

Carthage Street Improvements

STIP No. U-5709

WBS No. 50159.1.1

Widening of SR 1237 (Carthage Street)
From SR 1152 (Fire Tower Road) to NC 42 (Wicker Street)
City of Sanford, Lee County, NC

ADMINISTRATIVE ACTION

STATE ENVIRONMENTAL ASSESSMENT/
FINDING OF NO SIGNIFICANT IMPACT


North Carolina Department of Transportation
Division of Highways

Submitted pursuant to the North Carolina State Environmental Policy Act



APPROVED:

10/16/2018

DocuSigned by:

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Date

Brandon H. Jones, P.E., Division Engineer
Highway Division 8, North Carolina Department of Transportation

PROJECT COMMITMENTS

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The following special commitments have been agreed to by NCDOT:

NCDOT Division 8

- Division 8 will ensure that any trees removed from the Buffalo Rural Historic District during project construction will be replaced with compatible landscaping. Division 8 will also ensure that the sidewalk on the west side of Carthage Street in the vicinity of the historic district remains shortened and that a 5-foot wide sidewalk is constructed in lieu of 10-foot wide multi-use path along the northern perimeter of the Fire Tower Road roundabout to minimize impacts, as shown on April 2018 preliminary plans.
- Upon completion of final design plans, Division 8 will verify the right-of-way limits in relation to the Buffalo Rural Historic District. If final impacts are greater than have been anticipated, Division 8 will coordinate with the NC State Historic Preservation Office regarding Section 106 effects.
- Assessments will be conducted at sites with identified underground storage tanks (USTs) for soil and groundwater contamination prior to construction and relocation of any USTs or fuel pumps.
- At the time this document was prepared, the Land and Water Conservation Fund conversion process for the affected land in the Kiwanis Children's Park was not yet complete. Division 8 is actively and cooperatively working with the City of Sanford and Lee County to complete the land conversion process and has committed to completing the conversion process prior to beginning construction of the project.

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SUMMARY

1. TYPE OF ACTION

This is a State Environmental Assessment/Finding of No Significant Impact (SEA/FONSI).

2. PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT) proposes improvements to Carthage Street (SR 1237) between Fire Tower Road (SR 1152) and Wicker Street (US 1 Business/NC 42) in the City of Sanford. The proposed improvements include constructing a raised median and incorporating bike lanes in each direction, a sidewalk on the west side of Carthage Street, and roundabouts at Fire Tower Road, Fields Drive, and Wicker Street. On the east side of Carthage Street, there would be a sidewalk from Fire Tower Road to Fields Drive and a multi-use greenway path from Fields Drive to Wicker Drive. This project is designated as U-5709 in NCDOT's 2018-2027 State Transportation Improvement Program (STIP).

3. PROJECT BENEFITS

The project is expected to have an overall positive effect. It will add bike lanes, a multi-use path, a sidewalk, and a median to Carthage Street, substantially improving pedestrian and bicycle mobility in the project area. By including these bike and pedestrian improvements and by incorporating roundabouts at major intersections along the project corridor, the project has the potential to improve multimodal safety in the project area.

4. SUMMARY OF ENVIRONMENTAL EFFECTS

The project would require relocation of three businesses. The project would result in a small right-of-way impact on Kiwanis Children's Park, including loss of one park shelter. The project would also alter access points and result in loss of parking spaces from some of the commercial properties along the project corridor. The project's Recommended Alternative would avoid adverse effects on historic resources. No archaeological resources would be directly affected. No effects on federally protected plant or animal species are expected. There would be about 0.03 acres of wetland impacts and 318 linear feet of stream impacts as a result of the proposed improvements. The project would not have an adverse effect on air quality. Due to the nature of the proposed improvements, the project did not require a traffic noise analysis. Because the project would add bike lanes on both sides of Carthage Street, a multi-use path that would connect to an existing greenway trail, and a sidewalk on the west of Carthage Street, the project would substantially improve pedestrian and bicycle mobility in the project area and would support local plans.

5. ANTICIPATED PERMITS

Any impacts to areas under the jurisdiction of Section 404 of the Clean Water Act would likely be authorized under nationwide permitting. A Nationwide Permit (NWP) No. 14 will likely be applicable. A NWP No. 33 may apply for temporary construction activities such as stream

dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The US Army Corps of Engineers holds the final discretion as to which permit will be required to authorize project construction. If a Section 404 permit is required, then a Section 401 Water Quality Certification (WQC) from the NC Department of Environmental Quality, Division of Water Resources, will be needed.

6. COORDINATION

The following federal, state and local agencies were consulted during development of this project:

US Army Corps of Engineers

US Fish and Wildlife Service

NC Department of Environmental Quality, Division of Water Resources

NC Department of Cultural Resources, State Historic Preservation Office

City of Sanford

Lee County

1. DESCRIPTION OF PROPOSED ACTION

1.1 General Description

The North Carolina Department of Transportation (NCDOT) proposes improvements to Carthage Street (SR 1237) between Fire Tower Road (SR 1152) and Wicker Street (US 1 Business/NC 42) in the City of Sanford. This project is designated as U-5709 in NCDOT's 2018-2027 State Transportation Improvement Program (STIP).

Carthage Street is a north-south roadway extending between downtown Sanford and US 501 south of Sanford, and it is viewed by the local government as a gateway facility to downtown Sanford. It is currently a two-lane facility, with a center turn lane beginning near Fields Drive and extending northward. Carthage Street is classified as a minor arterial and has a posted speed limit of 45 mph from the southern end of the project to Dennis Drive. North of Dennis Drive, it has a posted speed limit of 35 mph. The landscape along Carthage Street becomes more rural as it extends southward from downtown Sanford. Central Carolina Hospital, located at the corner of Carthage Street and Fields Drive, and nearby medical and dental clinics, are a defining feature of this section of Carthage Street. The project location and the study area boundary are shown in Figure 1.

The proposed project would improve Carthage Street within the project limits so that mobility can be enhanced for both motorized vehicles and non-motorized users such as bicyclists and pedestrians. These improvements would align with an approach known as "Complete Streets," which became official NCDOT policy in 2009. Under the Complete Streets approach, a range of transportation modes are considered and incorporated into improvement projects, with features such as enhanced sidewalks, bike lanes, median islands, and roundabouts. Local officials with the City of Sanford have established a vision for the Carthage Street improvements that would incorporate bike lanes in each direction, a multi-use greenway path on the east side of Carthage Street, and a sidewalk on the west side. The local vision for the improvements would also include roundabouts at major intersections along Carthage Street; depending on their design characteristics, roundabouts have the potential to help improve multimodal safety and enhance the efficient flow of traffic through intersections. Crosswalks with median refuge may also be considered along Carthage Street, between intersections, to enhance pedestrian safety.

1.2 COST ESTIMATES

Estimates of the costs of right-of-way acquisition, utility relocation, and construction for the three build alternatives under consideration for the project were provided by NCDOT. The cost estimates are summarized in **Table 1**.

Table 1. Cost Estimates for Carthage Street Improvements

Cost Category	NCDOT 2018-2027 STIP (August 2017)	Current Cost Estimate*		
		Alternative 1	Alternative 2	Alternative 3
Right-of-Way	\$2,674,000	\$3,341,000	\$3,223,000	\$3,303,000
Utility Relocation	\$321,000	\$809,050	\$684,490	\$684,490
Construction	\$9,118,000	\$6,800,000	\$6,800,000	\$6,800,000
Total Cost	\$12,113,000	\$10,950,050	\$10,707,490	\$10,787,490

*Construction and utility relocation cost estimates were prepared in October 2017; right-of-way cost estimates were prepared in June 2018.

1.3 OTHER STIP PROJECTS IN AREA

Other transportation projects in and around the vicinity of the proposed projects that are included in the NCDOT 2018-2027 STIP are as follows:

U-5722 – Complete Street improvements to US 421 Business/NC 87, from US 1 to north of SR 1514 (Bragg Street); ROW acquisition is scheduled to begin in fiscal year 2021, and construction is scheduled to begin in 2023.

U-5727 – Convert at-grade intersection on US 1/US 15/US 501 to grade separation and relocate NC 78 to tie into interchange; ROW acquisition is scheduled to begin in fiscal year 2018, and construction is scheduled to begin in 2020.

U-6070 – Widen NC 78 from US 1 to SR 1001 (Lemon Springs Road); ROW acquisition is scheduled to begin in fiscal year 2025, and construction is scheduled to begin in 2027.

2. PROJECT PURPOSE AND NEED

2.1 NEED FOR THE PROJECT

The need for the project arises from concerns about multimodal mobility and safety along Carthage Street. Factors influencing this need include existing conflicts between transportation modes and relatively high existing vehicular accident rates along Carthage Street.

2.1.1 Policies and Planning

The proposed project has been a part of the Highway Element of the *Lee County Comprehensive Transportation Plan* since its adoption in 2007. Through coordination between Lee County and the City of Sanford in 2013, the project was one of six transportation projects prioritized locally and submitted to the Triangle Area Rural Planning Organization (TARPO) for regional prioritization and submittal to NCDOT. The Carthage Street project was included in the NCDOT Prioritization 3.0 process; the majority of the project’s prioritization score was attributable to safety needs. Following this process, the project was added to the STIP.

The multi-use path proposed as a component of the improvements would become part of the Little Buffalo Creek Greenway Trail, which was identified as a planned greenway facility in the City of Sanford's 2010 *Comprehensive Pedestrian Plan*. This plan also identified Carthage Street as an area with heavy pedestrian traffic and indicated a need for sidewalks and pedestrian crossings along Carthage Street. In conversations with NCDOT, local officials have explained that there is a notable amount of pedestrian traffic along this section of Carthage Street due to the presence of Central Carolina Hospital and the numerous medical offices surrounding it. Local officials have indicated that there is a need to enhance mobility for non-motorized users while also ensuring efficient traffic flow in this area.

2.1.2 Safety

NCDOT analyzed data on the accidents that have occurred along the segment of Carthage Street in the project area between April 2011 and March 2016. During this time period there were 54 accidents recorded along this segment of Carthage Street. This equates to an overall crash rate of about 387 per 100 million vehicle miles (MVM) traveled. This is about 28 percent higher than North Carolina's statewide rate on similar 2-lane urban secondary roadways (301 per 100 MVM). The crash rate on Carthage Street also exceeds NCDOT's critical crash rate for similar 2-lane urban secondary roadways (382 per 100 MVM), indicating that Carthage Street's accident rate is high enough to suggest that safety improvements may be needed.

The most common types of accidents along Carthage Street are angle collisions and rear end collisions, which each account for about one third of the total number of crashes. Another 15 percent of the accidents were left or right turn collisions. These types of crashes typically occur when a driver fails to respond to the constantly changing traffic conditions characteristic along a corridor like Carthage Street, with traffic entering and exiting at several intersections and driveways, and pedestrians crossing the roadway without dedicated crosswalks and sidewalks. It is also important to note that four of the crashes that occurred during the study period on Carthage Street involved vehicles striking pedestrians.

More detailed information about the accidents that occurred on Carthage Street between April 2011 and March 2016 is available in this project's *Traffic Technical Memorandum* (Lochner, 2017b.)

2.2 PURPOSE OF THE PROPOSED ACTION

The purpose of the proposed action is to enhance mobility for pedestrian, bicycle, and vehicular traffic and improve safety on Carthage Street using a Complete Streets approach.

3. ALTERNATIVES

3.1 NO-BUILD ALTERNATIVE

The No-Build Alternative would not complete any improvements to Carthage Street and would not enhance multimodal mobility or improve safety on Carthage Street. It would therefore not meet the

purpose of the project, and it would also conflict with the local vision for Carthage Street. However, the No-Build Alternative is retained as a benchmark against which the impacts of the build alternatives can be compared.

3.2 BUILD ALTERNATIVES

Three Build Alternatives for the project were developed. Each of the Build Alternatives would widen Carthage Street from Fire Tower Road to Wicker Street from its existing configuration to a 2-lane curb and gutter facility with a 17-foot 6-inch raised median, 5-foot bike lanes in each direction, and roundabouts at the Fire Tower Road, Fields Drive, and Wicker Street intersections. From Fields Drive to Wicker Street, there would be a 10-foot multi-use greenway path on the east side of Carthage Street and a 5-foot sidewalk on the west side. At each of the roundabouts, the 5-foot bike lane would taper off and the 5-foot sidewalk on the west side of Carthage Street would widen to a 10-foot multi-use path, allowing bike traffic to move onto the multi-use paths in the vicinity of the roundabout. As noted below, Alternative 3 incorporates some modifications to the proposed typical section.

Alternative 1 would involve a symmetrical widening of Carthage Street along the length of the project. **Alternative 2** is a best fit alignment incorporating asymmetrical widening to minimize impacts to parking lots at businesses along Carthage Street between Fire Tower Road and Fields Drive. **Alternative 3** is a modification of Alternative 2, developed to avoid adverse effects on the Buffalo Rural Historic District (see Section 4.2.1). Alternative 3 is similar to Alternative 2, but would shift the alignment in the area near Dennis Drive, reduce the width of the berm in this area by eliminating the proposed sidewalk on the west side of Carthage Street from just north of Dennis Drive to just north of the proposed roundabout at Fire Tower Road, and incorporate a 5-foot sidewalk, rather than 10-foot multi-use path around the western side of that roundabout.

3.3 TRAFFIC FORECAST AND CAPACITY ANALYSIS

NCDOT provided a traffic forecast for the project area in October 2016. The traffic forecast data were used to complete a planning-level analysis to identify and document existing and projected traffic operations in the project area. The results of this analysis are documented in detail in the *Traffic Technical Memorandum* (Lochner, 2017b) and summarized below.

The traffic capacity analysis showed that all of the four unsignalized and two signalized intersections along Carthage Street within the project limits currently operate at level of service (LOS) C or better and are projected to operate at acceptable LOS D or better in the 2040 design year under the no-build scenario. Arterial analysis showed that Carthage Street currently operates at LOS B in the a.m. peak hour and LOS C in the p.m. peak hour and that the facility is projected to continue operating at these levels of service in the 2040 design year. The traffic analysis also included a flow scale analysis to determine whether a roundabout design at Fire Tower Road, Fields Drive, and Wicker Street would operate adequately in the 2040 design year. This analysis confirmed that roundabouts at those three locations would operate adequately in 2040.

3.4 HYDRAULICS

A preliminary hydraulics analysis was completed for the project in December 2016. This analysis noted that the proposed improvements may impact a major stream crossing of Skunk Creek, where there is an existing bridge, originally built in 1922. The analysis also recommended that, as a part of the project improvements, the existing structure be removed and replaced with a single 13'x11' reinforced box culvert. More detailed information about the preliminary hydraulics analysis is available in the project's *Preliminary Hydraulics Technical Report* (Ecological Engineering, 2016.)

3.5 UTILITIES

Construction of the proposed project will require modification to existing public utilities. The known utilities in the project area are described below. Detailed information on specific utilities will be identified by the NCDOT Location and Surveys group prior to final design and construction.

Several utility companies and public agencies own facilities in the vicinity of this project. Duke Energy provides electric power distribution using aerial and underground infrastructure. PSNC Energy provides gas distribution infrastructure. The City of Sanford has water and sanitary sewer distribution lines in the project area. Several companies, including Windstream, Spectrum, Conterra Ultra Broadband, and MCNC provide telecommunications services using aerial and underground cables. NCDOT also has fiber optic lines in the vicinity of the project.

3.6 RECOMMENDED ALTERNATIVE

In most impact categories considered, there little to no difference between the three build alternatives. The notable exception is the potential effect each alternative would have on the Buffalo Rural Historic District, which is eligible for National Register of Historic Places (NRHP). Because it is the only alternative that would avoid an adverse effect on this historic resource, while also meeting the purpose of the project, **Alternative 3** is the Recommended Alternative for the Carthage Street improvements. **Figure 2** shows the proposed design for Alternative 3.

4. ANTICIPATED ENVIRONMENTAL EFFECTS

In this section, the existing economic, social, physical, and natural environments within the project study area are described and assessed for potential impacts from the project. In some instances, the information presented in this section is a summary of information that was previously analyzed in more detailed technical reports. In those instances, the respective technical reports are noted by reference. Copies of these technical reports are available by contacting NCDOT. **Figure 3** shows the locations of notable environmental constraints in the project area.

4.1 NATURAL RESOURCES

Natural resources located in the project area and the project's potential effects on those resources are described below. More detailed information on the project area's natural resources can be found

in the *Natural Resources Technical Report* (NRTR) prepared for the project (Three Oaks Engineering, 2017).

4.1.1 Water Resources

Water resources in the study area are part of the Cape Fear River basin [United States Geological Survey (USGS) Hydrologic Unit 03030003]. Five streams classified as jurisdictional “Waters of the United States” under the Clean Water Act were identified in the study area. The physical characteristics of each of these streams, along with the potential impact of each alternative, are displayed in **Table 2**. One of the streams, identified in the NRTR as stream SD, has segments with two different classifications—one segment is classified as intermittent and the other is classified as perennial. These are noted as stream SD-I (intermittent) and SD-P (perennial).

Two jurisdictional wetlands were identified in the project area. The wetland classifications and quality rating data for each of these, along with the potential impact of each alternative, are displayed in **Table 3**.

Table 2. Stream Segments in the Project Area – Anticipated Impacts*

NRTR Stream Name	Classification	Alternative 1 (linear feet)	Alternative 2 (linear feet)	Alternative 3 (linear feet)
Skunk Creek	Perennial	115	111	111
SA	Perennial	146	146	146
SB	Perennial	--	--	--
SC	Perennial	60	60	61
SD-I	Intermittent	--	--	--
SD-P	Perennial	--	--	--
TOTAL		322	317	318

*Impacts calculated within 25 feet of the slope stake limit on each side of the proposed right-of-way.

Table 3. Jurisdictional Characteristics of and Anticipated Impacts to Wetlands in the Project Area*

NRTR Wetland ID	NCWAM^ Classification	Hydrologic Classification	NCDWR Wetland Rating	Community Type	Alternative 1 (acres)	Alternative 2 (acres)	Alternative 3 (acres)
WA	Headwater Forest	Riparian	23	Maintained/ disturbed	0.01	0.01	0.01
WB	Headwater Forest	Riparian	70	Piedmont alluvial forest	0.02	0.02	0.02
TOTAL					0.03	0.03	0.03

*Impacts calculated within 25 feet of the slope stake limit on each side of the proposed right-of-way.

^North Carolina Wetland Assessment Method

There are no ponds located within the project area. There are no designated anadromous fish waters, Primary Nursery Areas (PNA) in the study area, and there are no designated High Quality

Waters (HQW) or water supply watersheds (WS-I or WS-II) within a one-mile vicinity of the study area. There is a stream listed on the North Carolina 2014 Final 303(d) list of impaired waters within one mile downstream of the study area but not for excessive sedimentation and turbidity. There are no NC Stream Fish Community Assessment Program monitoring stations, benthic monitoring stations, or sites monitored by the NC Division of Water Resources (NCDWR) Ambient Monitoring System located within one mile of the study area.

The project is located within the Cape Fear River basin. It is not within an area where buffer rules will apply.

4.1.1.1 Avoidance and Minimization

In developing the functional designs used in the environmental design, NCDOT sought to avoid and minimize impacts to streams and wetlands to the greatest extent possible. NCDOT will continue to seek to minimize jurisdictional impact in developing the final designs for the project. The recommended alternative, Alternative 3, would have a slightly smaller total impact on jurisdictional streams than Alternative 1 and about the same impact as Alternative 2.

4.1.1.2 Compensatory Mitigation

The NCDOT will investigate potential on-site stream mitigation opportunities once the preferred alternative for the project is finalized. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environmental Quality's Division of Mitigation Services (DMS).

4.1.2 Biotic Resources

Biotic resources include terrestrial and aquatic communities. There were five terrestrial communities identified in the study area: maintained/disturbed, pine forest, dry-mesic oak-hickory forest, mesic mixed hardwood forest, and piedmont alluvial forest. About 81 percent of 123 acres in the project study area is classified as maintained/disturbed, and about 15 percent is classified as mesic mixed hardwood forest.

Aquatic communities in the study area include Skunk Creek and its tributaries, as well as a tributary of Persimmon Creek. Perennial streams of comparable size in this portion of the North Carolina Piedmont support several fish species as well as freshwater mollusks and amphibians.

Nine species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area: bamboo (moderate threat), Bradford pear (watch list), Chinaberry (watch list), Chinese privet (threat), Chinese wisteria (moderate threat), English ivy (moderate threat), Japanese honeysuckle (moderate threat), Japanese privet (moderate threat), and kudzu (threat). NCDOT will manage invasive plant species as appropriate.

4.1.3 Endangered Species Act Protected Species

The United States Fish and Wildlife (USFWS) lists four federally protected species for Lee County (Table 4). The Biological Conclusions for each, rendered based on survey results in the study area, are described below. Habitat requirements for each species are based on the current best available information from referenced literature and/or USFWS.

Table 4. Federally protected species listed for Lee County, North Carolina

Scientific Name	Common Name	Federal Status	Habitat Present?	Biological Conclusion
<i>Notropis mekistocholas</i>	Cape Fear shiner	Endangered	No	No Effect
<i>Ptilimnium nodosum</i>	Harperella	Endangered	No	No Effect
<i>Myotis septentrionalis</i>	Northern long-eared bat	Threatened	Yes	May Affect, Likely to Adversely Affect
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered*	Yes	No Effect

*Species is considered historical within the county.

Cape Fear shiner

Biological Conclusion: No Effect

There is potential suitable habitat for Cape Fear shiner in the study area. A review of the North Carolina Natural Heritage Program (NCNHP) database indicated no known occurrences within one mile of the study area. As described in the NRTR, there is no critical habitat for this species present in the project area, so the Critical Habitat Biological Conclusion is Absent.

Through coordination with USFWS after completion of the NRTR, it was determined that no individuals of this species are present in the project area and there is no suitable habitat for the species in the project area. For this reason, the Biological Conclusion is No Effect. A memorandum explaining this determination is in **Appendix A**.

Harperella

Biological Conclusion: No Effect

Habitat surveys determined that there is a lack of suitable habitat for this species within the study area. Additionally, a review of the NCNHP database indicated no known occurrences within one mile of the study area. The closest extant populations occur 11 to 12 miles northeast of the study area. It was therefore determined that this project will not affect this species.

Northern long-eared bat

Biological Conclusion: May Affect, Likely to Adversely Affect

USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is May Affect, Likely to Adversely Affect. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of

the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Lee County, where the project is located. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

Red-cockaded woodpecker

Biological Conclusion: No Effect

Suitable nesting habitat for the red-cockaded woodpecker (RCW) was determined not to be present within the project study area; however, marginally suitable foraging habitat was available in the form of old-growth loblolly pine stands. A review of the NCNHP database indicated no known RCW occurrences within one mile of the study area. Per USFWS guidance, surveys for threatened and endangered species regarded as historic within a county are not required and the biological conclusion is deemed No Effect. Therefore, it is determined that this project will not affect RCW.

4.2 CULTURAL RESOURCES

Cultural resources include historic architecture and significant archaeological locations contained within the project study area that have the potential to be affected by the project.

4.2.1 Historic Architectural Resources

Three historic architectural resources either currently listed on the National Register of Historic Places (NRHP) or determined to be eligible for the NRHP are located within the project study area. Detailed information about these sites is provided in the *Historic Structures Survey Report* prepared for the project (Commonwealth Heritage Group, 2017). The three sites, which are shown on **Figure 3**, are:

- Buffalo Presbyterian Church and Cemeteries (NRHP listed)
- Arthur H. McIver House (eligible for NRHP)
- Buffalo Rural Historic District (eligible for NRHP)

The Buffalo Presbyterian Church and Cemeteries site is listed on the NRHP. None of the project's three alternatives would require any permanent taking of land from this site, but each would require a 0.015-acre temporary construction easement. The NC State Historic Preservation Office (HPO) determined that the project would result in No Adverse Effect to the site. A copy of the form documenting the project's effects on historic architectural resources is in **Appendix B**.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties, including those that are determined to be eligible for, but not yet listed on, the NRHP. The Carthage Street Improvements project is a State-funded project, so it is not a Federal action. However, this project will likely require a Nationwide Permit from the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. USACE has indicated to NCDOT that the jurisdictional permit area for this project would include the areas near Skunk Creek, including the NRHP-eligible Buffalo Rural Historic

District. USACE has indicated that the NRHP-eligible Arthur H. McIver House, near the northern end of the project, would not be within the jurisdictional permit area for this project.

All three alternatives would require acquisition of a small portion of the 207-acre, NRHP-eligible Buffalo Rural Historic District. Alternative 1 would require acquisition of about 0.27 acres of the district and a temporary construction easement of 1.76 acres. Alternative 2 would require acquisition of about 0.98 acres and a temporary construction easement of 1.29 acres. In addition, Alternatives 1 and 2 would require removal of a row of decades-old pine trees along the district's frontage along Carthage Street from the northeast corner of the district to Fire Tower Road. Based on discussions with HPO it was determined that the row of pine trees contributes to the historic character of the district and that the impact on these trees associated with Alternatives 1 and 2 would constitute an adverse effect on the district. Alternative 3 was then developed in order to avoid this adverse effect. Alternative 3 would shift the project alignment in the area near Dennis Drive and reduce the width of the berm in this area to avoid the trees south of Dennis Drive. Alternative 3 would also eliminate the proposed sidewalk on the west side of Carthage Street from just north of Dennis Drive to just north of the proposed roundabout at Fire Tower Road and would incorporate a 5-foot sidewalk, rather than 10-foot multi-use path around the western side of that roundabout. Alternative 3 would require acquisition of about 0.51 acres of the district and a 1-acre temporary construction easement. HPO determined that Alternative 3 would result in No Adverse Effect on the Buffalo Rural Historic District, with the conditions that any trees removed during construction are replaced with compatible landscaping.

4.2.2 Archaeological Resources

Reviews of existing databases, visual inspection, and intensive archaeological subsurface testing showed that there are three NRHP-eligible archaeological resources in the project area. Each of these three resources is a cemetery on the Buffalo Presbyterian Church property at the southern end of the project area. The proposed functional designs for each of the three build alternatives would avoid direct impacts to all three of these cemeteries. For this reason, NCDOT determined that the project would not have any effects on NRHP-eligible archaeological sites and does not require any additional archaeological investigation, and that the project is compliant with NCGS 121-12(a) for archaeological resources. More information about this analysis is in **Appendix C**.

4.3 FARMLAND

While agricultural land uses are prevalent in Lee County, there is relatively little land in active agricultural use in the vicinity of the project. There is one active agricultural operation in the project study area, a 25-acre tract east of the intersection of Fire Tower Road and Carthage Street. This tract will not be affected by the proposed designs for any of the build alternatives. The project area is not part of any Voluntary Agricultural Districts (VADs).

Because this project is State funded, the Farmland Protection Policy Act (FPPA) does not apply.

4.4 COMMUNITY EFFECTS

This section summarizes the potential effects of the project on the project area's human environment. More detailed information on the analysis of these community effects is provided in the project's *Combined Community Characteristics Report and Community Impact Assessment* (Lochner, 2017a).

The Carthage Street corridor within the project limits is more rural at the southern end of the project area, while the northern half is more developed. Central Carolina Hospital and numerous related medical offices and similar uses are located along the northern half of the project corridor. There are also gas stations and other retail uses at the northern end of the project corridor. Notable community features in the project area are shown on **Figure 3**.

4.4.1 Relocations and Community Cohesion

The project study area has relatively few residences. The residences that are along the project corridor are individual parcels. None of the build alternatives would require any residential relocation, and because the project is along an existing roadway, it will not affect community cohesion.

Any of the three build alternatives would require relocation of three businesses. The first is a small thrift store called The Hope Chest, at 802 Wicker Street. The second is a Circle K gas station at 809 Carthage Street—the area containing the gas pumps and canopy would have to be acquired to accommodate any of the alternatives, but the convenience store on this parcel would likely remain. The third is a vacant warehouse/storage building at 801 Wicker Street. A copy of the NCDOT Relocation Report for Alternative 3 is in **Appendix D**.

4.4.2 Business Access and Parking

Each of the build alternatives would affect access or parking at several parcels along the project corridor. These access and parking effects include:

- Any of the alternatives would require the conversion of existing direct driveway connection to Carthage Street from full access to right in/right out access at the following sites:
 - Central Carolina Hospital – Conversion of driveway just north of Fields Drive.
 - Southeast Auto Outlet (east site of Carthage, near Wicker Street)
 - BP Station (east side of Carthage, near Wicker Street)
 - Sanford Housing Authority (west side of Carthage, near Wicker Street)
 - Liberty Home Care and Hospice (east side of Carthage, south of Wicker Street)
 - Boys and Girls Clubs of Central Carolina (east side of Carthage, south of Wicker Street)
 - Family Chiropractic Center (west side of Carthage, north of Doctors Drive)
 - Kinetic Institute Physical Therapy (west side of Carthage, south of Fields Drive)
 - Carolina Eye Associates (east side of Carthage Street, north of Dennis Drive)

- Sandhills Neurologists (east side of Carthage Street, north of Dennis Drive)
- Teresa Long-Woodell DDS dental office and Smith and Smith Orthodontics office on the west side of Carthage Street near the hospital – Any of the alternatives may reduce the number of parking spots available at each of these sites.
- Madden Family Dentistry – Alternative 3 would result in the loss of about 8 parking spaces from this parcel. Alternatives 1 and 2 would avoid this effect.

4.4.3 Environmental Justice

Title VI of the Civil Rights Act of 1964 protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Executive Order 12898 (1994) provides that each federal agency must make achieving environmental justice (EJ) a part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations. Special populations may include the elderly, children, the disabled, low-income areas, and racial or ethnic minority groups.

Minority and low-income populations are present in the vicinity of the project area; however, no notably adverse community impacts are anticipated with this project. For this reason, impacts to minority and low-income populations do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project area anticipated to be equitably distributed throughout the community. No disparate impacts are anticipated under Title VI and related statutes.

4.4.4 Limited English Proficiency

Census data indicate a Spanish-language speaking population in the project vicinity that meets or exceeds the US Department of Justice Limited English Proficiency (LEP) Safe Harbor threshold. For this reason, Spanish translation of project newsletters have been prepared and Spanish translation services have been available at project public meetings.

4.4.5 Parks and Recreation Areas

There are three recreational resources in the project area. These are described below:

Kiwanis Children’s Park – This 4.6-acre park is located at the northwest corner of Carthage Street and Wicker Street. It contains a playground, trails, a picnic area, and other recreational resources. Under the proposed designs for any of the build alternatives, one of the park’s picnic shelters would be affected, and a small playground near Carthage Street would be affected. No other structures would be affected, and no access points or parking would be affected.

Elks Pool Club – This is a private pool facility, part of the Sanford Elks Lodge, at the southwest corner of Carthage Street and Wicker Street. It is owned and operated by the Elks Club. Under the proposed designs for any of the build alternatives, the parcel would lose one of its two existing access points from Carthage Street, but the remaining access point would be widened from 20 feet to 36 feet and changed from full access to right in/right out. Neither the lodge nor the pool would be affected, and no parking spots would be permanently affected.

Ingram Family YMCA – This YMCA facility is located on K. M. Wicker Memorial Drive, just west of Carthage Street, near Central Carolina Hospital. It is a private, nonprofit facility that serves as a community wellness center, with a range of fitness and recreational opportunities offered. Under the proposed designs for any of the build alternatives, some of the existing parking spots on the YMCA parcel may be affected, and location of its existing access point to K. M. Wicker Memorial Drive would shift slightly. The building would not be affected.

Because this project is State funded, Section 4(f) of the Department of Transportation Act of 1966 does not apply.

4.4.6 Section 6(f) of the Land and Water Conservation Fund Act of 1965

Section 6(f) of the Land and Water Conservation Fund Act of 1965 protects recreational resources that have received grant funding under the federal Land and Water Conservation Fund (LWCF.) Section 6(f) prohibits converting properties funded under this Act to non-recreational uses without approval of the National Park Service (NPS). Any LWCF land converted to non-recreational use must be replaced with land of equal or greater value, location, and usefulness.

Kiwanis Children’s Park, described in the previous section, has received LWCF funding in the past and is subject to the requirements of Section 6(f). Any of the project alternatives would affect a small portion of the southeast corner of the park, with a permanent right-of-way impact of about 0.16 acres and a temporary construction easement impact of about 0.53 acres. The permanent impact will be small, and the park can continue to be used for recreational purposes, but under NPS requirements, replacement land will need to be provided to compensate for the conversion of the total land affected by permanent and temporary impacts (0.69 acres).

NCDOT has coordinated extensively with the City of Sanford and Lee County on this issue and the City has indicated that there are four City-owned parcels, totaling over 2.5 acres, adjacent to Horton Park, a County-owned LWCF-funded park property off of Washington Avenue in Sanford. The City intends to use these parcels as replacement property for the conversion of land from Kiwanis Children’s Park. At the time this document was prepared, the conversion process was not yet complete, but as listed in the Project Commitments, Division 8 has committed to completing the conversion process prior to beginning construction of the project.

4.4.7 Public Facilities and Services

The presence of the hospital and medical offices along the project corridor means that there is notable emergency traffic along the project corridor. However, the Lee County Fire Marshal has indicated that EMS traffic avoids Carthage Street as much as possible, due to existing traffic/safety conditions. The main emergency entrance to the hospital property is from Fields Drive. The Lee County Fire Marshal has indicated that the proposed improvements, including the proposed roundabouts at Wicker Street, Fields Drive, and Fire Tower Road, would not have a long-term effect on EMS service and that temporary construction impacts would be manageable. The dimensions of the roundabouts will be large enough to accommodate EMS vehicles.

There are no schools in the project study area, but there are several existing school bus routes along parts of Carthage Street. Construction along Carthage Street will have a minor effect on school bus operations, as buses may need to follow detours, but long-term school bus operation will not change.

4.4.8 Pedestrian and Bicycle Facilities

Existing pedestrian facilities along the project corridor are limited to a sidewalk on the north side of Fields Drive, between Carthage Street and James Street, and a short segment on the east side of Carthage Street at Wicker Street. There is an existing greenway trail (Endor Iron Furnace Trail) just west of the project study area. Portions of Carthage Street in the project area coincide with portions of US Bike Route 1. As noted in Section 4.5, local plans indicate a desire for improved pedestrian and bicycle facilities in the area. Because the project would add bike lanes on both sides of Carthage Street, a multi-use path that would connect to the Endor Iron Furnace Trail, and a sidewalk on the west of Carthage Street, the project would substantially improve pedestrian and bicycle mobility in the project area, having a positive effect on pedestrian and bicycle mobility.

4.5 LOCAL AREA PLANS

The *Sanford and Lee County 2020 Land Use Plan* (1999) is the long-range plan for the area, but this plan doesn't include any notable policies or objectives related to the project corridor. Local planners have indicated that the City of Sanford views the Carthage Street corridor as a gateway to downtown Sanford and supports the roundabouts that are proposed as part of the project designs. The *City of Sanford Pedestrian Plan* (2011) indicates that the City would like Carthage Street to be improved with sidewalks on both sides as it extends southward from downtown Sanford. The Pedestrian Plan also calls for a greenway along Skunk Creek, crossing Carthage Street and connecting to the existing Endor Iron Furnace Trail. The *City of Sanford Bicycle Plan* (2014) calls for the same greenway, identified as "Medical Mile." The *Lee County Comprehensive Transportation Plan* (2011) recommends adding bike lanes to US Bike Route 1 which coincides with portions of Carthage Street within the project study area. The planned bicycle and pedestrian improvements and the incorporation of roundabouts and raised medians, which may be able to accommodate planting attractive vegetation, mean that the project will have a positive impact on the implementation of local plans and visions for the Carthage Street corridor.

4.6 INDIRECT AND CUMULATIVE EFFECTS

The project will not alter travel patterns, reduce travel time, affect access to properties in the area, or open areas for development or redevelopment. Due to its minimal transportation impact-causing activities, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect and cumulative effects study was not needed for this project.

4.7 TRAFFIC NOISE

Based on the proposed improvements, the NCDOT Human Environment Section has determined that the project is not considered a Type I traffic noise project, as defined in the NCDOT Traffic Noise

Policy. It is instead a Type III noise project; Type III projects do not require a traffic noise analysis and none was performed for this project.

4.8 AIR QUALITY ANALYSIS

An air quality analysis was prepared for this project. The project is located in Lee County, which has been determined to comply with the National Ambient Air Quality Standards (NAAQS). Since the project is located in an attainment area, 40 CFR 51 and 93 are not applicable.

For projects where the design year average annual daily traffic (AADT) traffic volumes are projected to be 140,000 or less, a quantitative mobile source air toxic (MSAT) analysis is not required. The 2040 AADT is projected to range from 8,500 to 13,300 vehicle per day; therefore, a qualitative analysis is sufficient.

Under each build alternative there may be localized areas where vehicle miles traveled (VMT) would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced near the proposed roundabouts where traffic volumes would be shifted slightly closer to residences. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of US Environmental Protection Agency (EPA) vehicle and fuel regulations. Under any of the build alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to EPA's MSAT reduction programs.

4.9 HAZARDOUS MATERIALS

NC DOT searched existing databases for the presence of known potential hazardous waste sites along the project corridor. Four sites were identified, each with underground storage tanks (USTs)— Central Carolina Hospital, the BP station at the northwest corner of the Wicker Street intersection, Southeast Auto Outlet (a car rental agency) at the southeast corner of the intersection at Wicker Street, and The Foreign Exchange (an auto repair shop) at the corner of Carbonton Road and Carthage Street. Site assessments will be conducted for soil and groundwater contamination prior to construction and relocation of any USTs or fuel pumps.

4.10 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 5 summarizes the potential environmental consequences of each of the build alternatives. Alternative 3 is the recommended alternative for the project.

Table 5. Environmental Impacts of Build Alternatives

Environmental Resource	Alternative 1	Alternative 2	Alternative 3 (Recommended Alternative)
Jurisdictional streams	322 linear feet	317 linear feet	318 linear feet
Jurisdictional wetlands	0.03 acres	0.03 acres	0.03 acres
Protected species	1*	1*	1*
Parks affected [subject to Section 6(f)]	1	1	1
Historic properties adversely affected	1	1	0
Archaeological sites affected	0	0	0
Agricultural operations affected	0	0	0
Neighborhoods/communities affected	0	0	0
Environmental justice impacts	0	0	0
Residential relocations	0	0	0
Business relocations	3	3	3
Properties with impacts to parking or access	11	11	12
Pedestrian and bicycle facilities	Positive Effect	Positive Effect	Positive Effect
Land use and development	Positive Effect	Positive Effect	Positive Effect
Hazardous materials sites	4	4	4

*Northern long-eared bat – Programmatic Biological Conclusion is “May Affect, Likely to Adversely Affect”

5. COMMENTS AND COORDINATION

Coordination with the public, local officials, and state and federal agencies was ongoing throughout the planning and preliminary design phases of the project. This section summarizes all coordination and correspondence.

5.1 PUBLIC INVOLVEMENT

A public meeting for the Carthage Street Improvements project was held on September 22, 2016, at the Elks Club on Carthage Street in Sanford. The public meeting was a joint meeting with another nearby NCDOT project—the U-5727 project, which is exploring improvements to US 1/US 15-501 in Sanford. The meeting was an informal open house, with a map of the project area on display. A handout explaining the purpose of the project and the environmental study process was distributed to meeting attendees. A total of 57 individuals signed the joint meeting attendance roster for the two projects. Two written comment letters were received following the meeting, both from property owners along the project corridor expressing concern about potential impacts to their properties.

5.2 START OF STUDY LETTER

A Start of Study Letter was sent to local, state, and federal agencies with a potential interest in the project. A copy of the letter is in **Appendix E**. The letter was submitted to the following recipients:

- Amy Dalrymple, Chair of Lee County Board of Commissioners
- Felix Davila, Federal Highway Administration
- Phillip “Hal” Hegwer, Sanford City Manager
- Gary Jordan, US Fish and Wildlife Service
- T. Chet Mann, City of Sanford Mayor
- Patrick D. Molamphy, NCDOT Board of Transportation
- David Montgomery, Lee County Planner
- Andrew Williams, US Army Corps of Engineers
- Brian Wrenn, NC Division of Water Resources

US Fish and Wildlife Service (USFWS) submitted a response, noting that it does not have any concerns for the project. No other responses were received.

5.3 COORDINATION WITH LOCAL OFFICIALS

Several meetings have been held with representatives of local government organizations and other stakeholder organizations to coordinate development of the project. These meetings included the following:

- April 7, 2016 Meeting – At this meeting, NCDOT introduced the project and requested input from local officials. The local officials indicated that the local vision for the project is to transform this section of Carthage Street according to a “Complete Streets model,” including a two-lane divided typical section with median islands, bike lanes, a multi-use path, and a sidewalk.
- January 18, 2017 Meeting – At this meeting, NCDOT discussed with the local officials their preferred typical section for the project. Preferences included 5-foot dedicated bike lanes on each side of Carthage Street, 11-foot travel lanes, and a 10-foot multi-use greenway path paved with asphalt (to match existing greenways in Sanford.)
- May 9, 2017 Meeting – At this meeting, NCDOT received input from the local officials on their preferred intersection design concepts. The preference was for roundabouts with adequate width to accommodate turning movements for large trucks and emergency vehicles.
- June 22, 2017 Meeting – NCDOT held this meeting with representatives of Central Carolina Hospital to receive input regarding the potential effects of the project on hospital-related traffic.
- June 22, 2017 Meeting – NCDOT held this meeting with the Lee County Fire Marshal to receive input regarding emergency management services in the project area so that this input could be considered in developing the project.
- March 27, 2018 Meeting – NCDOT held this meeting with the local officials to discuss the implications of Section 106 of the National Historic Preservation Act on the project.

6. BASIS FOR FINDING OF NO SIGNIFICANT IMPACT

Based on a study of the proposed project documented in this assessment and upon the comments received from regulatory agencies, local officials, and public, it is the finding of NCDOT that this project will not have a significant adverse impact upon the human or natural environment. The proposed project is consistent with local plans and will not disrupt communities. Per this evaluation, a Finding of No Significant Impact is applicable for this project. Therefore, no further environmental analysis is required.

7. REFERENCES

- City of Sanford. (1999). *Sanford & Lee County 2020 Land Use Plan*. Retrieved from http://www.sanfordnc.net/planning_development/2020%20plan%20-%20Final%20Draft.pdf.
- City of Sanford. (2010). *Comprehensive Pedestrian Plan*. Retrieved from http://www.sanfordnc.net/Planning_Development/Projects/Sanford%20Pedestrian%20Plan%20Draft.pdf.
- Commonwealth Heritage Group. (2017). *U-5709 Historic Structures Survey Report*.
- Ecological Engineering. (2016). *U-5709 Preliminary Hydraulics Technical Report*.
- H.W. Lochner. (2017a). *U-5709 Combined Community Characteristics Report and Community Impact Assessment*.
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- North Carolina Department of Transportation. (2017). *2018-2027 State Transportation Improvement Program*. Retrieved from <https://www.ncdot.gov/strategictransportationinvestments/2018-2027.html>.
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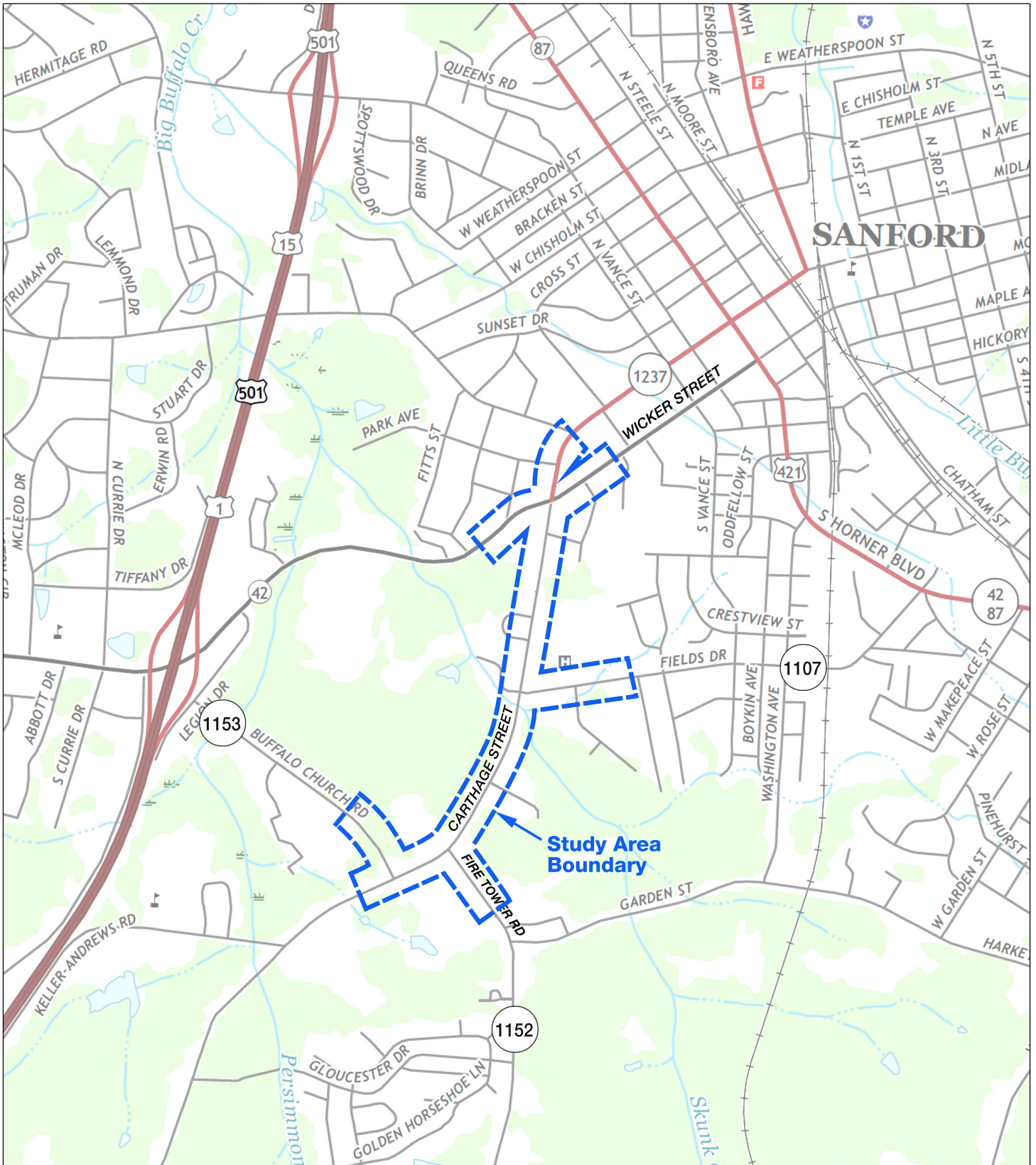


Figure 1

Project Study Area

Carthage Street Improvements Study

State Transportation Improvement Project No. U-5709

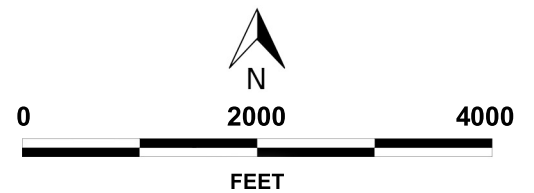
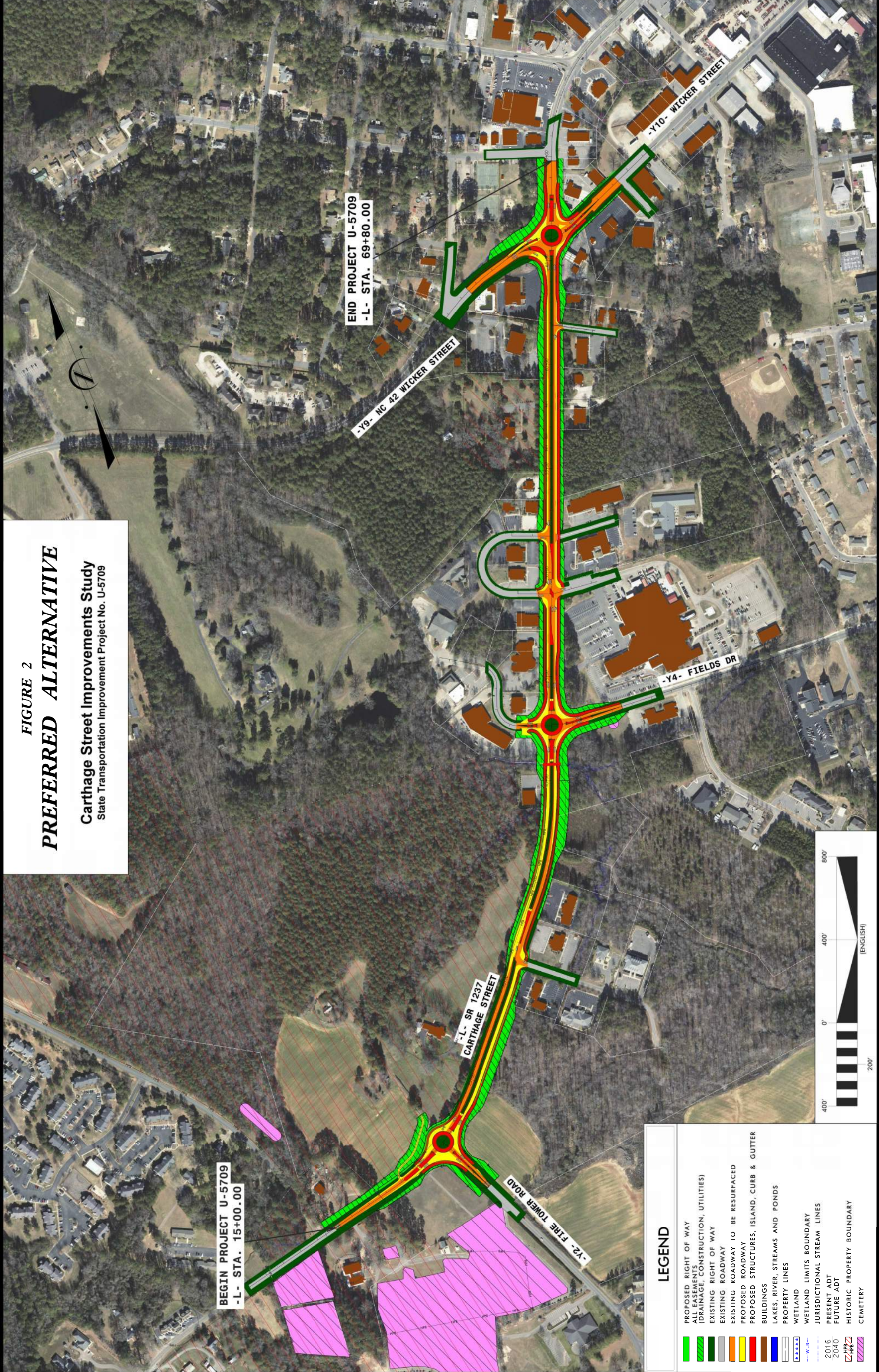


FIGURE 2

PREFERRED ALTERNATIVE

Carthage Street Improvements Study
State Transportation Improvement Project No. U-5709



BEGIN PROJECT U-5709
-L- STA. 15+00.00

END PROJECT U-5709
-L- STA. 69+80.00

L- SR 1237
CARTHAGE STREET

Y2- FIRE TOWER ROAD

LEGEND

- PROPOSED RIGHT OF WAY
- ALL EASEMENTS (DRAINAGE, CONSTRUCTION, UTILITIES)
- EXISTING RIGHT OF WAY
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB & GUTTER
- BUILDINGS
- LAKES, RIVER, STREAMS AND PONDS
- PROPERTY LINES
- WETLAND
- WETLAND LIMITS BOUNDARY
- JURISDICTIONAL STREAM LINES
- PRESENT ADT
- FUTURE ADT
- HISTORIC PROPERTY BOUNDARY
- CEMETERY



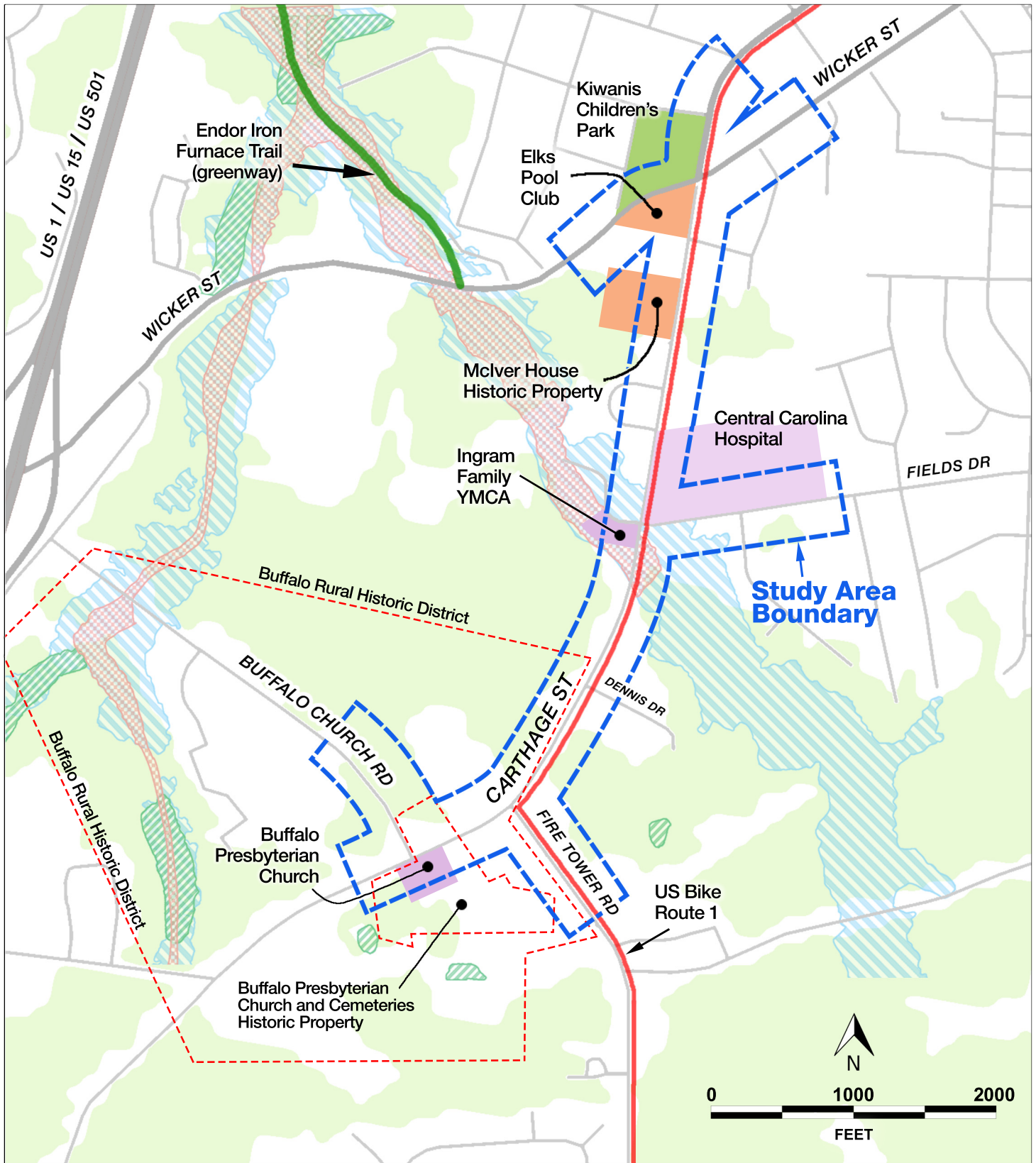


Figure 3

Environmental Constraints

Carthage Street Improvements Study

State Transportation Improvement Project No. U-5709

- | | |
|--|--|
|  Wetlands |  100-Year Floodway |
|  100-Year Floodplains |  Tree Cover (approx.) |

APPENDIX A
CAPE FEAR SHINER DOCUMENTATION





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

DATE: 19 April 2018
TO: Kristin Maseman – HW Lochner, Inc.
FROM: Rex Badgett
SUBJECT: Cape Fear Shiner - U-5709

Division 8 of the NCDOT is planning to widen SR 1237 (Carthage Street) from SR 1152 (Fire Tower Road) to NC 42 in Lee County (Attachment A). As part of this project an existing concrete box culvert over Skunk Creek will be replaced and lengthened.

To ensure compliance with Section 7 of the Endangered Species Act (ESA), a survey for endangered species should be completed prior to any ground disturbing activities on publically funded projects. Species listed as federally endangered in Lee County are the red-cockaded woodpecker (*Picoides borealis*), Cape Fear Shiner (*Notropis mekistocholas*), and Harperella (*Ptilimnium nodosum*). This memo addresses the Cape Fear Shiner **only**.

According to the US Fish and Wildlife Service:

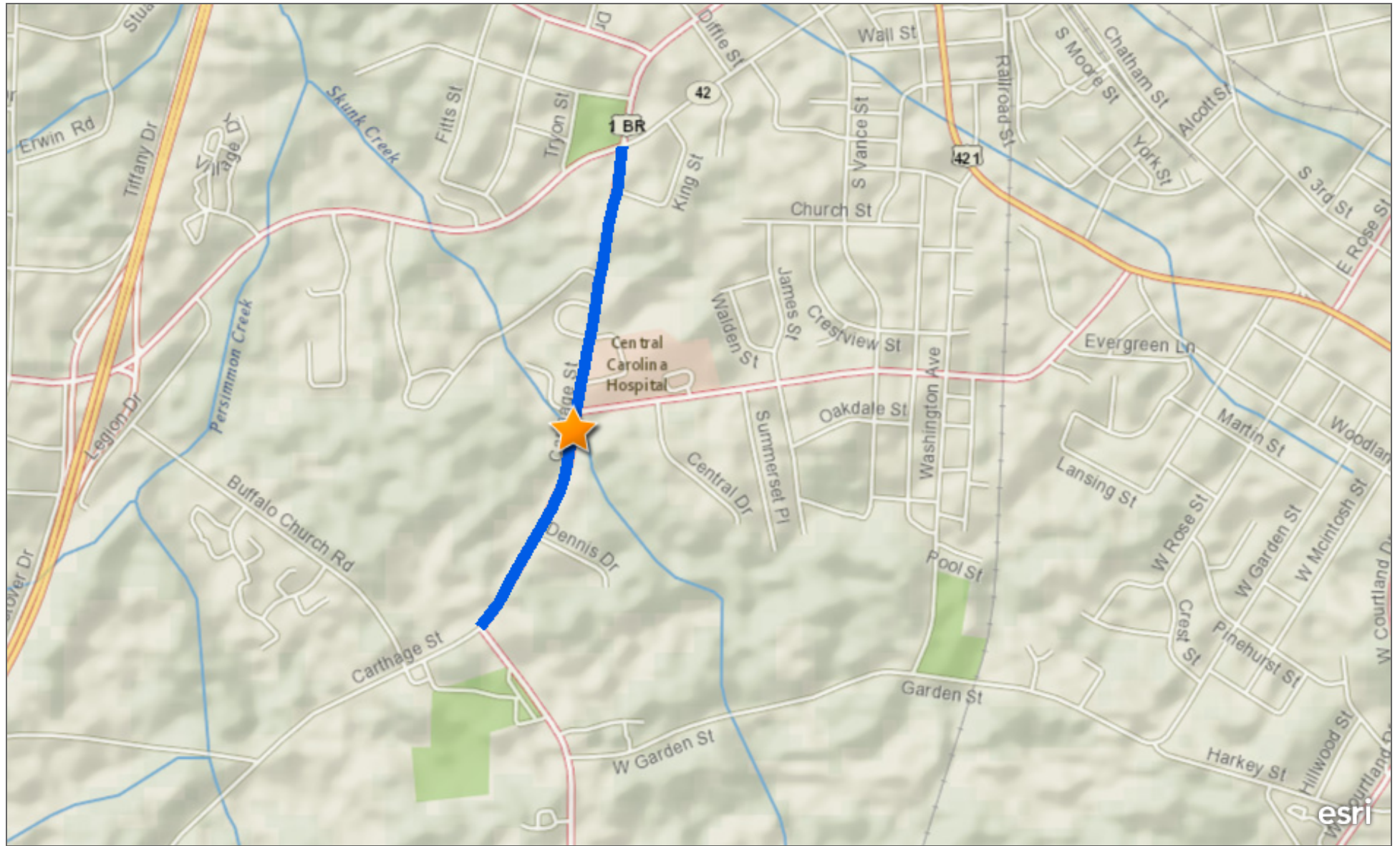
The constituent elements for the Cape Fear shiner include clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs and slack water areas with large rock outcrops and side channels and pools with water of good quality with relatively low silt loads.

A search of the North Carolina Natural Heritage database did not reveal any known Cape Fear Shiner occurrences in Skunk Creek or any nearby waters (Attach. B). A site visit was conducted on 19 April 2018. Skunk Creek was not found to contain suitable habitat. Gary Jordan, USFWS Section 7 coordinator for NCDOT projects was contacted and agreed that Skunk Creek does not contain suitable habitat for the Cape Fear Shiner. As such, this project should be considered to have “**No Effect**” on the Cape Fear Shiner.

rb

Attachment A: Area Map
Attachment B: NCNHP Element Occurrence Report

U-5709



U-5709 Lee County

0.4mi

NCDOT GIS Unit | NCCGIA | NCDOT GIS Unit, NCDOT STIP Unit | U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



**North Carolina Department of Natural and Cultural Resources
Natural Heritage Program**

Governor Roy Cooper

Secretary Susi H. Hamilton

NCNHDE-5843

April 19, 2018

Rex Badgett
NC DOT
902 N. Sandhills Blvd.
Aberdeen, NC 28315
RE: U-5709

Dear Rex Badgett:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists and is included for reference. Tables of natural areas and conservation/managed area within a one-mile radius of the project area, if any, are also included in this report.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve (DNP), Registered Heritage Area (RHA), Clean Water Management Trust Fund (CWMTF) easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919.707.8603.

Sincerely,
NC Natural Heritage Program

MAILING ADDRESS:
1651 Mail Service Center
Raleigh, NC 27699-1651

Telephone: (919) 707-8107
www.ncnhp.org

LOCATION:
121 West Jones Street
Raleigh, NC 27603

Attachment "B"

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
U-5709
April 19, 2018
NCNHDE-5843

No Element Occurrences are Documented within the Project Area

There are no documented element occurrences (of medium to very high accuracy) that intersect with the project area. Please note, however, that although the NCNHP database does not show records for rare species within the project area, it does not necessarily mean that they are not present; it may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys if needed, particularly if the project area contains suitable habitat for rare species. If rare species are found, the NCNHP would appreciate receiving this information so that we may update our database.

No Natural Areas are Documented within the Project Area

Managed Areas Documented Within Project Area *

Managed Area Name	Owner	Owner Type
NC Clean Water Management Trust Fund Easement	NC DNCR, Clean Water Management Trust Fund	State

* NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>. Data query generated on April 19, 2018; source: NCNHP, Q2 April 2018. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area

U-5709
April 19, 2018
NCNHDE-5843

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Dragonfly or Damselfly	33757	Somatochlora georgiana	Coppery Emerald	2004-Pre	H?	5-Very Low	---	Significantly Rare	G3G4	S2?

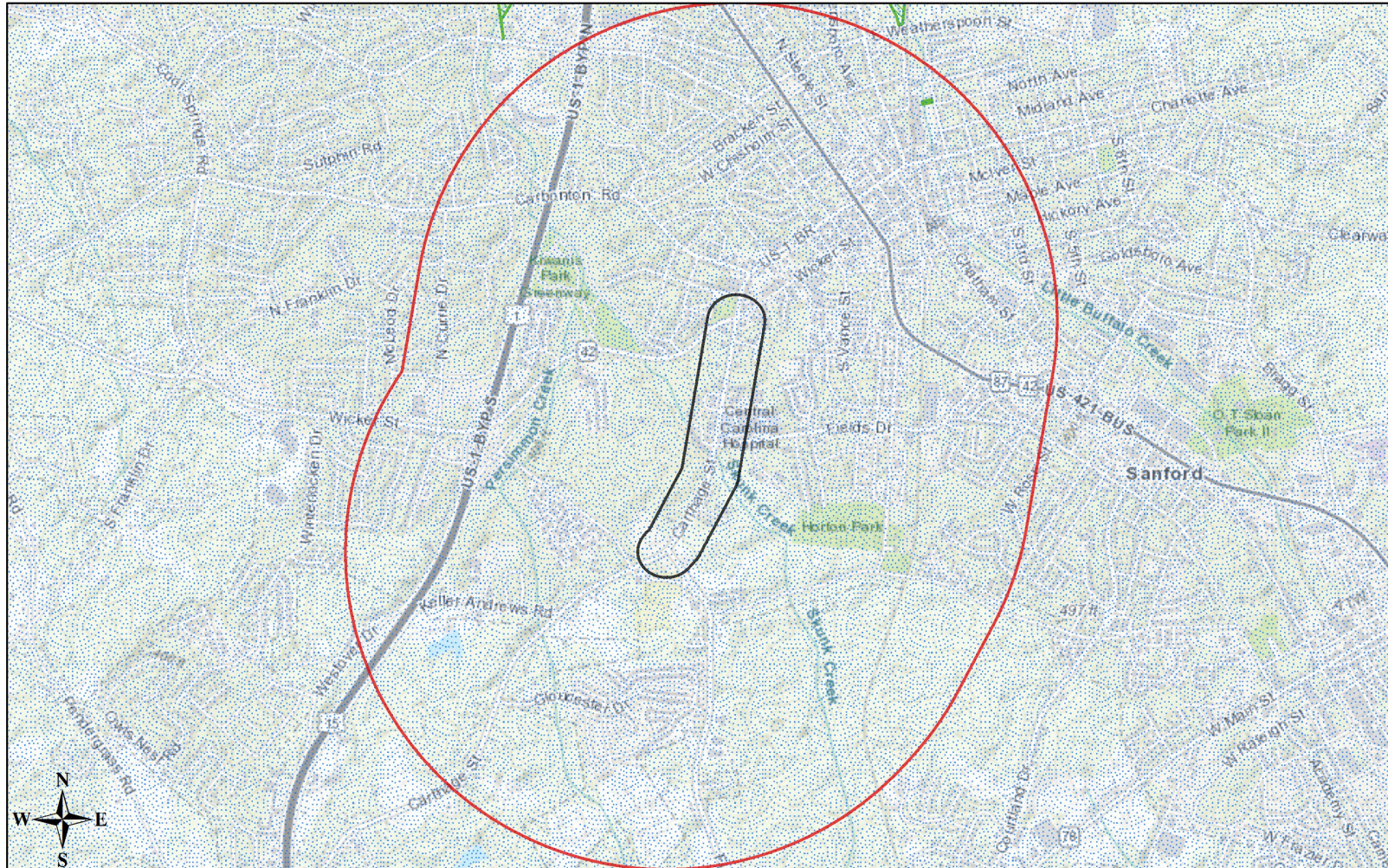
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area





Managed Area Name	Owner	Owner Type
NC Clean Water Management Trust Fund Easement	NC DNCR, Clean Water Management Trust Fund	State

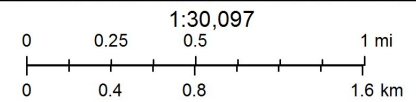
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>. Data query generated on April 19, 2018; source: NCNHP, Q2 April 2018. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-5843: U-5709



April 19, 2018

-  Project Boundary
-  Buffered Project Boundary
-  Natural Heritage Element Occurrence (NHEO)
-  Managed Area (MAREA)

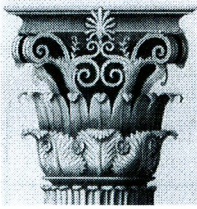


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

APPENDIX B
HISTORIC ARCHITECTURAL EFFECTS DOCUMENTATION



16-06-0025



HISTORIC ARCHITECTURE AND LANDSCAPES ASSESSMENT OF EFFECTS FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	U-5709	County:	Lee
WBS No.:	50159.1.1	Document Type:	EA
Fed. Aid No:	N/A	Funding:	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
Federal Permit(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit Type(s):	

Project Description:

Widen SR 1237 (Carthage Street) from SR 1152 (Fire Tower Road) to NC 42 (Wicker Street) in Sanford.

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on July 1, 2016. Several previously identified and unidentified properties were within the Area of Potential Effects, and a survey was required and performed in June 2017 from which a historic structures survey report was produced. The State Historic Preservation Office concurred with the findings of the report in July 2017, which included a boundary reduction for the Buffalo Rural Historic District. The Buffalo Rural Historic District (DE) and Buffalo Presbyterian Church and Cemeteries (NR) require an assessment of effects.

ASSESSMENT OF EFFECTS

Property Name:	Buffalo Rural Historic District	Status:	Determined Eligible
Survey Site No.:	LE0788	PIN:	
Effects			
<input type="checkbox"/> No Effect <input checked="" type="checkbox"/> No Adverse Effect <input type="checkbox"/> Adverse Effect			
<u>Explanation of Effects Determination:</u>			
No Adverse Effect with the conditions that any trees removed are replaced with compatible landscaping, the sidewalk on the side of the historic property boundary (Buffalo Rural Historic District) is shortened, and bike lane widths are reduced and pulled back into the roundabout for minimization as shown on the 4/6/2018 plans.			
<u>List of Environmental Commitments:</u>			

Property Name:	Buffalo Presbyterian Church and Cemeteries	Status:	National Register listed
Survey Site No.:	LE0496	PIN:	
Effects			
<input type="checkbox"/> No Effect <input checked="" type="checkbox"/> No Adverse Effect <input type="checkbox"/> Adverse Effect			
<u>Explanation of Effects Determination:</u>			
<u>List of Environmental Commitments:</u>			

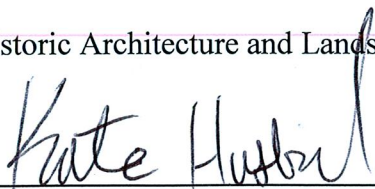
FHWA Intends to use the State Historic Preservation Office's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):

SUPPORT DOCUMENTATION

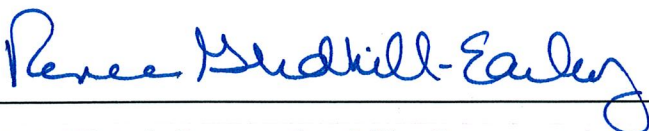
Map(s)
 Previous Survey Info.
 Photos
 Correspondence
 Design Plans

FINDING BY NCDOT AND STATE HISTORIC PRESERVATION OFFICE

Historic Architecture and Landscapes – ASSESSMENT OF EFFECTS

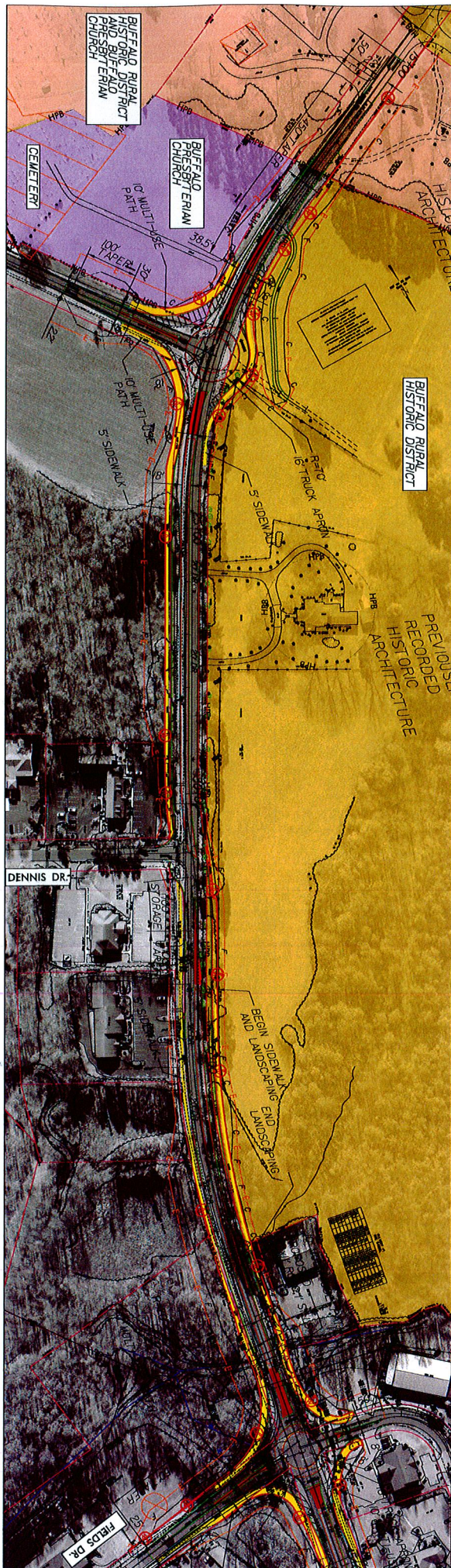

4/17/2018

NCDOT Architectural Historian Date


4.16.18

State Historic Preservation Office Representative Date

Federal Agency Representative Date



APPENDIX C
ARCHAEOLOGICAL FINDINGS





**NO NATIONAL REGISTER OF HISTORIC PLACES
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES
AFFECTED FORM**



This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No: **U-5709** *County:* **Lee**
WBS No: **50159.1.1** *Document:* **State EA**
F.A. No: **na** *Funding:* State Federal

Federal Permit Required? Yes No *Permit Type:* **unknown**

Project Description:

The North Carolina Department of Transportation (NCDOT) intends to upgrade SR 1237, Carthage Street, to a three-lane facility from SR 1152, Fire Tower Road, to NC 42, Wicker Street, in Sanford. Additionally, three potential roundabouts are proposed at the intersections of NC 42, SR 1152, and SR 1107, Fields Drive, along SR 1237. The project corridor is estimated to be slightly more than 1.23 miles (nearly 1.99 kilometers) long. No preliminary design was available at the time of the initial archaeological review and survey, but a study area 500 feet (152.4 meters) wide along the project length, with spurs at SR 1153, SR 1152, SR 1107, and US 1 Business was proposed with the request for Cultural Resources Review. For the purposes of the archaeological survey, the area of potential effects (APE) will be considered to be this study area. Thus, the APE is estimated to encompass nearly 122.66 acres (almost 49.64 hectares) in Sanford.

SUMMARY OF ARCHAEOLOGICAL FINDINGS

The North Carolina Department of Transportation Archaeology Group reviewed the subject project and determined:

- There are no National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects. (Attach any notes or documents as needed)
- There are National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects. (Attach any notes or documents as needed).
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.

Brief description of review activities, results of review, and conclusions:

As a part of the archaeological review of the proposed project, background research was conducted at the North Carolina Office of State Archaeology (OSA) on June 27, 2016 by NCDOT archaeologist, Shane Petersen. This review of maps and files archived at OSA revealed that the proposed APE had not been previously investigated systematically for archaeological resources, but that one archaeological site, 31LE4, had been recorded by archaeologists with the University of North Carolina at Chapel Hill in 1975 between Fields Drive and the tributary to the south. This site was not assessed for National Register of Historic Places (NRHP) eligibility. An examination of recorded historic resources presented on the North Carolina State Historic Preservation Office HPOWEB GIS Service (SHPO 2017) also revealed two properties listed on the National Register of Historic Places (NRHP) and two additional historic structures are located within the proposed APE. The two NRHP-listed properties are the Buffalo Church and Cemeteries (LE496) and the Buffalo Rural Historic District (LE488). The two historic structures documented within the project area are the Study-listed Arthur H. McIver House (LE785) and the Kenneth E. Seymour Farm (LE635; included within the Buffalo Rural Historic District).

The project area is located within the Sandhills region of North Carolina, a physiographic area along edge of the Piedmont Plateau and the Inner Coastal Plain. As noted in the Archaeological Survey Required form, much of the proposed APE appears to have undergone significant landscape alteration as a result of residential, commercial, and transportation development. An examination of soils in Lee County presented on the National Resources Conservation Service Web Soil Survey (USDA 2017) indicates that the following soil types fall within the delineated APE: Chewacla silt loam, 0 to 2 percent slopes, frequently flooded (Ch); Congaree silt loam, 0 to 2 percent slopes, frequently flooded (Cp); Mayodan fine sandy loam, 2 to 8 percent slopes (MfB); Mayodan fine sandy loam, 8 to 16 percent slopes (MfD); Mayodan-Urban land complex, 2 to 8 percent slopes (MrB); Tillery fine sandy loam, 1 to 4 percent slopes, rarely flooded (TYoB); and Urban land (Ur). These factors allowed for the consideration of areas with less-sloped, moderately well-drained soils as areas of higher probability for intact archaeological deposits. Roughly 30 acres within the boundaries for the proposed APE conformed to these conditions and became the focus of the intensive archeological field investigations.

On February 20 and 21, 2017, Legacy Research Associates (Legacy) completed an intensive archaeological survey of those high probability areas within the project APE (Joy 2017). The archaeological results outlined below are largely excerpted from the subsequent summary report (unless otherwise noted). The archaeological investigation of the APE included visual inspection and systematic shovel testing within high-probability areas to search for surface artifacts, above-ground resources, or other signs of cultural activity. Shovel testing was conducted at 30-meter intervals along nine (n=9) transects that were established to survey the high-probability areas. A total of 84 shovel tests were excavated along these transects.

Transect 1 was located in the southeast quadrant of the Carthage Street and Fire Tower Road intersection that was partially within the National Register Buffalo Presbyterian Church and Cemeteries boundary. The area was observed as a relatively flat, mowed grass lawn. Six (n=6) shovel tests were excavated along Transect 1. Part of the Transect 1 APE along Fire Tower Road was not shovel tested because of the presence of burials in the Buffalo Church modern expansion of the “Main Cemetery”.

According to the 1999 National Register Nomination Form for the Buffalo Church and Cemeteries property, the “Main Cemetery” was established to the south of the church, when the “Original Cemetery” neared capacity in 1870. This “Main Cemetery” was expanded again eastwards, towards Fire Tower Road after 1996. The Main Cemetery Expansion is recorded as site 31LE189** and lies outside the original 1999 boundaries for the Buffalo Church and Cemeteries property (although it does fall largely within the boundaries of the Buffalo Rural Historic District). This site is not considered to be eligible for the NRHP and does not contribute to the eligibility of the Buffalo Church and Cemeteries property.

Transect 2 was located along the south side of Carthage Street and within the National Register Buffalo Presbyterian Church and Cemeteries boundary. The eastern part of Transect 2 was observed as a manicured lawn associated with the Buffalo Presbyterian Church and the western part of Transect 2 was

is characterized as gently sloping woodland above an unnamed tributary of Persimmon Creek. Soils in this area are recorded as Mayodan fine sandy loam with 2-8 percent slope. A total of four (n=4) shovel tests were excavated along Transect 2. No cultural material was recovered from the Transect 2 shovel tests. A portion of the APE in this area was not subjected to subsurface testing because of the presence of burials in three discrete cemetery areas. These are the Buffalo Church “Original Cemetery” (recorded as 31LE186**), the “African-American Cemetery” (recorded as 31LE187**), and the “Matthews Family Plot” (recorded as 31LE188**).

Located to the west of the Buffalo Presbyterian Church, the “Original Cemetery” (31LE186**) dates from the first interment in 1857, to the expansion of the “Main Cemetery” in 1870. With the exception of six grave markers surrounded by a chain-link fence adjacent the current church playground, the remainder of the interments are located in the overgrown portions of the property west of the church building. No attempt to determine the number of interments in the areas was made, rather the boundaries of site 31LE186** were established through the use of the 1931 *Property and Landscape Map of the Buffalo Church and Cemetery* created by Francis Deaton. This location and boundary is consistent with the 1999 National Register of Historic Places form, which lists the “Original Cemetery” as a contributing element to the property’s significance.

The “African-American Cemetery” (recorded as 31LE187**) is located to the south of the “Original Cemetery” and southwest of the Buffalo Presbyterian Church. Reported as the location of a cemetery for slaves prior to the Civil War, the 1999 National Register of Historic Places form for the Buffalo Church and Cemeteries property states that local African-American churches in Sanford purchased the right to use the area as a burial ground. This area has long been described as a wooded area with few grave markers, but archaeologists with Legacy in February 2017 observed that some clearing of the underbrush had occurred and that markers had been set upright as part of restoration work by “The Heritage Foundation” for the “Black Heritage Community Cemetery”. Much as in the case of the “Original Cemetery” the site boundaries for 31LE187** were based on the 1931 *Property and Landscape Map of the Buffalo Church and Cemetery*. This cemetery is also listed as a contributing element to the Buffalo Church and Cemeteries property’s significance.

The third cemetery recorded as an archaeological resource along the area of Transect 2 is the “Matthews Family Plot” (31LE188**). Located to the east of the Buffalo Presbyterian Church in a grove of trees, surrounded by a driveway, the cemetery is reported to contain 30 markers dating from 1865 to the present. This family plot belonged to the family of Daniel Matthews (1796-1865), whose family sold a five-acre parcel surrounding the plot to the church in 1890. Researchers with Legacy observed the cemetery plot to be well-maintained, though no effort was made by Legacy to confirm the number or dates of the interments as a part of these investigations. Site boundaries for the cemetery are based on the observed conditions and the 1931 *Property and Landscape Map of the Buffalo Church and Cemetery*. This cemetery is also listed as a contributing element to the Buffalo Church and Cemeteries property’s significance.

Transect 3 was located in the northwest quadrant of Carthage Street and Buffalo Church Road intersection. A total of seven (n=7) shovel tests were excavated along this area which is characterized as a relatively flat woodland. Soils in this area are recorded as Mayodan fine sandy loam with 2-8 percent slope. No cultural material was recovered from subsurface testing along this transect.

Transect 4 was located in the northeast quadrant of Carthage Street and Buffalo Church Road intersection and was partially within the National Register Buffalo Presbyterian Church and Cemeteries boundary. This area includes the ca. 1926 Buffalo Presbyterian Church Manse, a contributing structure to the National Register property. The area was observed as relatively flat woodland, except for a grassy lawn along Carthage Street in the vicinity of the ca. 1926 Manse. Soils in this area are recorded as Mayodan fine sandy loam with 2-8 percent slope. A total of 30 shovel tests were excavated along this transect, of which, only one yielded cultural material (T4 ST 4). This test contained mid- to late-twentieth-century cultural material. Close-interval testing around T4 ST 4 resulted in recording 31LE185**. No cultural

material associated with the ca. 1926 Buffalo Church Manse (LE646) was found while shovel testing along Transect 4.

Located in a woodland along the east side of Buffalo Church Road, site 31LE185** was delineated through the excavation of 11 subsurface tests (four transect tests and seven radial tests). Five of these subsurface tests produced 40 artifacts characterized as twentieth-century material associated with a domestic occupation: ceramics (n=5), glass (n=10), oxidized metal (n=17), and animal bones (n=3). Additionally several brick fragments were observed at the site location but were not collected. An analysis of these materials that was undertaken by Legacy, suggests that the recovered material is associated with Architecture (n=1; porcelain electrical arresstor), Kitchen (N=11; coarse earthenware and undecorated whiteware), Lighting (n=2; colorless lamp glass), and Personal (n=1; ceramic bead) domestic areas. Seventeen recovered artifacts were characterized as indeterminate ferrous fragments. The remainder of the recovered materials were identified as animal bones (n=3; large mammal and indeterminate) and fuel (n=3; coal and slag). Based on county GIS imagery and tax information, Joy determined that the occupation of site 31LE185** stretched between 1938 and 2004, when the house at that location was destroyed. This site was not recommended as eligible for the NRHP and no further investigations are required.

Transect 5 was located in the northeast quadrant of the intersection of Carthage Street and Fire Tower Road. Fifteen transect shovel tests were excavated in this area. The area along Fire Tower Road was an agricultural field (ST 1-8) and the area along Carthage Street was a continuation of that agricultural field (ST 9-11) as well as woodland (ST 12-15; see Figure 8 in Appendix A). Soils along Transect 5 are recorded as Mayodan fine sandy loam with 2-8 percent slope. No cultural material was recovered from the Transect 5 subsurface testing.

Transect 6 was located in the southeast quadrant of the intersection of Carthage Street and Fisher Road. Thirteen transect shovel tests were excavated in this area. The transect along Carthage Street is gently sloping woodland on each side of an intermittent stream (ST 1-6); the woodland continues along Fisher Road for a short distance (ST 7) and then the area transitions into a mowed pasture (ST 8-9). Transect 6 is interrupted by a medical center and then resumes in a woodland area (ST 10-13). Soils along Transect 6 are Tillery fine sandy loam with 1-2 percent slope and Mayodan fine sandy loam with 8-15 percent slope. No cultural material was recovered from the Transect 6 shovel tests. The location of site 31LE4/4** has been mapped within this survey area, as noted above. Additional close-interval shovel testing was conducted where Transect 6 cross through the previously recorded site 31LE4/4**. This site appears to have been recorded by Research Laboratories of Archaeology staff in 1975 as a collection of four historic sherds and one prehistoric flake (UNC 2017). Legacy researchers recovered no prehistoric artifacts through the subsurface testing at the site location and only one ceramic sherd, a twentieth-century, Japanese, hand-painted, thin-body, porcelain vessel fragment. This site was not considered to be significant and is not recommended as eligible for the NRHP.

Transect 7 was located on the north side of Fisher Road. The area is gently sloping woodland that has Mayodan-Urban land complex soils with 2-8 percent slope. Two (n=2) shovel tests were excavated along Transect 7. No cultural material was recovered from the Transect 7 shovel tests.

Transect 8 was located on the south side of Wicker Street and west of Carthage Street. The area is partially wooded with some residential development. Soils mapped at this location are Tillery fine sandy loam with 1-4 percent slope. No cultural material was recovered from the four Transect 8 shovel tests excavated in this area.

Transect 9 was located on the east side of Carthage Street. The area is wooded with Mayodan fine sandy loam having 2-8 percent slope. A total of three (n=3) shovel tests were excavated along Transect 9, from which, no cultural material was recovered.

Recommendations and Conclusions

A pedestrian visual inspection of the archaeological APE, coupled with intensive non-subjective archaeological subsurface testing resulted in the recordation of five archaeological resources (31LE185**, 31LE186**, 31LE187**, 31LE188**, and 31LE189**) and additional investigation at a previously recorded site (31LE4/4**). Of these resources, sites 31LE4/4**, 31LE185**, and 31LE189**, are not considered to be eligible for the National Register of Historic Places and no further evaluation of these sites is necessary for the current project. Site 31LE189** represents a large area of human interments from the late twentieth century to the present and would be subject to North Carolina General Statute (NCGS) 65 if that area were to be subject to earth-disturbing activities. Sites, 31LE186**, 31LE187**, and 31LE188** also represent the locations of groups of human interments and, as such, would subject to NCGS 65, as well as NCGS 70 due to the numbers of suspected unmarked burials. Additionally, these three cemeteries are also considered to be NRHP-eligible contributing components to the NRHP-listed Buffalo Church and Cemeteries Property. That historic resource (LE0496) was listed as eligible under Criteria A and C. As archaeological resources, a case can be made that the cemeteries also may be considered to be eligible under those criteria. As individual archaeological resources, these cemeteries may also be eligible under Criteria B and D, but to make that determination additional documentation and investigation would be required as part of the site evaluation process. The current effort does not necessitate that level of evaluation. All four cemeteries were recommended for avoidance.

On May 24, 2017, preliminary design was obtained from the engineering consultant tasked with designing the proposed project for comparison to the recorded locations of the previously referenced cemetery sites. Based on that comparison, no impacts to any of the cemeteries are anticipated. On July 24, 2017, NCDOT staff archaeologist, Shane Petersen, met with the OSA reviewer for Lee County, Susan Myers to review the mapping and the results of the archaeological investigation briefly.

No further archaeological investigations are required for the project as it is currently proposed. The project footprint, as it was depicted on the preliminary mapping available in May 2017 does not represent any impacts to the NRHP-eligible archaeological sites identified and does not require additional investigation in compliance with NCGS 65 or 70. As depicted on that mapping, the project is also compliant with NCGS 121-12(a) for archaeological resources. Should the project footprint expand beyond those limits (particularly in the vicinity of the Buffalo Church and Cemeteries property), however, additional consultation would be required and additional archaeological investigation (including potentially additional mitigation and avoidance efforts) might be necessary.

Bibliography

Bevin, D. K. and J. V. Comer

1999 National Register of Historic Places Nomination Form Buffalo Church and Cemeteries (LE496). <http://www.hpo.ncdcr.gov/nr/LE0496.pdf>, accessed July 2017.

Joy, D.

2017 *Intensive Archaeological Survey and Evaluation, North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) Division 8 Project, TIP# U-5709, Widening of SR 1237 (Carthage Street) from SR 1152 (Fire Tower Road) to NC 42 (Wicker Street) in Sanford [Lee County, WBS# 50159.1.1, PA# 16-06-0025]*. Ms. On file, Environmental Analysis Unit, North Carolina Department of Transportation, Raleigh.

North Carolina State Historic Preservation Office (SHPO)

2017 HPOWEB GIS Service (General Audience). <http://gis.ncdcr.gov/hpoweb/>, accessed January 2017.

University of North Carolina at Chapel Hill (UNC)

2017 Research Laboratories of Archaeology Specimen Catalogue.

[http://rla.unc.edu/Collections/RLA_Specimen_Catalog_\(2393-2445\).pdf](http://rla.unc.edu/Collections/RLA_Specimen_Catalog_(2393-2445).pdf), accessed July 2017.

United States Department of Agriculture (USDA)

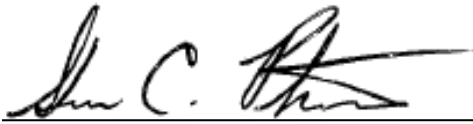
2017 Natural Resources Conservation Service Web Soil Survey.

<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed January 2017.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Appendix A
(Graphics) and B (Shovel Test Inventory) from Joy 2017.

Signed:



July 27, 2017

NCDOT ARCHAEOLOGIST

Date

APPENDIX D
RELOCATION REPORT



EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	50159.1.1	COUNTY	Lee	Alternate	3	of	3	Alternate
T.I.P. No.:	U-5709	Alt Title	ALT 3					
DESCRIPTION OF PROJECT:	Widening of SR 1237 (Carthage St.) from SR 1152 (Fire Tower Rd.) to NC 42 (Wicker St.)							

ESTIMATED DISPLACEDS					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	0	0	0	0	0	0	0	0	0	
Businesses	1	2	3	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale	
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0
					20-40M	0	150-250	0	20-40M	0
					40-70M	0	250-400	0	40-70M	0
					70-100M	0	400-600	0	70-100M	0
					100 UP	0	600 UP	0	100 UP	0
					TOTAL	0	0	0	0	0

ANSWER ALL QUESTIONS			REMARKS (Respond by number)	
Yes	No	Explain all "YES" answers.		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Will special relocation services be necessary?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?		
X		6. Source for available housing (list).		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing available during relocation period?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).		
		15. Number months estimated to complete RELOCATION? 24 months		

	9/5/18		09/05/2018
Right of Way Appraiser	Date	Relocation Coordinator	Date

APPENDIX E
START OF STUDY LETTER





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

The Honorable Amy Dalrymple
Chairman, Lee County Commissioners
1449 Dalrymple Farm Road
Sanford, North Carolina 27330

Dear Chairman Dalrymple:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the subject project. The project is included in the 2018-2027 North Carolina State Transportation Improvement Program (STIP), and is scheduled for right of way acquisition in State Fiscal Year 2019 and construction in State Fiscal Year 2021. The project is being developed using State funds under the North Carolina State Environmental Policy Act (SEPA.)

The proposed project is approximately 0.84 mile long and involves widening Carthage Street from Fire Tower Road to Wicker Street by adding a raised median and incorporating bike lanes in each direction, a multiuse greenway path on the east side of Carthage Street, a sidewalk on the west side, and roundabouts at the Fire Tower Road, Fields Drive, and Wicker Street. The attached figure shows the project location and study area.

Federal, state and local agencies are being contacted for their comments regarding this project. If you have any questions concerning the project, please contact Jeffrey L. Teague, PE, Division Project Manager, at (910) 944-2344 or by email at jlteague@ncdot.gov.

Sincerely,

DocuSigned by:

Alison W. Kluttz

9BA03A5230E54E1...

Leigh (Alison) W. Kluttz, PE, CPM
Division Project Development Engineer
NCDOT Highway Division 08

AWK/jlt
Attachment

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 8
902 N. SANDHILLS BLVD.
ABERDEEN, NC 28315

Telephone: (910) 944-2344
Fax: (910) 944-5623
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
902 N. SANDHILLS BLVD.
ABERDEEN, NC 28315



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. Felix Davila
FHWA Central Region
310 New Bern Avenue Suite 410
Raleigh, North Carolina 27601-1418

Dear Mr. Davila:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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The proposed project is approximately 0.84 mile long and involves widening Carthage Street from Fire Tower Road to Wicker Street by adding a raised median and incorporating bike lanes in each direction, a multiuse greenway path on the east side of Carthage Street, a sidewalk on the west side, and roundabouts at the Fire Tower Road, Fields Drive, and Wicker Street. The attached figure shows the project location and study area.

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Sincerely,

DocuSigned by:

Alison W. Kluttz

9BA03A5230E54E1...

Leigh (Alison) W. Kluttz, PE, CPM
Division Project Development Engineer
NCDOT Highway Division 08

AWK/jlt
Attachment

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 8
902 N. SANDHILLS BLVD.
ABERDEEN, NC 28315

Telephone: (910) 944-2344
Fax: (910) 944-5623
Customer Service: 1-877-368-4968

Location:
902 N. SANDHILLS BLVD.
ABERDEEN, NC 28315

Website: www.ncdot.gov



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. Phillip "Hal" Hegwer
Sanford City Manager
P.O. Box 3729
Sanford, North Carolina 27331

Dear Mr. Hegwer:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the subject project. The project is included in the 2018-2027 North Carolina State Transportation Improvement Program (STIP), and is scheduled for right of way acquisition in State Fiscal Year 2019 and construction in State Fiscal Year 2021. The project is being developed using State funds under the North Carolina State Environmental Policy Act (SEPA.)

The proposed project is approximately 0.84 mile long and involves widening Carthage Street from Fire Tower Road to Wicker Street by adding a raised median and incorporating bike lanes in each direction, a multiuse greenway path on the east side of Carthage Street, a sidewalk on the west side, and roundabouts at the Fire Tower Road, Fields Drive, and Wicker Street. The attached figure shows the project location and study area.

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Sincerely,

DocuSigned by:

Handwritten signature of Leigh (Alison) W. Kluttz in black ink.

9BA03A5230E54E1...

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SECRETARY

October 17, 2017

Mr. Gary Jordan
US FWS Eastern Region
P.O. Box 33726
Raleigh, North Carolina 27636-3726

Dear Mr. Jordan:

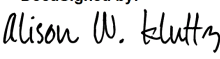
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STATE OF NORTH CAROLINA
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ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

The Honorable T. Chet Mann
Mayor, City of Sanford
P.O. Box 3729
Sanford, North Carolina 27331

Dear Mayor Mann:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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STATE OF NORTH CAROLINA
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GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. Patrick D. Molamphy
NCDOT Board of Transportation
902 N. Sandhills Blvd.
Aberdeen, North Carolina 28315

Dear Mr. Molamphy:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. David Montgomery
Lee County Planner
P.O. Box 3729
Sanford, North Carolina 27331

Dear Mr. Montgomery:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. Andrew Williams
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 28587

Dear Mr. Williams:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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ROY COOPER
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JAMES H. TROGDON, III
SECRETARY

October 17, 2017

Mr. Brian Wrenn
NC DWR
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Dear Mr. Wrenn:

SUBJECT: SR 1237(Carthage Street) Improvements, Sanford,
Lee County, WBS No. 50159.1.1, TIP Project U-5709

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Location:
902 N. SANDHILLS BLVD.
ABERDEEN, NC 28315

Maseman, Kristin

From: Teague, Jeff L <jlteague@ncdot.gov>
Sent: Tuesday, October 24, 2017 10:11 AM
To: Smith, Kenny; Maseman, Kristin; Eason, Brian
Cc: Kluttz, Alison W.
Subject: FW: [External] U-5709; SR 1237 (Carthage Street) Improvements in Sanford, Lee County

fyi

From: Jordan, Gary [mailto:gary_jordan@fws.gov]
Sent: Tuesday, October 24, 2017 10:07 AM
To: Teague, Jeff L <jlteague@ncdot.gov>
Subject: [External] U-5709; SR 1237 (Carthage Street) Improvements in Sanford, Lee County

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Jeffrey,

I have reviewed the submitted information regarding this project. The USFWS does not have any concerns for this project. Thank you for the opportunity to review.

In the future, please feel free to submit start of study letters as a pdf document via email to me.

Gary Jordan

Fish and Wildlife Biologist, Liaison to NCDOT
US Fish and Wildlife Service
P.O. Box 33726
Raleigh, NC 27636-3726

Phone: 919-856-4520 x.32

Fax: 919-856-4556

Email: gary_jordan@fws.gov

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Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.