The Coon Creek Riparian Buffer and Nutrient Offset Mitigation Project, Granville County, North Carolina

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ABSTRACT

The Project site is located in Granville County in the Tar-Pamlico River Basin. The property was used for under row-crop cultivation, which was historically planted with tobacco. Riparian mitigation activities begin at the top-of-bank and extending out to 100 feet, and nutrient offset mitigation activities are for areas beginning at 100 feet and extending out to 200 feet. The project will result in a maximum of 8.1 Riparian Mitigation Units (RMUs) and 14.5 Nutrient Mitigation Units (NMUs) by establishing 30.19 acres of buffer easement along four unnamed tributaries to Coon Creek, including along Crews Farm Lake, an in-line impoundment. RMU and NMU asset areas will not overlap. Riparian buffer and nutrient offset restoration will provide improvement in three ecological function categories: water quality; aquatic and wildlife habitat improvement; and flood attenuation. Water quality and habitat will be improved by widening the riparian buffer and improving the complexity and diversity of the species composition by planting native plant species and by controlling invasive plants. Aquatic habitat will be improved by increased water quality and by providing additional shading and thereby lowered water temperatures. In restoring the riparian buffer, the project will help stabilize the stream and provide flood attenuation. Invasive species control is a component of the construction activities proposed within the conservation easement boundaries. Monitoring activities include field surveys to detect and limit the establishment of invasive species. Depending upon the species and the extent of the population, an appropriate control method will be used. One stream crossing will remain in the easement to allow farm equipment access between two fields. This crossing is a low-flow ford crossing, requiring no further improvement. An inspection of the site is conducted at a minimum of twice per year throughout the post-construction monitoring period or until performance standards are met. An annual monitoring and an annual site assessment will be performed. These site visits include a complete inspection of the project easement boundary, and will identify problem areas or features that require maintenance, if any. The measure of vegetative success for the site will be the survival of at least 320 planted hardwood stems per acre at the end of year five of the monitoring period. Annual monitoring data will be reported using the NCEEP monitoring report template v 1.5 adopted 8 June 2012. The monitoring report provides a project data chronology that facilitates an understanding of project status and trends, population of NCEEP databases for analysis, research purposes, and assists in decision making regarding project closeout. Upon approval for closeout by North Carolina Department of Water Resources, the site will be transferred to the State of North Carolina. The State is responsible for periodic inspection of the site to ensure that restrictions required in the conservation easement or the deed restriction document(s) are upheld. Although the site is non-tidal, the principles of the project are directly applicable for riparian buffer and nutrient offset mitigation projects in coastal environments.

KEY PROJECT GOALS AND OBJECTIVES

- Improve water quality by reducing nutrient, sediment, and chemical inputs from onsite agricultural land use
- Improve aquatic & terrestrial habitats
- Enhancement of onsite attenuation capacity to mitigate flood flow events and energy dissipation
- Improve connectivity with upstream and downstream forested buffers and facilitate wildlife movement
- Compliance with NCDWR Nutrient Sensitive Waters (NSW) classification - Fishing Creek Local Watershed Plan