

AVOIDANCE AND MINIMIZATION MEASURES

Copperhead Road Extension from US 561 (Knightsville Highway) to SR
1308 (Big Creek Road)

Onslow County

STIP Project E-1225

North Carolina Department of Transportation
Division 3



MERGER CONCURRENCE POINT 4A

JUNE 9, 2021

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1. Introduction

Lead federal agency: US Army Corps of Engineers

Primary points of contact for the subject project are:

Agency	Name
Federal Highway Administration (FHWA)	Sharon King
U.S. Army Corps of Engineers (USACE)	Henry Osborne
North Carolina Department of Water Resources (NCDWR)	Jenna Faust
North Carolina Department of Transportation	Jo Merger
HNTB	Jane Merger

The purpose of this meeting is to reach concurrence on the avoidance and minimization measures (AMM) that have been developed over the course of the project and note the potential impacts of the project on the surrounding environment.

1.1 Project Description

The North Carolina Department of Transportation (NCDOT) proposes to extend Copperhead Road from US 561 (Knightsville Highway) to Big Creek Road north of Capeside, in Onslow County. The project includes a potential new location crossing of the Newer River. The project is approximately 5.3 miles long and is identified in the State Transportation Improvement Program (STIP) as Project No. E-1225, WBS No. 86753.0.9, Federal Aid No. STP-2211(1). The project location is shown in Figure 1.

1.2 Project History and Merger Plan

The project is in the 2021-2029 NCDOT State Transportation Improvement Program (STIP) and would be funded by State Highway Trust Funds. The environmental document for this project is a combined State Environmental Analysis / Finding of No Significant Impact (SEA/FONSI). The Biological Assessment was completed in May 2021. Right of way is anticipated for October 2024 and Let is anticipated for June 2026. The current STIP cost estimate is presented in Table 1. The proposed project schedule is included in Table 2 and is based on the [Merger Plan](#). The schedule and cost estimates are draft and subject to change.

Table 1. 2021-2029 STIP E-1225 Cost Estimate

Phase	Cost Estimate
Right of Way	\$2,107,000
Utilities	\$500,000
Construction	\$37,576,000
Total*	\$41,183,000
*includes \$1,000,000 in prior years costs. Note: cost estimates are subject to change.	

Table 2. STIP E-1225 Draft Project Schedule

Milestone	Format	Schedule*
Concurrence Point 4A	Virtual Meeting	April 2021
Categorical Exclusion	Electronic Distribution	July 2022
Begin ROW Acquisition		August 2024
Begin Construction		September 2024
*tentative, subject to change		

1.3 Past Merger Meeting Summary

CP1: The Merger Meeting for CP1 was held on October 19, 2019. During the meeting, the Purpose and Need for the project was created and the Project Study Area was defined. Visit the ATLAS Workbench website to view the signed CP1 Merger Team Meeting Agreement form.

CP2: The Merger Meeting for CP2 was held on April 10, 2020. The purpose of the meeting was to discuss alternatives for project development and determine which should be carried forward for detailed study. Portions of each alternative include sections of new location roadway, realigned intersections, and improvements to existing roads. As a result of this meeting the following alternatives have been carried forward: No Build, Build Alternative 1A (Southern Alignment), Build Alternative 1B (Middle Alignment), and Build Alternative 2 (Northern Alignment).

CP2A: The Merger Meeting for CP2A was held on October 19, 2020. The purpose of the meeting was to discuss and achieve concurrence on major hydraulic crossings and the proposed project alignment. As a result of the meeting 6 major hydraulic crossing structures were agreed upon and a preferred project alignment was chosen: Build Alternative 1B (Middle Alignment).

CP 3: The Merger Meeting for CP 3 was held on February 12, 2023. The purpose of the meeting was to reach concurrence on the revised study area and the Least Environmentally Damaging Practicable Alternative (LEDPA) as the preferred alternative. As a result of the meeting, the revised study area was adopted and Build Alternative 1B (Middle Alignment) was carried forward as the preferred alternative.

1.4 Purpose and Need

The Purpose of the project is to improve the transportation network in the project study area to benefit mobility and connectivity. The Need to be addressed by the proposed project is the lack of network connectivity between Big Creek Road and US 561 in the project area degrades network mobility, quantity of travel, and quality of travel.

2. Avoidance and Minimization Measures

Avoidance and minimization measures (AMMs) have been undertaken throughout development of the E-1225 project. All avoidance and minimization measures for all resources are documented using the Avoidance and Minimization Measures Tracker on the E-1225 project's Connect SharePoint site.

2.1 Summary of Impacts

Potential impacts to resources for Build Alternative 1B are provided in Table 3, below.

Table 3. Summary of Preferred Alternative Impacts

Resource	Alternative 1B (Middle Alignment)
Schools	2 (Our Lady Immaculate Girls School and Delta Elementary)
Existing and Proposed Greenway Crossings	1 (Cow Horn-Newer River Paddle Trail)
Places of Worship	1 (Iglesias Hispania Macedonia)
Major Utility Crossings	0
100-year Floodplain and Floodway Crossings	1 (Newer River)
Stream Impacts* (Linear Feet)	1,522**
Stream Crossings (Number)	8
Wetland Impacts* (Acres)	8.3***
Wetland Crossings (Number)	4
Stream Mitigation Sites	0
Prime Farmlands / Farmlands of Statewide Importance (Acres)	83.8 / 20.7
Estimated Residential Structures Impacted	58
Estimated Business Structures Impacted	9
Noise Impacts	TBD
Hazardous Materials Sites	1
Potential Low Income Population Impacts	Yes
Potential Minority Population Impacts	Yes
Conservation Easements	0
Recreational Areas/Parks (no.)	1 (Cow Horn-Newer River Paddle Trail)
Historic Properties (no.)	1 (Swift-Walker House) avoids direct impacts

*Impacts calculated based on slope stake limits plus an additional 40 feet.

*Stream impacts reported to the nearest 10 feet

** Wetland impacts reported to the nearest 0.1 acre

L= Listed on NRHP

2.2 Avoidance and Minimization Measures Documentation

Planning Phase and Merger Screening and Concurrence Point 1:

- Environmental resources, including stream restoration sites, conservation easements, and parks were considered as CP 1 was developed and were disclosed to the Merger Team.
- The study area was minimized to the extent practicable to avoid or minimize impacts to Boykin Elementary, Delta Elementary, and Our Lady Immaculate Girls School.

Concurrence Point 2:

- As most of the natural systems resources were impacted by the new crossing of the Newer River, multiple alternatives were explored:
 1. Alternative 1A (Southern Alignment): Realign Copperhead Road to a new intersection with US 561 and continue on new alignment, including a new location crossing of the Newer River to form the fourth leg of the existing Ramsey Road and Big Creek Road intersection.
 2. Alternative 1B (Middle Alignment): Realign Copperhead Road to intersect Briarneck Road, including approximately 1.0 mile of roadway on new location. Improve existing roadways (12-ft travel lanes, 8-ft shoulders with 4 feet paved, 30-ft clear zone). Purchase of right of way for a future multi-lane roadway.
 3. Alternative 2 (Northern Alignment): Realign Copperhead Road to intersect Cedar Valley Road, including approximately 1.0 mile of roadway on new location. Widen Cedar Valley Road bridge over the Newer River to accommodate 12-ft travel lanes and 8-ft shoulders. Roadway improvements along existing alignments (12-ft travel lanes, 8-ft shoulders with 4 feet paved, 30-ft clear zone). Purchase of right of way for a future multi-lane roadway.
- The conservation easement on existing Howard Road extending from the Newer River was chosen to be avoided entirely. The proposed new location alternatives were also chosen to minimize impacts to housing developments and area businesses.

Concurrence Point 2A:

- Bridges will be used for any crossing of the Newer River, to minimize stream and wetland impacts as well as to allow passage of the Cow Horn-Newer River Paddle Trail along the Newer River.
- NCDOT agreed to include bridges at Site 2 for Alternative 1A, Site 2 for Alternative 1B, and Site 4 for Alternative 2. NCDOT agreed to include culverts at Site 1 for Alternative 1A and Sites 5 and 6 for Alternative 2.
- The total stream impacts for Alternatives 1A, 1B, and 2 were reduced based on bridging decisions concurred upon at CP2A.
- Subsequent to the CP2A meeting, design modifications were made to minimize impacts to a parallel stream impact for Crossing 2, based on discussions with the Merger Team.

Concurrence Point 3:

At the CP 3 meeting, the following AMMs were part of the LEDPA decision. Based on NCDOT's evaluation, Alternative 1B has the following:

- Provides Operational alignment advantages (better horizontal alignment)
- Avoids stream mitigation site easement
- Avoids conservation easement
- Fewest stream and wetland impacts
- Fewer farmland impacts
- Requires fewest residential property impacts
- Fewest historic architecture impacts
- Faster travel time

Concurrence Point 4A

- Shifted preferred alternative alignment slightly north to minimize wetland impacts near the proposed crossing of the Newer River.

3. Merger Plan Review/Next Steps

Based on the proposed Merger Plan for the project, NCDOT proposes the next Merger Meeting will be CP 4B (Hydraulic Design Review). It is anticipated that the CP 4B meeting will be held in three months; Merger Team members will be notified of any changes that require a revision of this timetable.

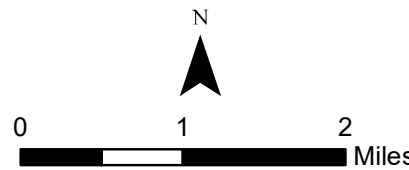
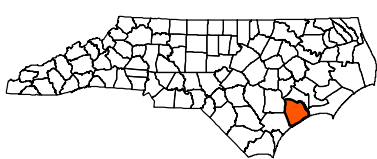
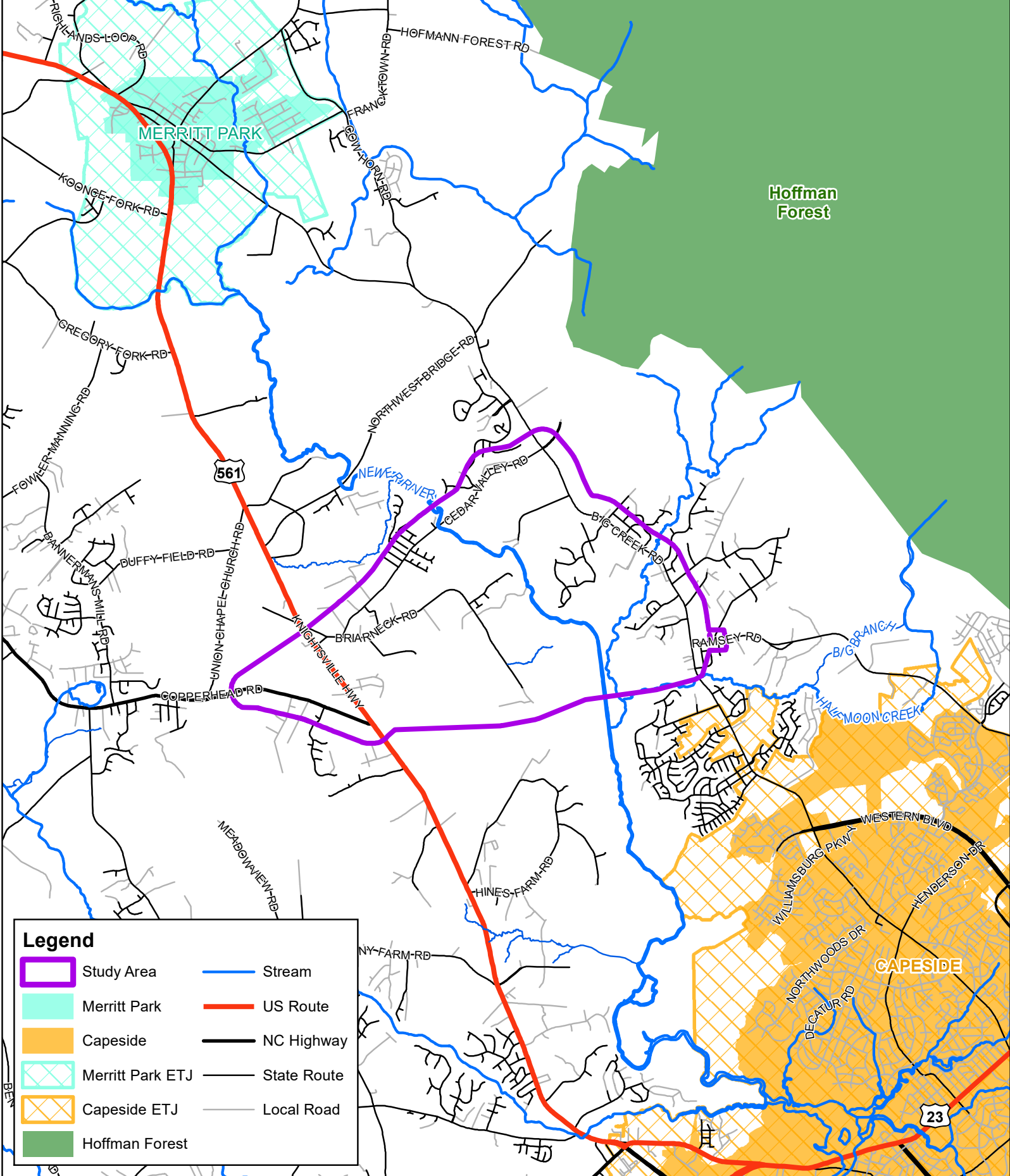
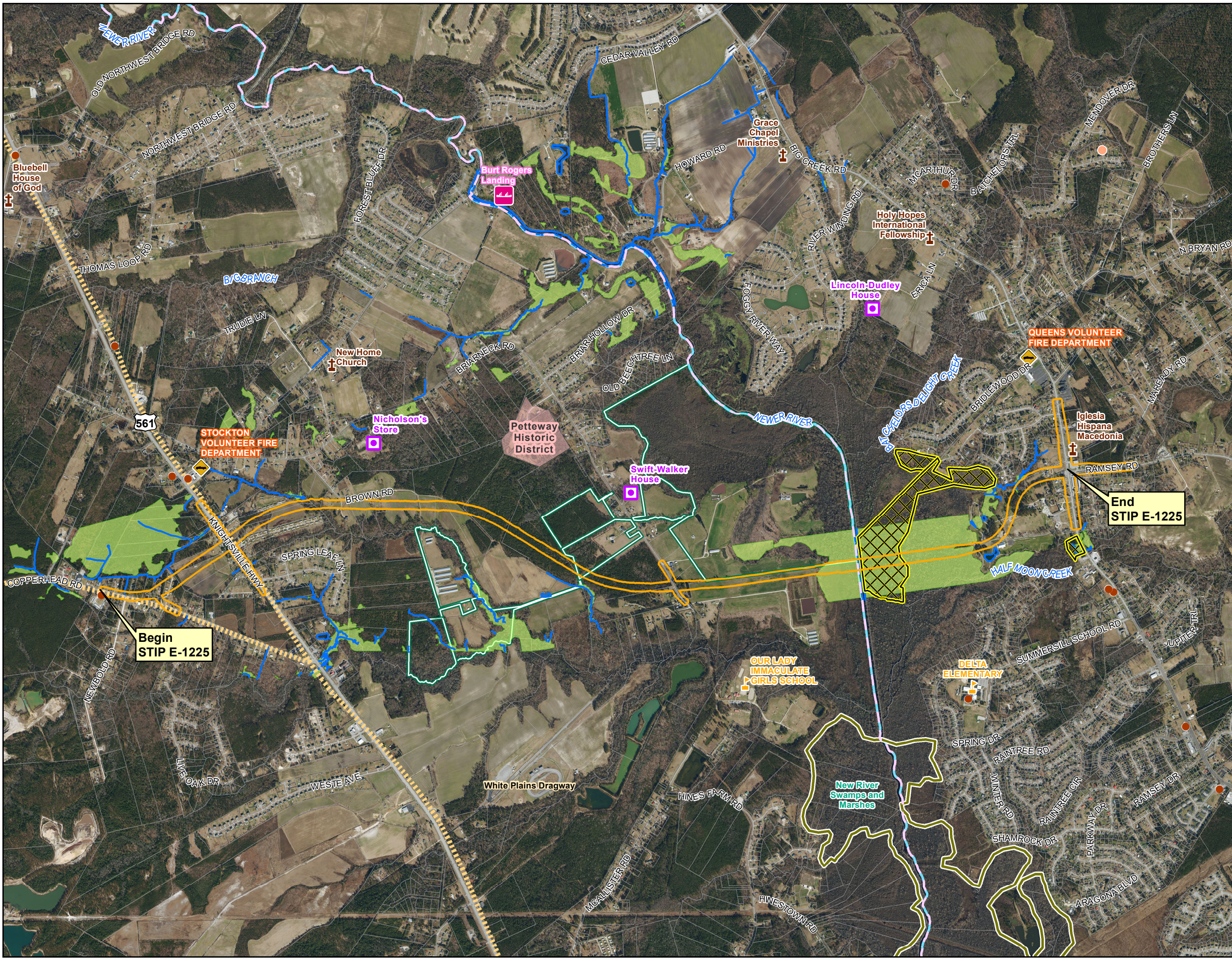


Figure 1: Vicinity Map
STIP Project E-1225
 Copperhead Road Extension from US 561
 (Knightsville Hwy) to Big Creek Road
 Onslow County

Figure 2. Environmental Features Map: Alternative 1B

**Copperhead Road Extension from US 561 (Knightsville Hwy) to Big Creek Road
STIP Project E-1225
Onslow County**



Legend

- Alternative 1B
- Regional UST
- Hazardous Waste Site
- ⚡ Firestation
- ✙ Places of Worship
- 🏫 School
- 🚒 Fire Station
- Historic Site
- NRHP Historic District
- Natural Heritage Natural Area
- Voluntary Agriculture District
- FEMA Buyout Parcel
- Parcel
- New River
- Jurisdictional Stream
- Jurisdictional Wetland
- Cow Horn-New River Paddle Trail
- Paddle Trail Landing
- NCDOT Hurricane Evacuation Route

Sources: NCDOT, Onslow Co. GIS, NC OneMap, NCFMP, NC NHP, HPOweb. Credit: HNTB North Carolina, PC, 2018.

