

**Pig Basket Creek Wetland and Stream Mitigation Plan  
At Bridge No. 34 on SR 1004  
Nash County**

**TIP B-3876  
Federal Aid Project No. BRZ-1004(9)**

**February 20, 2007**

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for unavoidable riverine wetland and stream impacts due to replacement of Bridge No. 34 at SR 1004 over Pig Basket Creek. This mitigation site occurs within Transportation Improvement Program (TIP) B-3876. The TIP project begins approximately 800 feet south of Bridge No. 34 and continues approximately 800 to the north of the bridge.

NCDOT will restore approximately 0.52 acres of riverine wetland. The roadway project will impact 0.13 acres of unavoidable wetlands, leaving approximately 0.39 acres of wetland restoration assets on-site.

NCDOT will also perform enhancement along 90 feet of stream channel, which will offset roadway project impacts to 31 feet of stream channel.

### **EXISTING CONDITIONS**

The project is located in Nash County north of Nashville near the intersection of SR 1004 and SR1431. The project study area land use is mainly agricultural or forested floodplain of Pig Basket Creek. Pig Basket Creek within the project study area is approximately 30 feet wide and 4 feet deep, flowing from west to east.

The existing causeway approaches to Bridge No. 34 are located in the floodplain of Pig Basket Creek. The floodplain to the west of bridge consists of a several small wetland areas interspersed with upland hummocks. Canopy vegetation in the wetland areas includes sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), willow oak (*Quercus phellos*), water tupelo (*Nyssa aquatica*), river birch (*Betula nigra*) and ash (*Fraxinus* sp.).

A small unnamed tributary (UT) to Pig Basket Creek flows from south to north under SR 1431 in the southwest quadrant of the project study area. The UT runs between the existing southern approach to Bridge No. 34 and an agricultural field before entering into the wooded floodplain near its confluence with Pig Basket Creek.

The Natural Systems Technical Memorandum for TIP B-3876, dated June 2001, provides further details concerning existing roadway and project study area conditions.

## **PROPOSED CONDITIONS DESIGN**

The proposed wetland mitigation will consist of restoring 0.52 acres of riverine wetland, including 0.22 acres at Site 4 and 0.30 acres at Site 5. Restoration will involve removing causeway fill from the existing approaches to Bridge No. 34 to match the adjacent wetland elevation. Representative spot elevations will be taken in both quadrants on the west side of the bridge project within the adjacent reference wetland to determine target elevations. Excavated areas will be ripped and disked prior to planting of the site if necessary.

The proposed stream mitigation will consist of enhancing 90 feet of stream channel at Site 3 on the UT to Pig Basket Creek by removing existing causeway fill as described above along its right bank and restricting agricultural activities along its left bank.

The Natural Environment Unit shall be contacted to provide construction oversight to ensure that the mitigation area is constructed appropriately.

## **VEGETATION PLANTING**

Sites 3, 4 and 5 will be planted following the successful completion of the site grading. The site will be planted with bottomland hardwood species including at least three of the following: water oak (*Quercus nigra*), tulip poplar (*Liriodendron tulipifera*), green ash (*Fraxinus pennsylvanica*), willow oak (*Quercus phellos*), sycamore (*Platanis occidentalis*), water tupelo (*Nyssa aquatica*), swamp chestnut oak (*Quercus michauxii*). Additionally, the banks of the UT to Pig Basket Creek at Site 3 will be planted on three feet centers with live stakes.

## **MONITORING:**

Upon successful completion of construction, the following monitoring strategy is proposed for the mitigation site. NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.

## **HYDROLOGIC MONITORING**

No specific hydrological monitoring is proposed for this mitigation site. The target elevation will be based on the adjacent wetland and verified during construction. Constructing the site at the adjacent wetland elevation will ensure the hydrology in the restored area is similar to the hydrology in the reference area.

## **VEGETATION SUCCESS CRITERIA**

NCDOT shall monitor the mitigation site by visual observation and photo points for survival and aerial cover of vegetation. NCDOT shall monitor the site for a minimum of three years or until the site is deemed successful. Monitoring will be initiated upon completion of the site planting.