit application for STIP B-4185; NCDOT proposes to restore 0.29 acres of riparian wetlands to mitigate for permanent impacts associated with the project at a 1:1 ratio. The success of the mitigation area and determination of final credits will be based upon successful completion of the mitigation plan and closeout of the monitoring period.

9.1 Credit Release Schedule:

NCDOT proposes immediate, full release of the proposed 0.29 acres of restored riparian wetlands at a 1:1 ratio as on-site mitigation for the riparian wetland impacts associated with B-4185.

10.0 Geographic Service Area:

The proposed Geographic Service Area (GSA) for the mitigation area is composed of the Hydrologic Cataloging Unit (HUC) (03010107). All wetland credits will be used for B-4185.

11.0 Maintenance Plan:

The site will be held by NCDOT and placed on the NES mitigation geodatabase. Once monitoring is completed and the site is closed out, it will be placed in the NCDOT Stewardship Program for long term maintenance and protection.

12.0 LONG TERM ADAPTIVE MANAGEMENT PLAN

The site will be managed by NCDOT according to the mitigation plan. In the event that unforeseen issues arise that affect the management of the site, any remediation will be addressed by NCDOT in coordination with the Interagency Review Team.

13.0 FINANCIAL ASSURANCES

The site will be managed by NCDOT with its own distinct cost center number within the NCDOT budgeting and financial tracking system. Therefore, all accounting for revenues, contract encumbrances, fund transfers, and expenses will be performed and reported independent from other capital budget or operating budget accounting.

