

July 2018

Environmental Assessment / Finding of No Significant Impact

**U.S. 64 (11th Street)
From North Glenn Avenue to Progress Boulevard
Town of Siler City
Chatham County, North Carolina
WBS Number 54027.1.2
STIP Project No. U-5737**



Prepared for:



North Carolina Department of Transportation
Division 8

Prepared by:





US 64 CORRIDOR STUDY

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Prepared Pursuant to the North Carolina State Environmental Policy Act

Approved

7/16/2018 8:39:36 AM EDT

Date

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North Carolina Department of Transportation



US 64 CORRIDOR STUDY

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Document Prepared by Moffatt & Nichol



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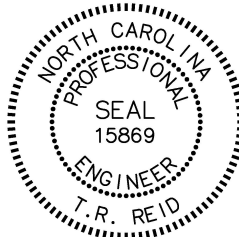
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Project Fact Sheet

Project Location:

Town of Siler City, Chatham County

Project Summary:

The North Carolina Department of Transportation (NCDOT) is proposing improvements to U.S. 64 (11th Street) from North Glenn Avenue to Progress Boulevard in Siler City, Chatham County, North Carolina. The proposed action is listed in the June 2018, NCDOT 2018 - 2027 State Transportation Improvement Program (STIP), as Project Number U-5737, and is state-funded. Right-of-way acquisition is programmed for Fiscal Year 2019. Construction is programmed for Fiscal Year 2020. This State Environmental Assessment / Finding of No Significant Impact (EA / FONSI) explains the need for the proposed project, summarizes its potential environmental impacts and benefits, and mitigation measures.

NCDOT welcomes your comments about this EA / FONSI.

Project Sponsor:

NCDOT Division of Highways – Division 8

NCDOT Project Manager:

Leigh (Alison) W. Kluttz, PE, CPM
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Document Availability:

This EA / FONSI is available at the following locations:

Wren Memorial Library
 500 N. 2nd Avenue
 Siler City, NC 27344

Town of Siler City – City Hall
 311 N. Second Avenue
 Siler City, NC 27344

NCDOT District 1
 300 Dot Drive
 Asheboro, NC 27204

NCDOT Highway Division 8
 902 N. Sandhills Boulevard
 Aberdeen, NC 28315

Comments:

Comments on this EA / FONSI can be made in writing by sending a letter or email to Julie Flesch-Pate at the address below. Written comments are due by **August 17th, 2018** to:

NCDOT
 C/O Moffatt & Nichol
 ATTN: Julie Flesch-Pate
 4700 Falls of Neuse,
 Suite 300
 Raleigh, NC 27609



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PROJECT COMMITMENTS

Environmental Assessment / Finding of No Significant Impact For

NCDOT STIP # U-5737

U.S. 64 (11th Street)
From North Glenn Avenue to Progress Boulevard
Town of Siler City
Chatham County, North Carolina
WBS Number 54027.1.2

This "Green Sheet" identifies the special commitments to avoid, minimize, or mitigate project related impacts. Any commitments or mitigating measures not already developed during the design phase of project development are listed by the responsible NCDOT unit.

NCDOT-Hydraulic Design Unit:

The Hydraulics Unit will coordinate with the N.C. Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement with FMP (dated April 22, 2013), or whether approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required.

NCDOT Geotechnical Unit/GeoEnvironmental Section

The Geotechnical Unit/GeoEnvironmental Section will further assess the affected properties for hazardous materials and make right-of-way acquisition recommendations accordingly. Should hazardous substance sites be discovered during construction activities, measures to minimize and/or mitigate potential impacts would be implemented.

NCDOT-Highway Division 8:

NCDOT will coordinate with the Town of Siler City regarding cost sharing for sidewalks, multi-use paths, median fill or landscaping. Municipal Agreements will be prepared, as applicable, prior to project construction.

NCDOT will continue coordination regarding crosswalk locations and treatments for pedestrian and bicyclist safety.

NCDOT will manage invasive plant species as appropriate.

NCDOT will investigate potential on-site stream mitigation opportunities for the preferred Alternative 4. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Division of Mitigation Services.

It is recommended that a detailed study of the preferred alternative should be performed to field verify the hazardous waste sites and identify unknown sites.

Detailed information on specific utilities will be identified by the NCDOT Location & Surveys group prior to final design and construction.

To minimize and mitigate the impacts of truck headlights as well as brake and engine sounds, existing trees and other vegetation screening these residences from the turnaround should be retained to the extent practicable. It is also recommended that a solid fence or similar visual barrier at least six feet in height be placed near the property line to further minimize light and noise intrusion.



US 64 CORRIDOR STUDY

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LIST OF ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AC	Acres
BMP	Best Management Practices
CIA	Community Impact Assessment
CLOMR	Conditional Letter of Map Revision
CTP	Comprehensive Transportation Plan
EA	Environmental Assessment
EJ	Environmental Justice
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
HOV	High Occupancy Vehicle
LEP	Limited English Proficiency
LF	Linear Feet
LOIM	Local Officials Information Meeting
LOMR	Letter of Map Revision
LOS	Level of Service
NAAQS	National Ambient Air Quality Standards
NCDOT	North Carolina Department of Transportation
NCSAM	North Carolina Stream Assessment Method
NCWAM	North Carolina Water Assessment Method
NRTR	Natural Resources Technical Report
STIP	State Transportation Improvement Program
TDM	Transportation Demand Management
TSM	Transportation Systems Management
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UT	Unnamed Tributary

1.0 DESCRIPTION OF PROPOSED ACTION

1.1 GENERAL PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) is proposing improvements to U.S. 64 (11th Street) from North Glenn Avenue to Progress Boulevard in the Town of Siler City (Siler City), Chatham County, North Carolina. The proposed action (the project) involves access management improvements, to include converting the existing center two-way left-turn lane to a median. It is anticipated that the project will require acquisition of right-of-way. The project also proposes new sidewalks and crosswalks in various locations, increasing mobility and safety for pedestrians in the corridor. The project is approximately three miles in length. Map 1 in the Maps section of this document illustrates the project study area.

The project is listed in the June 2018, NCDOT 2018-2027 State Transportation Improvement Program (STIP), as project number U-5737 and is state funded. Right-of-way acquisition is programmed for Fiscal Year 2019. Construction is programmed for Fiscal Year 2020.

This State Environmental Assessment / Finding of No Significant Impact (EA / FONSI) has been prepared in accordance with the North Carolina State Environmental Policy Act (NC Environmental Policy Act, 1971), which requires state agencies to review and report the environmental effects of all activities that involve an action by a state agency, an expenditure of public monies or private use of public land, and the potential negative environmental effect upon natural resources, public health and safety, natural beauty, or historical or cultural elements of the state. (North Carolina Department of Environmental Quality, 2018)

1.2 PURPOSE AND NEED FOR THE PROJECT

This section established the purpose and need for the project and identifies other project goals and objectives.

1.2.1 Need for Improvement

The need for the project is to address the following issues:

- Safety
- Mobility
- Current and Future Capacity

Overall traffic congestion and the need for improved access management contribute to a notable crash frequency and contributing safety issues along U.S. 64. Total crash rates along

Level of Service

LOS A: Describes primarily free flow conditions.

LOS B: Represents reasonably free flow conditions.

LOS C: Provides for stable operations, but flows approach the range in which small increases will cause substantial deterioration in service.

LOS D: Borders on unstable flow.

LOS E: Describes operation at capacity.

LOS F: Describes forced or breakdown flow

Source: Level of Service – Connect NCDOT

Figure 1 Level of Service

the project route are higher than the statewide average crash rate and just below the critical crash rate.

Current weekday AM and PM peak-hour traffic conditions on U.S. 64 are operating at unacceptable levels (Levels of Service [LOS] E and F; see Figure 1). Daily traffic demand in numerous locations along the project route equals or exceeds the design capacity.

1.2.2 Purpose of the Project

The primary purpose of the proposed project is to address the unique safety issues caused by the lack of access management and traffic flow issues along U.S. 64 in Siler City. This project will also improve mobility by improving access management within the project area. The project would also be expected to relieve present and future traffic congestion, and operate at acceptable Levels of Service (LOS D or greater).

In summary, the purpose of the proposed roadway improvement is to:

- ✓ Improve safety by reducing vehicle conflict points
- ✓ Enhance traffic flow and mobility
- ✓ Provide acceptable Levels of Service

1.2.3 Other Goals and Objectives

In addition to addressing the primary need for the project, the potential exists for other goals and objectives to be achieved through project implementation. The following project-related elements were developed through an extensive stakeholder involvement process and are considered to be desirable project outcomes:

- Enhance pedestrian and bicycle facilities within the project area;
- Improve connectivity between the U.S. 421 and North Glen Avenue corridors in Siler City;
- Improve emergency response times within the study area due to improved traffic flows and reduced delays;
- Promote greater safety for pedestrians and bicyclists; and
- Support local comprehensive land use and transportation planning.

1.3 PROJECT BACKGROUND AND STATUS

U.S. 64 is the primary east-west route through Siler City in Chatham County. This highway connects Siler City to Asheboro, Ramseur, and Pittsboro. According to Siler City's website, U.S. 64 is ranked at the top of the list of projects considered to be the "highest priorities" in Siler City. (Town of Siler City, 2018)

The project is meaningful from both a local and regional perspective. Locally, U.S. 64 serves concentrated and thriving existing businesses and the local community. Regionally, the portion of U.S. 64 proposed for improvement is a part of North Carolina's Strategic Transportation Corridor network. This statewide transportation network supports businesses with heavy reliance on commodity distribution. Regional transportation connectivity is recognized by Siler City's leadership as a vital component to ongoing economic sustainability.



Much of U.S. 64 through Siler City is zoned for commercial and residential use. The existing corridor is developed with driveways, business entrances, and side streets at controlled and uncontrolled intersections. This mode of development over the past decade, coupled with increasing volumes of vehicular traffic, has led to control-of-access issues. These issues have notably reduced the traffic flow along U.S. 64, especially at peak travel times. This project is anticipated to substantially increase the mobility, safety, and connectivity of travelers along the U.S. 64 corridor in Siler City.

The Chatham County Comprehensive Transportation Plan (CTP), adopted in August 2016, recommends that U.S. 64 be upgraded to improve traffic flow within the project limits, and to address local safe pedestrian crossing concerns. The plan recommended upgrading U.S. 64 (11th Street) in Siler City to a four-lane divided boulevard facility with accommodations for bicycles as well as sidewalk facilities. The Local ID is CHAT0012-H.

The project is also included in the Chatham County Transportation Advisory Committee's 2016-2019 Strategic Plan (July 2016). This plan serves as a guide to assessing, anticipating, and addressing transportation issues to create a sustainable transportation system that offers access to various modes of transportation for people and goods.

1.4 OTHER STIP PROJECTS IN THE AREA

There are two other transportation projects listed in the NCDOT 2018-2027 STIP that are to be constructed in 2020. Both are bicycle and pedestrian improvement projects that connect to U.S. 64 within the limits of the proposed project. Other STIP projects are shown in Table 1 and shown on Map 2 of the Maps section of this document.

Table 1 Other Transportation Improvement Projects

STIP Number	Description	Construction
EB-5734 (Bike and Ped)	State Route 2103 (East Raleigh Street) from South 7 th Avenue to U.S. 64 (11 th Street) in Siler City. Construct sidewalk on south side from South 6 th Avenue to South 10 th Avenue, and construct multi-use path on south side from South 10 th Avenue to U.S. 64 (11 th Street)	2020
EB-5871 (Bike and Ped)	State Route 1107 (East Third Street) from North 5 th Avenue to U.S. 64 (11 th Street) in Siler City. Construct sidewalk on south side.	2020

Source: NCDOT STIP Map:

<http://ncdot.maps.arcgis.com/home/webmap/viewer.html?webmap=cb02f4f828974670ad01bb83be91b18c>

2.0 PROJECT ALTERNATIVES

A reasonable range of project alternatives, including the No-build option were assessed through a screening process. The screening process established project criteria which aided in the determination of which project alternatives should to be carry forward for detailed study. Based on a tiered approach, extending over early-stage alternative "concept" considerations to project alternatives, each concept and alternative was assessed independently for its ability to meet project purpose and need. Alternatives that did not meet the purpose and need for the project were eliminated from further consideration. Those that did meet the purpose and need were

considered further based on other factors deemed relevant to evaluating, in a comparative manner, which alternative was preferred.

2.1 CONCEPT SCREENING FOR THE PROPOSED PROJECT

The initial screening included alternative “concepts”. Each of the following concepts were screened early in the project development process to determine if they had the potential to meet the project’s purpose and need.

- No-build
- Transportation Systems Management (TSM)
- Build Concepts
 - Build – Existing Location
 - Build – New Location

The screening criteria consisted of a set of questions used in determining consistency with the project’s purpose and need. Those questions were as follows:

- Is the alternative concept able to meet future capacity demand and improve mobility along U.S. 64 within the project area?
- Is the alternative concept able to notably improve safety on U.S. 64 within the project area?
- Is the alternative concept able to improve access management within the project area?

Concepts were eliminated from further consideration if they did not have the potential to meet the purpose and need for the project. Table 2 presents the results of the alternative concept screening evaluation.

Table 2 Ability of Concepts to Meet the Project's Need

Alternative Concepts	Improves Existing Corridor Safety	Improves Existing Corridor Mobility	Capacity Enhancement
No-build	X	X	X
Transportation Systems Management	X	X	X
Build-New Location	X	✓	✓
Build-Existing Location	✓	✓	✓

Key: X no; ✓ yes.

The **“No-build” concept** does not meet the purpose and need of the project to improve traffic flow and safety. It was, however, carried forward as a point of comparison for the alternatives that meet the project’s purpose and need to demonstrate compliance with NC Environmental Policy Act.

The **Transportation Systems Management (TSM) concept** includes those activities which maximize the efficiency of the present system. Items such as addition of turning lanes, striping, signing, signalization, High Occupancy Vehicle (HOV) lanes, and minor realignment are examples of TSM improvements. To a degree, this TSM work has been incorporated over many years as NCDOT has sought to maintain or improve LOS in this corridor. The current five-lane facility has reached the point that TSM activities no longer meet the needs of the traveling public. That said, elements of TSM are to be incorporated into the “Build” alternative where

warranted and beneficial. This alternative concept was not carried forward for more detailed project development and environmental review due to it not meeting the purpose and need of the project.

While a **Build-New Location concept** may reduce the existing and future traffic flow on U.S. 64, it would not prevent crossing traffic conflicts along U.S. 64, nor would it improve transportation safety within the existing project area. It would simply delay the point of critical need until later. Therefore, the “New Location” alternative concept was not carried forward for more detailed project development and environmental review due to not meeting the purpose and need for the project.

The **Build-Existing Location concept** would meet future capacity demand needs through the design year of 2040. Design components of the Build-Existing Location alternative concept would seek to improve traffic flow and improve safety along the project area by reducing vehicle conflict points, and through better control of driveway access points. This concept was therefore carried forward in project development as a project alternative.

2.2 PROJECT ALTERNATIVES

Four project alternative were analyzed following the initial screening, the No-build and three Build-Existing Location Alternatives. This next level of screening took into consideration not only each alternative’s ability to meet the purpose and need of the project, but also considered other factors deemed relevant to the overall success of the project, such as the benefits and advantages offered by each. An alternative that meets purpose and need may not be identified as the preferred alternative in instances where it does not offer the benefits or advantages that another alternative does.

2.2.1 No-build – Alternative 1

As previously described, the “No-build” Alternative does not meet the purpose and need of the project to improve traffic flow and safety. It was, however, carried forward as a point of comparison for the build alternatives that meet the project’s purpose and need.

2.2.2 Build-Existing Location Alternatives – Alternatives 2, 3 & 4

Right-of-way constraints within the project corridor and adjacent to the roadway, include residences and businesses, intersecting streets and highway ramps, and the existing bridge over Chatham Avenue. Due to the large number of constraints, all three Build-Existing Location Alternatives utilized a best fit design that minimizing the need for project design to extend outside existing right-of-way limits.

Three corridor configurations were studied with potential to suit the project’s purpose and need. These configurations were:

- Upgrade, with conventional intersections, and a 23-foot to 30-foot wide raised median;
- Upgrade to a Superstreet with a 23-foot to 30-foot wide raised median along the U.S. 64 corridor; and
- A combination of the two alternatives above (hybrid).

Raised medians are to be implemented through most of the project corridor to enhance safety and to improve access management. According to the Federal Highway Administration’s Desktop Reference for Crash Reduction Factors (FHWA-SA-08-011, September 2008), raised

medians have been found to reduce pedestrian crashes up to 46 percent. A Depressed median is being applied in project design at the U.S. 64 and Martin Luther King Jr. intersection to allow for easy passage by emergency vehicles.

Following a meeting with Siler City planning staff, the project's typical section was revised to minimize possible right-of-way and environmental impacts by minimizing median width to 23-foot (minimal). Additionally, outside travel lanes were also minimized to 12-foot with parallel sidewalks along the project corridor to reduce potential right of way and environmental impacts. Siler City ordinances allow for the use of bicycles on sidewalks.

The key to the development of a project alternative was the ability to meet current and 2040 anticipated traffic demand, while adding a median to increase safety and traffic flow.

Alternatives 2, 3, and 4 all feature upgrades to the existing road, predominantly within the original footprint, thereby avoiding or minimizing potential impacts.

Alternative 2 – Traditional Alternative (Existing Intersections Improvement and 23-foot Median)

This alternative consists of improving U.S. 64 on its existing alignment, and upgrading intersections, adding a median, turning accommodations, intersection closures, signaling, and pedestrian facilities.

A project-specific traffic analysis indicates that the implementation of the conventional street configuration with a 23-foot wide median within the project area would be expected to result in increased traffic congestion and additional delay at signalized intersections under future year traffic conditions, yet still operate at acceptable levels. The additional turn lanes needed to assure the improved traffic flow would require notable right-of-way needs at the intersections. Likewise, the allowance for left turning movements reduces the safety improvement desired by introducing possible vehicle conflict points during turning movements. This alternative is not the best design in terms of traffic functionality and would not provide the safety enhancements of Alternatives 3 or 4.

Alternative 3 - Superstreet Alternative (Superstreet concept and 23-foot Median)

This alternative consists of improving U.S. 64 to a Superstreet design on its existing alignment. With a Superstreet design, side-street traffic is redirected from going straight through or left at a divided highway intersection. In most instances, side-street traffic must turn right, but can then access a U-turn to proceed in the desired direction.

Utilization of Superstreet design is expected to provide safety benefits beyond those associated with a traditional intersection design in that it has the capacity to move greater volumes of traffic efficiently and safely through the same arterial route as conventional arterials, but with minimal disruptions to the surrounding environment and businesses. Additionally, the traffic analysis suggests that Superstreet design components would reduce the number of traffic conflict points along the corridor and the delay of queues expected at un-signalized intersections along the project corridor.

The Superstreet concept provides an effective alternative along heavily traveled, regional arterials in areas with commercial and residential growth (such as U.S. 64 in the project area). The design concept is contingent upon a series of features that reduce potential conflict points while maintaining traffic flow, resulting in:

- ✓ Increased safety by reducing conflict points at major crossovers
- ✓ Time savings from simplified signal phasing
- ✓ Enhanced signal coordination
- ✓ Dedicated U-turn lanes for efficiency

Intersections considered and evaluated for Superstreet improvements include the same list as Alternative 2 above.

It was noted in the development and traffic analysis of this alternative that while a Superstreet is an efficient design, it may not be the best design in terms of traffic functionality for all of the intersections in the U.S. 64 corridor in the study area. Therefore, it was decided to eliminate this option from further consideration and to proceed forward with the study of a combination of the two alternatives, utilizing the better of the design options for each location. This was labeled the “Best-Fit Hybrid Alternative”, and it is described below.



A Best Fit Alignment is defined as road widening design that utilizes symmetrical or asymmetrical widening alignments (or a combination of both) in order to provide a cost-effective alternative that avoids and minimizes impacts to the natural and human environment.

Source: NEPA/Section 404 Merger Process, Practitioner Training

2.3 PREFERRED ALTERNATIVE

NCDOT has selected a preferred alternative for improvements to US 64 in Siler City.

2.3.1 Alternative 4 – Best-Fit Hybrid Alternative with 23-foot Median (Preferred)

This alternative provides safety benefits at a greater level than Alternative 2 or Alternative 3, while minimizing the need to extend design outside right-of-way limits. It consists of improving U.S. 64 to a best-fit hybrid alignment of a Superstreet design and conventional intersection-improvement design, on existing alignment. This alternative serves the project’s purpose and need more efficiently than the other alternatives. Therefore, it was decided to carry this alternative forward into detailed environmental review and preliminary design utilizing the better of the design options for each location.

This best-fit hybrid of intersection upgrades and Superstreet design treatments allows improvements to U.S. 64 to meet the purpose and need of the project, increasing both safety and traffic flow. Evaluation of the build alternatives indicated that greater mobility would be achieved with the incorporation of proposed Superstreet concepts. The utilization of a raised median along U.S. 64 will reduce the number of conflict points that exist today and maintain the overall traffic level of service along the corridor during the life of the project (i.e., more than 25 years).

2.3.2 Design Criteria

Design criteria developed for the project alternatives are shown in Table 3.

Table 3 Design Criteria

Factor	Classification
Facility Type / Functional Classification	Urban Principal Arterial
Terrain Type	Rolling
Design Speed	50 miles per hour (miles per hour)
Posted Speed	45 mph
Right-of-Way Width	As Needed
Control of Access	None
Lane Width	12-feet
Sidewalks (Yes / No)	Yes
Bicycle Lanes (Y/N)	No
Median Width	Varies (23-foot maximum)
Typical Section	Curb & Gutter
Structures	72-foot maximum

Land available in which project design can be expanded beyond existing right-of-way limits is limited due to adjacent land development in either side of the road. The aim of the project is to improve an existing five-lane undivided facility and to provide, where feasible, improved connectivity of pedestrian facilities. Localized right of way acquisition is anticipated for this project. Figure 2 illustrates the Town-preferred typical sections. Figure 3 displays the project profile along the U.S. 64 study corridor.

ROUTE 64 US 64 CORRIDOR STUDY

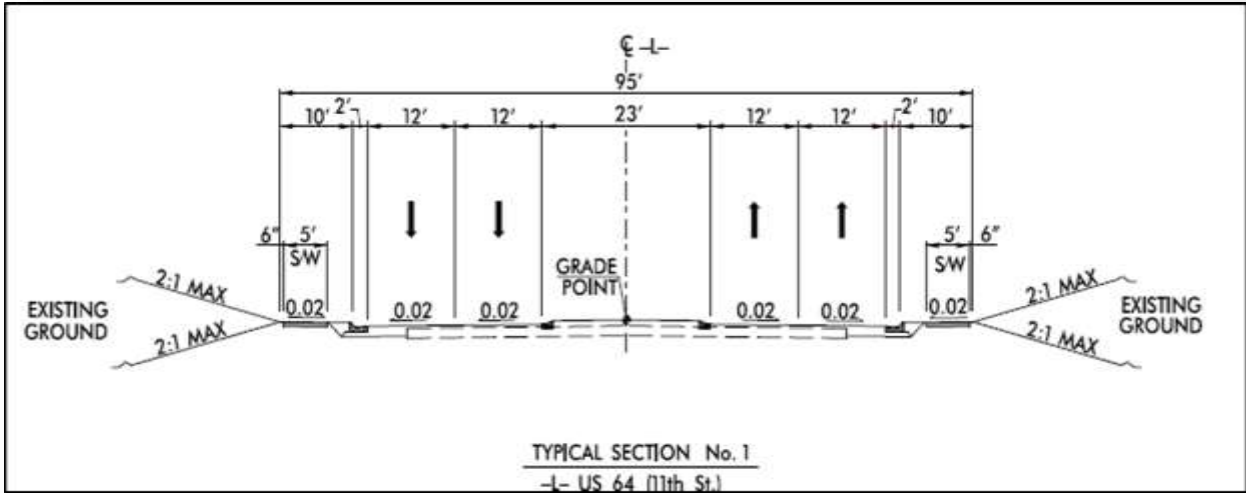


Figure 2 Typical Section



Figure 3 Project Illustration #1

2.3.3 Changes to Intersection Roadways

Proposed intersection design changes include the following:

- Walmart Supercenter Entrance Drive – Signalized, added bulb-out for U-turns
- Pearlman Teague Road/Waste Treatment Plant Road – left-overs and islands
- U.S. 421 – Channelization and replacement of signal on western ramps
- Loves Creek Church Road – Right-in, right-out
- East Raleigh Street – Upgraded Traffic Signal and turn lane
- East Third Street – Upgraded Traffic Signal
- North Avenue – Superstreet
- Johnson Avenue – Bulb-outs
- Pine Glades Avenue – Right-in, right-out
- Martin Luther King Jr. Boulevard – Upgraded Traffic Signal, left-overs, depressed median for emergency vehicle access, pedestrian crossings
- North Fifth Avenue – Right-in, right-out
- Shepherd Avenue – Right-in, right-out
- Brook Avenue – Cul-de-sac. Bulb-outs
- Sears Avenue – Right-in, right-out
- Greensboro Avenue – Upgraded Traffic Signal, added left turn lane, pedestrian crossings
- North Second Avenue – existing grade separation
- North Cottage Grove Avenue – Right-in, right-out, cul-de-sac, and diverted ramp.
- North Dogwood Avenue – Right-in, right-out
- North Glenn Avenue/Perry Avenue – full access non-signalized intersection with channelization
- North Chatham Avenue – existing bridge
- Numerous commercial, industrial and residential driveways

These proposed improvement are illustrated in Map 8a and Map 8b in Appendix A of this report.

2.4 UTILITIES

Construction of the project would likely require some degree of adjustment, relocation, or modification to existing public utilities. Multiple utilities are located within the project study area, including water, electric sewer, telephone and cable television. Detailed information on specific utilities will be identified by the NCDOT Location & Surveys group prior to final design and construction.

2.5 ABILITY TO IMPROVE MOBILITY

A preliminary traffic analysis for the existing conditions (2016) and design year (2040) was completed as part of the project's development using the proposed 23-foot median typical section with both traditional and Superstreet design components. Results of the analysis indicated that the incorporation of Superstreet design components (Alternatives 3 & 4) would be expected to provide adequate LOS operations (greater than LOS D) for the projected 2040 traffic volumes. More detailed information on the preliminary traffic analysis can be found in the *Technical Operations Analysis Technical Memorandum* (Ramey Kemp and Associates, Inc., 2017).

It is noteworthy that although the hybrid design has been identified as the preferred alternative, the conventional intersection design with a 23-foot wide median is also expected to provide adequate operations for the projected 2040 traffic volume.

2.6 ABILITY TO IMPROVE SAFETY

Vehicle classes using U.S. 64 include automobiles, motorcycles, tractor trailers, buses, and recreational vehicles (e.g. motorhomes). The current traffic volumes and the various mix of vehicles using U.S. 64 create a high potential for crashes and substantial traffic delays. The project should address the unique safety issues by reducing the number of traffic conflict points at intersections and improved access of management throughout the project corridor. Table 4 provides a summary of crash data for the project corridor.

Table 4 Crash Data for the Project Corridor

Categories	Number of Crashes	Crash Rate	Statewide* Average Crash Rate	Critical** Crash Rate
Total	244	305.75	279.51	310.94
Fatal	1	1.25	1.32	4.06
Non-Fatal	75	93.98	90.26	108.39
Night	47	58.89	51.76	65.64
Wet	36	45.11	46.54	59.74

* Compared to Statewide Average Crash rates for urban United States routes with 4+ lanes with a continuous left turn lane (2012-2014).

**Based on the statewide average crash rate (95% level of confidence). The critical crash rate (a statistically derived value against which a calculated crash rate can be compared to see if the rate is above an average far enough so that something besides chance must be the cause) is used to denote statistical significance.

The U.S. 64 corridor through Siler City has similar 5-year crash statistics to other comparable roadway facilities in the State. The crash analysis referenced in the 5-year crash rate comparison identified 244 crashes (between years 2012-2014), and a crash rate of 305.75 with the statewide average at 279.51 for the project area. The U.S. 64 corridor also exceeded statewide averages in the crash categories of Non-Fatal Injury, and crashes occurring at night as indicated in the Table 4 above. As stated in the Project Need section of this report, total crash rates along the project route are higher than the statewide average crash rate and just below the critical crash rate.

The Crash Heat Map shown on Map 4 of the Maps section of this document notes the locations where crashes have occurred most frequently, and are likely to occur in the future. The following locations are highlighted for more frequent crashes:

- U.S. 421 Ramps
- East Raleigh Street
- Martin Luther King Jr. Boulevard / Siler City Snow Camp Road
- Greensboro Avenue

These intersections show a unique crash history, and are a large part of the impetus for this project.

Enhancing pedestrian and bicycle safety was identified as a desired outcome on this project (see Figure 4). NCDOT has coordinated extensively with Siler City officials to identify locations and treatments for crosswalks and ways to improve the connectivity of existing sidewalk facilities. Based on input received and the application of NCDOT's policies and guidelines on the implementation and operation of pedestrian facilities, it is anticipated that the project will promote safer pedestrian movement within the project area.



Figure 4 Pedestrian Crossings

2.7 COST ESTIMATE

For funding and planning purposes, the total project cost is derived from cost estimates of right-of-way acquisition, utility construction and relocation, and construction activities. Project cost estimating evolves throughout the project development process. At this stage of project development, there was no appreciable difference in overall cost amongst the Build Alternatives. The cost estimate for the project is summarized in Table 5. The estimate details are provided in Appendix A of this document.

Table 5 Cost Estimates

Type	NCDOT STIP (2018-2027)*	Build Alternatives **, *** (Alt 3 & 4) with 23-foot Median
Right-of-Way	\$244,000	\$2,462,500
Utilities	\$29,000	\$1,266,020
Construction	\$9,780,000	\$12,900,000
Total Cost	\$10,053,000	\$16,628,520

*Source: NCDOT 2018-2027 STIP.

** Source: NCDOT-Roadway Design Unit (estimate completed 4/2018); NCDOT-Right-of-Way Unit (estimate completed 3/2018); NCDOT-Utility Unit (estimate completed 4/2018).

*** Cost estimates were based on those alternatives still considered to be viable options during the project development process.

3.0 ENVIRONMENTAL EFFECTS

Under SEPA, the analysis of environmental conditions is directly related to the expected environmental consequences of a proposed project and its alternatives. In some instances, the information presented in this section is a summary of information that was previously analyzed in more detailed technical reports, in which case those respective technical studies are noted by reference. Copies of these technical studies are available by contacting NCDOT. Map 3 provided in the Maps section of this document illustrates the environmental features identified within the project study area.

3.1 SUMMARY OF ANTICIPATED PROJECT RELATED EFFECTS

SEPA (NC Environmental Policy Act, 1971) requires that the alternatives analysis address those areas and the characteristics of the environment having the potential to be affected, either beneficially or adversely, by the proposed action. Locations and resources within the project study area having no potential to be affected need not be analyzed. The analysis of environmental conditions includes areas and lands that might be affected, as well as the natural, cultural, and socioeconomic resources they contain or support.

SEPA requirements are met in this section by identifying the important characteristics of the project area and discussing the potential effects on the environment of project alternatives, including the No-build option (Alternative 1). A summary matrix is provided below (Table 6) to allow for side-by-side comparison of effects associated with Build Alternative 1 – No-build, Alternative 2– Traditional Alternative, and Alternative 4 – Best-Fit Hybrid Alternative. Alternative 3 was excluded from further study due to it being combined to create the Hybrid Alternative.

Table 6 Summary of Environmental Effects

Environmental Resources	No- build Alternative (Alternative 1)	Traditional Alternative (Alternative 2)	Best Fit Hybrid Alternative (Alternative 4)
Jurisdictional Streams	None or negligible	3 linear-feet	186 linear feet
Jurisdictional Wetlands	None or negligible	None or negligible	None or negligible
Terrestrial Habitat	None or negligible	0.18 acres	0.90 acres
Federally Protected Species	None or negligible	None or negligible	None or negligible
Soils	None or negligible	None or negligible	None or negligible
Cultural Resources	None or negligible	None or negligible	None or negligible
Neighborhoods / Communities	None or negligible	Positive	Positive
Relocations	None or negligible	None or negligible	None or negligible
Environmental Justice	None or negligible	None or negligible	None or negligible
Pedestrian Facilities	None or negligible	Positive	Positive
Public facilities	None or negligible	None or negligible	None or negligible
Air Quality	None or negligible	None or negligible	None or negligible
Business	None or negligible	Positive, Negative	Positive, Negative
Land Use Zoning and Development	None or negligible	Positive	Positive
Hazardous Materials	None or negligible	Negative	Negative

3.2 NATURAL RESOURCES

This section describes potential environmental consequences to the natural resources (i.e. Waters of the United States, Threatened and Endangered Species, and terrestrial communities). The following sub-sections describe existing conditions found within the study area, and describe any potential effects associated with Alternatives 1, 2 and 4. Additional detailed existing conditions information is available in the *Natural Resources Technical Report* (NRTR) (M&N, 2017). Table 7 provides a summary of potential effects to natural resources as described in the following sub-sections.

Table 7 Potential Natural Resources Effects*

Feature	No- build Alternative (Alternative 1)	Traditional Alternative (Alternative 2)	Best Fit Hybrid Alternative (Alternative 4)
Natural Environment			
Jurisdictional Stream (number of crossing/Linear Foot (LF) of impacts)	0 LF	~3 LF	~186 LF
Jurisdictional Wetlands (acres)	0 acres	0 acres	0 acres
Terrestrial Habitat (acres)	0.15 acres mixed mesic hardwood forest 27.18 acres maintained disturbed	0.18 acres mixed mesic hardwood forest 35.98 acres maintained disturbed	0.90 acres mixed mesic hardwood forest 43.76 acres maintained disturbed
Federally Protected Species			
Bald eagle	No effect**	No effect	No effect
Cape Fear shiner	No effect	No effect	No effect
Red-cockaded woodpecker	No effect	No effect	No effect
Harperella	No effect	No effect	No effect

*Impacts based on functional roadway design.

**No effect for the Federally Protected Species above due to suitable habitat not occurring within the project study area.

3.2.1 Biotic Resources

Biotic resources include terrestrial and aquatic communities. This section describes the biotic communities found in the project study area, the relationships between fauna and flora within these communities, and the potential impacts associated with the implementation of the project.

The composition and distribution of biotic communities throughout the project study area are reflective of the topography, soils, hydrology, and past and present land uses.

3.2.1.1 Terrestrial (Natural) Communities

The main terrestrial communities found in the project study area include maintained/disturbed and mixed mesic hardwood forest. More information on the terrestrial community types and locations in the project study area are provided in the NRTR. Anticipated impacts to each terrestrial community type by alternative are provided in Table 8 and are shown on Map 5 in the Maps section of this document.

Table 8 Terrestrial Communities

Community	No- build Alternative (Alternative 1)	Traditional Alternative (Alternative 2)	Best Fit Hybrid Alternative (Alternative 4)
Maintained / Disturbed	0.00 Acres	0.00 Acres	0.00 Acres
Mixed Mesic Hardwood Forest	0.15 Acres	0.18 Acres	0.90 Acres

Terrestrial communities would be impacted by construction as a result of grading and paving that is associated with the project. The project study area is in a disturbed state from decades of farming and development that resulted in clearing activities. Many of the plant communities within the area are fragmented by previous human activity. Project impacts from the construction of any build alternative would be limited to areas encompassed by the right-of-way needs (slope stakes limits plus 40-foot buffer) for the project. Habitat impacts would occur during clearing and grubbing for construction or be altered as a result of construction.

Temporary fluctuation in populations of animal species that utilize terrestrial areas is anticipated during the course of construction. Slow-moving, burrowing, and/or subterranean organisms would be directly impacted by construction activities, while mobile organisms would be displaced to adjacent communities. Competition within the adjacent communities may affect the populations of relocated organisms by either increasing or decreasing competitive pressure on the individuals inhabiting the area. These impacts will be minimized as much as possible by restricting land clearing and construction operations within the project right-of-way. Off-site staging and stockpiling areas will be located to impact the least amount of natural habitat as possible. Stockpiling and staging areas will be revegetated after construction, which could provide replacement habitat for some species.

3.2.1.2 Invasive Species

Four species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area. The species identified were Chinese privet (Threat), Japanese stilt grass (Threat), multiflora rose (Threat), and Japanese honeysuckle (Moderate Threat). NCDOT will manage invasive plant species as appropriate.

3.2.2 Water Resources

All streams and wetlands found within the project area have been classified as jurisdictional “Waters of the United States” (see Map 6 Pages 1-3).

Fish monitoring data is not available for the project study area.

No designated anadromous fish waters or primary nursery areas are present in the project study area.

No streams within the project study area are designated as trout water by the North Carolina Wildlife Resource Commission.

No streams within the project study area are included in the North Carolina 2014 Final 303(d) List of Impaired Waters due to sedimentation or turbidity.

3.2.3 Jurisdictional Issues

Waters of the United States include surface waters and wetlands (inundated or saturated areas that support vegetation typically adapted to wet conditions) as defined in 33 Code of Federal Regulations (CFR) 328.3. Impacts to Waters of the United States fall under the jurisdiction of the United State Army Corps of Engineers (USACE) through Section 404 of the Clean Water Act (CWA) (33 United States Code [USC] 1344) and under the jurisdiction of the North Carolina Department of Environmental Quality Division of Water Resources through the Section 401 Water Quality Certification Process (NC General Statutes Chapter 143 Article 21, Part 1).

Two wetlands were identified, one in the westernmost portion of the study area and the other near the 421 interchange. These wetlands are relatively small and not immediately next to U.S. 64. Therefore, impacts to these wetlands are not anticipated.

A detailed analysis of the project’s impacts to CWA Waters of the United States can be found in the NRTR.

All streams, wetlands, and pond in the project area are within the Cape Fear River Basin (United States Geological Survey (USGS) Hydrologic Unit 03030003). Streams identified are unnamed tributaries that drain to either Loves Creek or Rocky River. Streams are relatively small in size, with banks ranging in height from 1 foot to 5 feet, ranging in width from 3 feet to 8 feet, ranging in depth from 6 inches to 12 inches, channel beds consisting of small particles, slow to moderate velocity, and a majority being slightly turbid. The streams identified total 4,547 feet and are classified as intermittent or perennial. Two wetlands were identified totaling 0.08 acres and are classified as headwater forest. One open water pond was identified, totaling 1.25 acres.

Impacts to jurisdictional resources are provided in Table 9 and shown in Figure 5. Alternative 4 has the potential to impact a greater amount of jurisdictional stream resources due to the need to adjust the location of a U-turn bulb to minimize right-of-way impacts that would have included a residential relocation.

USACE, NCDWR, and North Carolina Stream Assessment Method (NCSAM) stream forms for each stream, as well as USACE wetland delineation forms and North Carolina Wetland Assessment Method (NCWAM) wetland rating forms for each wetland, can be found in the NRTR. Jurisdictional areas identified in the study area were verified by Andy Williams of the

U.S. Army Corps of Engineers (USACE) and April Norton of North Carolina Division of Water Resources (NCDWR) on December 11, 2017. Map 6 of the Maps section of this document illustrates open waters and wetland locations identified during the filed investigation and record searches conducted as part of the environmental review.

Table 9 Potential Jurisdictional Resources Impacts

Stream Name	Map ID	Classification	No- build Alternative (Alternative 1) (LF)	Traditional Alternative (Alternative 2) (LF)	Best Fit Hybrid Alternative (Alternative 4) (LF)
UT to Rocky River	SE	Intermittent	0	0	21
UT to Rocky River	SF	Intermittent	0	0	43
UT to Rocky River	SG	Perennial	0	3	122

3.2.3.1 Avoidance and Minimization

Considerations made during project development and preliminary design included minimization of median width and travel lane width to remain as close to existing right-of-way boundaries as feasible.

Minimization also includes the examination of appropriate and practicable steps to reduce adverse impacts to streams and wetlands. General steps that should be implemented during the final design stage to minimize impacts by the proposed project include the following:

- Minimizing “in-stream” activities
- Strictly enforcing the sedimentation and erosion control recommended in NCDOT’s BMPs for the protection of streams and wetlands
- Decreasing the footprint of the proposed project through the reduction of right-of-way widths and steepening of fill slopes where possible



Figure 5 Potential Jurisdictional Stream Impacts

3.2.3.2 Compensatory Mitigation

Compensatory mitigation is meant to replace, on at least a one-to-one basis, the lost functions and values of natural streams and wetlands affected by development activities. NCDOT will investigate potential on-site stream mitigation opportunities for the preferred Alternative 4. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Division of Mitigation Services.

3.2.4 Clean Water Act Permits

Land development activities that may adversely impact wetlands require consent through permit approval from the regulating agency. At the federal level, under the CWA Section 404b (1) Guidelines (40 CFR 230) and USACE regulations (33 CFR 320.4(r)), USACE is obligated to require mitigation for any unavoidable impacts to wetlands and streams as a condition of permit approval.

A Section 404 General Permit will likely be applicable due to the quantity of stream impacts anticipated for this project. USACE holds the final discretion as to which permit is most applicable.

3.2.5 North Carolina River Basin Buffer Rules

Under the provisions of the CWA, the North Carolina Environmental Management Commission has adopted rules pertaining to maintaining vegetated buffers around riparian areas as part of the Nutrient Sensitive Water Management Strategies for select watersheds of North Carolina (15A North Carolina Administrative Code [NCAC] 2B).

The project study area is not located within a river basin that is subject to River Basin Buffer Rules.

3.2.6 Rare and Protected Species

Species with the federal status of endangered, threatened, proposed endangered, and proposed threatened are protected under provision of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.). Any action likely to adversely affect a species classified as federally protected is subject to review by the United States Fish and Wildlife Service.

Four protected species are listed for Chatham County: *Haliaeetus leucocephalus* (Bald eagle), *Notropis mekistocholes* (Cape Fear shiner), *Picoides borealis* (Red-cockaded woodpecker), and *Ptilimnium nodosum* (Harperella). Potential habitats identified in the study area were observed during field investigations and NCDOT's biologist, Rex Badgett, conducted an endangered species survey on April 6, 2017. His findings and field observations revealed no habitat present in the project study area, therefore none of the alternatives will have an impact on these rare and federally protected species.

More information can be found in the NRTR (M&N, 2017).

3.2.7 Soils

The Chatham County Soil Survey (United States Department of Agriculture Natural Resources Conservation Service, 2006) identifies eighteen soil mapping units, representing eleven soil series within the project study area. The process of soil development depends on both biotic and abiotic influences. These influences include past geologic activities, nature of present materials, environmental and human influences, plant and animal activity, duration of development, climate, and topographic position.

Anticipated impacts to each soil type by alternative are summarized in Table 10. The soils are shown on Map 7 of the Maps section. The project is expected to have a negligible overall impact to the region's topography, geology, and loss of or creation of soils.

Table 10 Potential Soil Impacts

Soil Classification	Project Area (Acres)	Hydric Status
CmB - Cid-Lignum complex, 2 to 6 percent slopes	2.10	Hydric
GaC - Georgeville silt loam, 6 to 10 percent slopes	1.54	Non-hydric
GeB2 - Georgeville silty clay loam, 2 to 6 percent slopes, moderately eroded	2.55	Non-hydric

Soil Classification	Project Area (Acres)	Hydric Status
GeC2 - Georgeville silty clay loam, 6 to 10 percent slopes, moderately eroded	1.05	Non-hydric
GnC - Georgeville-Urban land complex, 2 to 10 percent slopes	32.68	Non-hydric
NaB - Nanford-Badin complex, 2 to 6 percent slopes	0.05	Non-hydric
UdC - Udorthents loamy, 0 to 10 percent slopes	5.22	Non-hydric

3.3 CULTURAL RESOURCES

Historic and archaeological resources determined to be eligible for the National Register of Historic Places are protected under the National Historic Preservation Act (NHPA; Public Law 89-665; 54 U.S.C. 300101 et seq.). Properties protected under this Act includes districts, sites, buildings, structures, and objects that are on or determined eligible for listing on the National Register of Historic Places (<https://www.nps.gov/Nr/index.htm>).

The project corridor was investigated through the NCDOT screening process to identify eligible resources within the project corridor. There were no eligible archaeological or historic resources identified through screening. Please see the “No Archaeology Survey Required Form” and the “No Historic Properties Present or Affected Form” in Appendix C.

3.4 COMMUNITY EFFECTS

This section summarizes the potential effects on human communities. Potential social effects were analyzed in the *Combined Short Form Community Impact Assessment (CIA)* (M&N, 2017). For more information on the analysis summarized in this section, please refer to the CIA.

3.4.1 Community Context

The area surrounding U.S. 64 includes a mix of residential, commercial, and light industrial development. The west segment of the study area consists of land recently developed for residential use, extending from North Glenn to Greensboro Avenue. Transitioning to the central segment, there are older single family residential areas, extending from Greensboro Avenue to Pine Glades Avenue. Retail oriented businesses and light industrial development become more abundant from Pine Glades Avenue to east of U.S. 421. The redevelopment of a defunct chicken processing plant by Mountaire Farms, at U.S. 64 and East 3rd Street, has expanded its original boundaries, and has prompted the private acquisition of various residences and businesses once located in close proximity to the plant. The terrain within the roadway segment is slightly rolling.

U.S. 64 locally serves existing businesses and the community. The east and center segments of U.S. 64 within the project limits are recognized as the predominant business/commercial nodes for Siler City, with numerous service-oriented businesses and establishments each having varying levels of dependence on pass-by vehicle traffic for the generation of revenue. Regionally, the portion of U.S. 64 proposed for improvement is a part of North Carolina’s Strategic Transportation Corridor network. This statewide transportation network supports

businesses with heavy reliance on commodity distribution. There is currently no access control within the limits of the project.

Siler City has generally shown steady growth with an annualized yearly growth rate of 2.6 percent, which is consistent with Chatham County, but higher than the growth rate experienced at the state level, reported as 1.7 percent. Siler City has experienced a notable shift in the ethnic and racial composition of the community. The increase in the Hispanic population since the 1990's has outpaced the growth of the African American and Caucasian populations over the same time period.

The project as currently designed is consistent with local area plans.

3.4.2 Right-of-Way Acquisition & Relocation

The impacts associated with the relocation of residential and business property located within the proposed right-of-way for the build alternatives are presented in this section. The project corridor is highly constrained by residential, commercial and light industrial development adjacent to U.S. 64. Design efforts aimed at lessening the possibility of right-of-way acquisition or residential or business relocation were utilized during project development but did not in all instances prevent the likelihood of future right-of-way acquisition needed along the periphery of current right-of-way limits.

As a design mitigation measure, a retaining wall is being considered for the front of Loves Creek Church. This design option would minimize right-of-way acquisition. Coordination with church leadership also indicated that they would prefer that the grade of their parking lot entrances be lessened with any future access point improvements on their property, which would result in a beneficial project impact.

Three residential relocations are possible (see Table 11). Efforts to avoid and minimize the number of relocations will continue through the final design phase of the project. Relocation impacts would be mitigated through implementation of the relocation assistance programs offered by NCDOT.

Table 11 Potential Relocations

Alternatives	Residences	Businesses
No-build Alternative (Alternative 1)	0	0
Traditional Alternative (Alternative 2)	0	0
Best Fit Hybrid Alternative (Alternative 4)	3	0

In addition to direct takings of residences, multiple properties would be impacted from the project, due to the loss of trees, landscaping, and fencing, as well as disruption of utilities. North Cottage Grove Avenue would be closed and converted to a cul-de sac. Brooks Avenue will be closed. Impacts anticipated include a change in travel pattern to get to U.S. 64 and potential increase in travel time that is minimal. Approximately nine to twelve properties at North Cottage Grove Avenue and approximately seven to nine properties at Brooks Avenue may be affected by these changes in access.

3.4.3 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, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 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, American Indians, and other minority groups. Potential impacts to the identified EJ communities are identified in the CIA.

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

3.4.4 Limited English Proficiency

The Limited English Proficiency (LEP) threshold has been met for the Spanish-speaking population within the project study area, as there are 2,043 Spanish Primary Language Group individuals. Because LEP populations within the project study area exceed the Department of Justice's Safe Harbor thresholds, written translations of vital documents were and will be provided for Spanish language-speaking populations, in addition to other measures assuring meaningful language access, as determined by NCDOT Public Involvement to satisfy the requirements of Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency".

3.4.5 Bicycle and Pedestrian Facilities

The project area contains existing greenway and bicycle route facilities. A network of greenway facilities exists throughout the project study area in various locations, many of which run alongside existing road right-of-way. Chatham County Bike Route 5 runs north to south through the project study area along North Second Avenue as well. NCDOT will coordinate with the Town of Siler City regarding cost sharing for sidewalks, multi-use paths, median fill or landscaping. Municipal Agreements will be prepared, as applicable, prior to project construction. NCDOT will continue coordination regarding crosswalk locations and treatments for pedestrian and bicyclist safety.

Siler City ordinances allow for the use of bicycles on sidewalks. A portion of funding for the project has been designated for the improvement of pedestrian facilities (and to a degree bicycle facilities). If constructed, the project would provide five-foot wide contiguous sidewalk segments/extensions at the following locations:

- Perry Avenue intersection with U.S. 64
- Cateland Place Apartments west to Perry Avenue
- Dogwood Ave. west to North. Glenn Ave. (an existing sidewalk is located along the south side of 11th St. in front of State Employees Credit Union)

- Along one side of the new Chatham Ave. Connector (Note: future sidewalk is proposed along N. Chatham Ave.)

The project would also provide pedestrian crossing opportunities at the following locations:

- Stonecrest Apt. and N. Dogwood Avenue
- Greensboro Avenue
- Near N. Sears, Brooks, or Shepherd Avenue
- Martin Luther King Jr. Boulevard
- Near Pine Glades Avenue
- 3rd Street
- Raleigh Street
- Near McDonalds and Burger King
- US 421 South Ramps

Input from the community indicates a perceived loss of mobility due to proposed changes to the signalized intersection at U.S. 64 and Martin Luther King Boulevard. The project promotes improved sidewalk connectivity and safe crossing of the roadway through the inclusion of crosswalks in areas where pedestrian traffic is most likely to occur. Crosswalks would be compliant with the Americans with Disability Act.

NCDOT has coordinated with Siler City planning staff to identify current pedestrian crossing locations along the corridor and to provide enhanced sidewalk connections in keeping with their Pedestrian Master Plan (Town of Siler City, NC Pedestrian Master Plan, 2013).

3.4.6 Public Facilities and Services

The following public facilities located within the project study area were identified:

- Jordan Matthews High School
- Busy Bees Creative Learning Center
- Loves Creek Baptist Church & Cemetery
- Pentecostal Holiness Church
- Oakwood Cemetery
- Siler Crossing Vision Center
- Siler City Driver's License Department
- Washington Avenue Park
- Landrus Siler Park
- Town of Siler City Greenways

A retaining wall will be constructed in front of Loves Creek Baptist Church & Cemetery. Additionally, the access points on either side of the church will be improved.

3.5 AIR QUALITY

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion

and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

The proposed project is located in Chatham County, which complies with the U.S. National Ambient Air Quality Standards (NAAQS). The proposed project is located within an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. Therefore, the project is not anticipated to create any adverse effects on the air quality of this attainment area. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the SEPA process. No additional study is necessary. More detailed information on these can be found in the Air Quality Report (Ramey Kemp and Associates, Inc., 2018).

3.6 NOISE

In accordance with and the North Carolina Department of Transportation Traffic Noise Policy (October 6, 2016), each Type I highway project must be analyzed for predicted traffic noise impacts.

The proposed project does not meet the criteria of a Type I project under Title 23 CFR 772 and the NCDOT Traffic Noise Policy. Rather, the project is a Type III project. Type III projects do not require a traffic noise analysis. No traffic noise analysis will be required unless warranted by a change in the project's design such that the criteria for a Type I project are met.

3.7 BUSINESS EFFECTS

The proposed project is expected to improve safety, enhance traffic flow and provide acceptable levels of traffic service, all of which is important in support local commerce efforts. Businesses will be directly affected due to changes in access management in order to achieve this purpose. Some businesses may experience right-of-way encroachment impacts as well. Access to businesses will be maintained during all phases of construction, but may be modified at certain times.

Several intersections along U.S. 64 will be altered from traditional full movement intersections to a Superstreet concept, with a center median also added to the roadway. These improvements will likely result in path-of-egress change for some businesses along the project corridor. The restriction of left turn lanes may in some instances require that travelers bypass their points of destination in order to access a U-turn.

Fast-food establishments, gasoline stations, convenient stores, and other retail establishments may experience shifts in the volume of traffic flow into their establishments at peak travel times, as the flow of traffic increases and becomes more continuous and constant over the life of the project. Based on recent studies conducted by NCDOT and other departments of transportation nationally, NCDOT anticipates that service-oriented businesses will benefit from anticipated enhancement in roadway capacity and improved ingress and egress, to the extent that these benefits will offset any temporary impacts associated with project construction. Improved capacity may increase business exposure for all users of U.S. 64, including pedestrians, motorists, and road freight operators.

Commercial establishments that rely on pass-by business would continue to be accessible to traffic, yet any change in traffic flow, or points of access may be perceived by business owners as having the potential to negatively affect their business. During construction, retail businesses located in the east segment of the project corridor will experience some minor construction-related inconveniences. Access along the project corridor will be maintained though project construction (CIA, M&N, 2017).

During construction, retail businesses located in the east segment of the project corridor will experience some minor construction-related inconveniences. Access along the project corridor is to be maintained during all phases of project construction.

3.8 POTENTIAL HAZARDOUS MATERIAL SITES

In 2016, the NCDOT GeoEnvironmental Section conducted an evaluation identifying properties within the project study area that are, or may be, contaminated. A review of Geographic Information System (GIS) data was utilized to identify known potential hazardous waste sites within the project study area. Twenty-one (21) UST facilities and one (1) junk yard were identified within the project area.

Descriptions of potential hazardous materials sites and their anticipated risk can be seen in Table 12. The locations of these hazardous materials sites and more detailed information is provided in Appendix B. It is recommended that a detailed study of the preferred alternative should be performed to field verify the hazardous waste sites and identify unknown sites.

Table 12 Potential Hazardous Material Sites Identified in Study Area

Type	Location	Property Name	Anticipated Impact
UST	214 W 11 th Street	T&E Tax Services (Former Gray's Live Bait Shop)	LOW
UST	1103 N 2 nd Ave.	Siler City Driver's License Dept.	LOW
UST	736 N 2 nd Ave.	Chatham Car Care (Vacant)	LOW
UST	910 N 2 nd Ave.	Plata Y Oro Buyers	LOW
UST	1010 Greensboro Ave.	Farmers Pantry	LOW
UST	201 E 11 th Street	Citgo (Pantry #3297)	LOW
Junk Yard	211 E 11 th Street	Marsh Auto Parts	LOW
UST	320 E 11 th Street	Speedway (Former Servco)	LOW
UST	702 E 11 th Street	Phil's Barber Shop	LOW
UST	913 Martin Luther King Jr. Blvd.	N/A	LOW
UST	801 E 11 th Street	Mystik (Former Stovall's Mini Mart)	LOW
UST	801 E 11 th Street	Baker Limestone Co.	LOW
UST	1212 E 11 th Street	Five-Star	LOW
UST	1101 E 3 rd Street	Townsend's Inc.	LOW
UST	1200 E 3 rd Street	Glendale Hosiery Co.	LOW
UST	1320 E 11 th Street	Valvoline Express Care	LOW
UST	1212 E 11 th Street	Tank & Tummy	LOW
UST	1402 E 11 th Street	Chatham Chevrolet	LOW

**US 64 CORRIDOR STUDY**

Type	Location	Property Name	Anticipated Impact
UST	1404 E 11 th Street	NCDOT – Siler City (County Maintenance)	LOW
UST	1513 E 11 th Street	Pantry #3839 Kangaroo Express (Former Stovall's Mini Mart)	LOW
UST	1516 E 11 th Street	Park N Shop (The Pantry #267)	LOW
UST	1740 E 11 th Street	The Pantry #3192	LOW

4.0 STAKEHOLDER ENGAGEMENT

Section 4 describes the NCDOT's public involvement activities. Coordination with the public, local officials, and state and federal agencies was ongoing throughout all the planning and preliminary design phases of the project. This section summarizes all coordination and correspondence. More detailed information on these can be found in the *Public Involvement Summary* (M&N, 2017).

4.1 AGENCY COORDINATION

A project scoping meeting was held on July 1, 2016. Representatives from NCDOT, the Federal Highway Administration, Town of Siler City, and Triangle Rural Planning Organization (TARPO) participated in the meeting. Courtesy e-mails were sent to both federal and state agencies notifying them that the environmental review of the proposed project was being initiated. This meeting was held in lieu of the Start of Study Letter and covered such topics as environmental review methodology, project limits (logical termini), anticipated design constraints, and town support for the project.

4.2 LOCAL OFFICIALS MEETING

A Local Officials Information Meeting (LOIM) was held on September 7, 2017, at Wren Memorial Library, in Siler City. Formal meeting notification was sent via email to Bryan Thompson, Siler City Town Manager, and Jack Meadows, Planning Director. Additional Town representation was invited to participate in the meeting by Siler City's Planning Director. A total of eleven local officials signed in at the meeting.

The purpose of the meeting was to involve local officials in the project development process and present project concepts. The meeting consisted of a PowerPoint presentation that included up-to-date information on the project schedule and NCDOT's environmental review process. A question-and-answer session followed the presentation, allowing local officials to inquire about specific concerns, or to recommend design modifications given their innate understanding of community needs. There was group dialogue on what type of access is best suited within the limits of the project. Potential enhancements to the sidewalk/crosswalk network along U.S. 64 was also a topic of discussion. Personnel from the NCDOT and their consultants were on hand to both facilitate the meeting and answer questions.

4.3 BUSINESS MEETING

Two business owner meetings were held on November 14, 2017, at the Paul Braxton Gym in Siler City. The same project information was provided at both meetings. The first meeting was held at 10:00 am and the second at 2:00 pm.

The purpose of the meetings was to share project information with local business owners and to discuss the goals and objectives of the project. Personnel from the NCDOT, their consultants, and a TARPO representative were present to answer questions and receive feedback on how the project might affect both the community and their businesses. A total of 20 business representatives signed in at the meetings.



Figure 6 Business Meeting

Following the November 14th meetings, NCDOT coordinated with (and in some cases met with) local businesses having the potential for modifications to their existing access points. Those business included Big V Properties (Siler Crossing) and MAS Acme. NCDOT reached out by phone to discuss the proposed project with McDonalds, Bo jangles', KFC/Taco Bell, Sir Pizza, and Little Caesar's Pizza restaurants.

4.4 PUBLIC INFORMATION MEETING

A Public Information Meeting was also held on November 14, 2017, at the Paul Braxton Gym in Siler City. The objectives of the public meeting were to:

- Inform the public
- Receive input
- Engage in dialogue
- Consider modifications and/or other alternatives based on public comment received

The meeting was held from 4:00 pm to 7:00 pm. Personnel from NCDOT, their consultants, and a TARPO representative were present to answer questions and receive comments regarding the project. Approximately 80 citizens signed in at the meeting, and 27 comments were received. Five comments disapproved



Figure 7 Public Information Meeting

of the removal of the traffic light at Martin Luther King Jr. Boulevard. Eleven comments received indicated concern over the change in traffic flow with utilization of a center median and U-Turn bulbs. The potential to adversely impact local business was expressed in ten of the comments. Concerns for safety were included in four of the received comments. The safety issues posed included the fear of increased speeds along the corridor as mobility is increased and new traffic conflict point introduced with the utilization of U-Turn bulbs.

5.0 BASIS FOR FINDINGS

Based upon a study of the proposed project documented in this assessment and upon the input received from state agencies, local agencies, and the public, it is the finding of the 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 have significant adverse impacts on the community. Per this evaluation, a Finding of No Significant Impact is applicable for this project. Therefore, no further environmental analysis is required.



Figure 8 Project Illustration #2

REFERENCES

Federal Highway Administration, Desktop Reference for Crash Reduction Factors,

<https://safety.fhwa.dot.gov/tools/crf/resources/fhwasa08011/>, last accessed on 6/26/2018.

National Park Service, National Register of Historic Places, <https://www.nps.gov/Nr/index.htm>,

Last accessed on 6/26/2018.

North Carolina Department of Environmental Quality, SEPA-Environmental Review Document,

<https://deq.nc.gov/permits-regulations/sepa/general-information>, last accessed on 6/22/2018.

NCDOT STIP Map:

<http://ncdot.maps.arcgis.com/home/webmap/viewer.html?webmap=cb02f4f828974670ad01bb83be91b18c>, last accessed on 10/27/2017.

NCDOT-Traffic Noise manual, Human Environmental Section, traffic Noise and Air Quality,

<https://connect.ncdot.gov/resources/Environmental/PDEA%20Procedures%20Manual%20Documents/2016%20NCDOT%20Traffic%20Noise%20Manual.pdf>, last accessed on 6/26/2018.

NCDOT-Transportation Planning Branch, *2016 Chatham County Comprehensive Transportation Plan*, August 2016,

<https://connect.ncdot.gov/projects/planning/TPBCTP/Chatham%20County/Chatham%20CTP%20Draft%20Report.pdf>, last accessed on 10/27/2017.

Siler City website, Siler City Transportation Priorities,

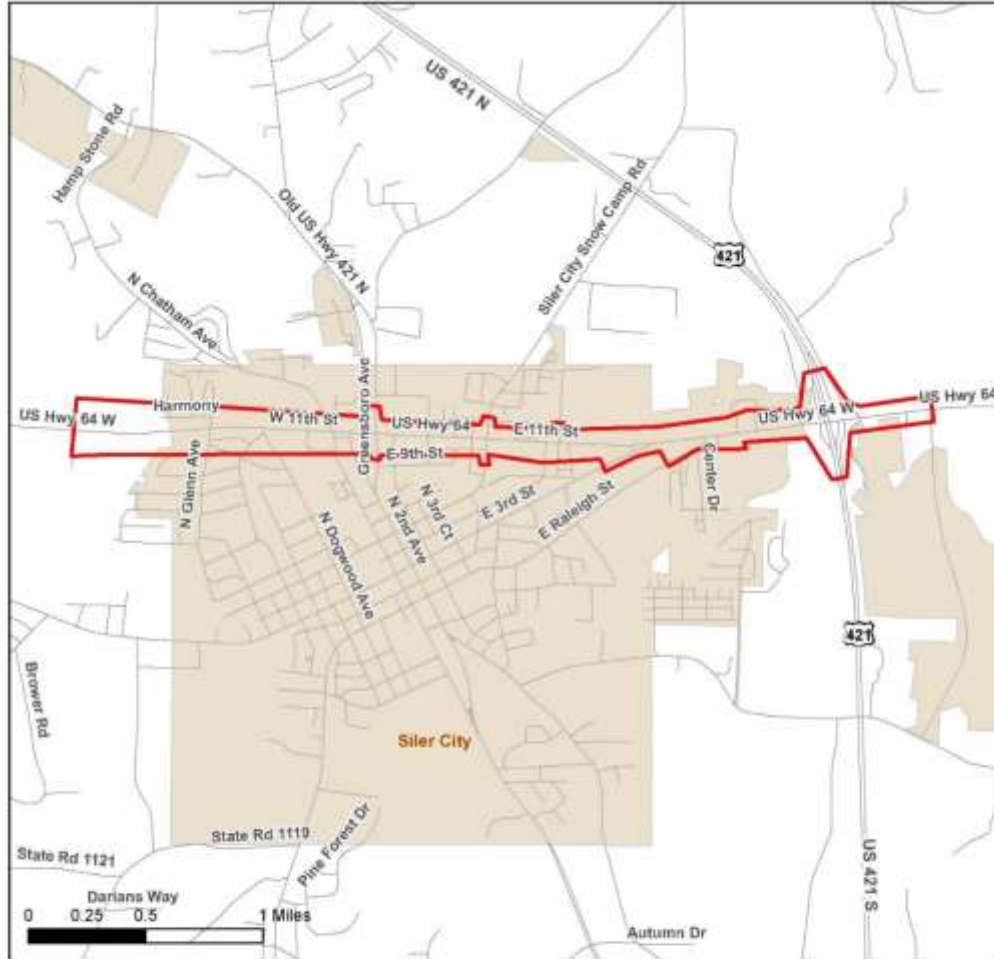
http://www.silercity.org/index.asp?SEC=5395545D-DC91-4915-998D-65A118CA501B&Type=B_BASIC,

last accessed on 05/15/2017.

U.S. Department of Transportation, Federal highway Administration, Highway Traffic and Construction Noise – Regulations and Guidance,

https://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/, last accessed on 6/26/2018.

MAPS



Legend:

- Roads
- ▭ U-5737 Study Area
- ▭ Municipal Boundary
- ▭ County Boundary

North arrow pointing up with 'N' above it.

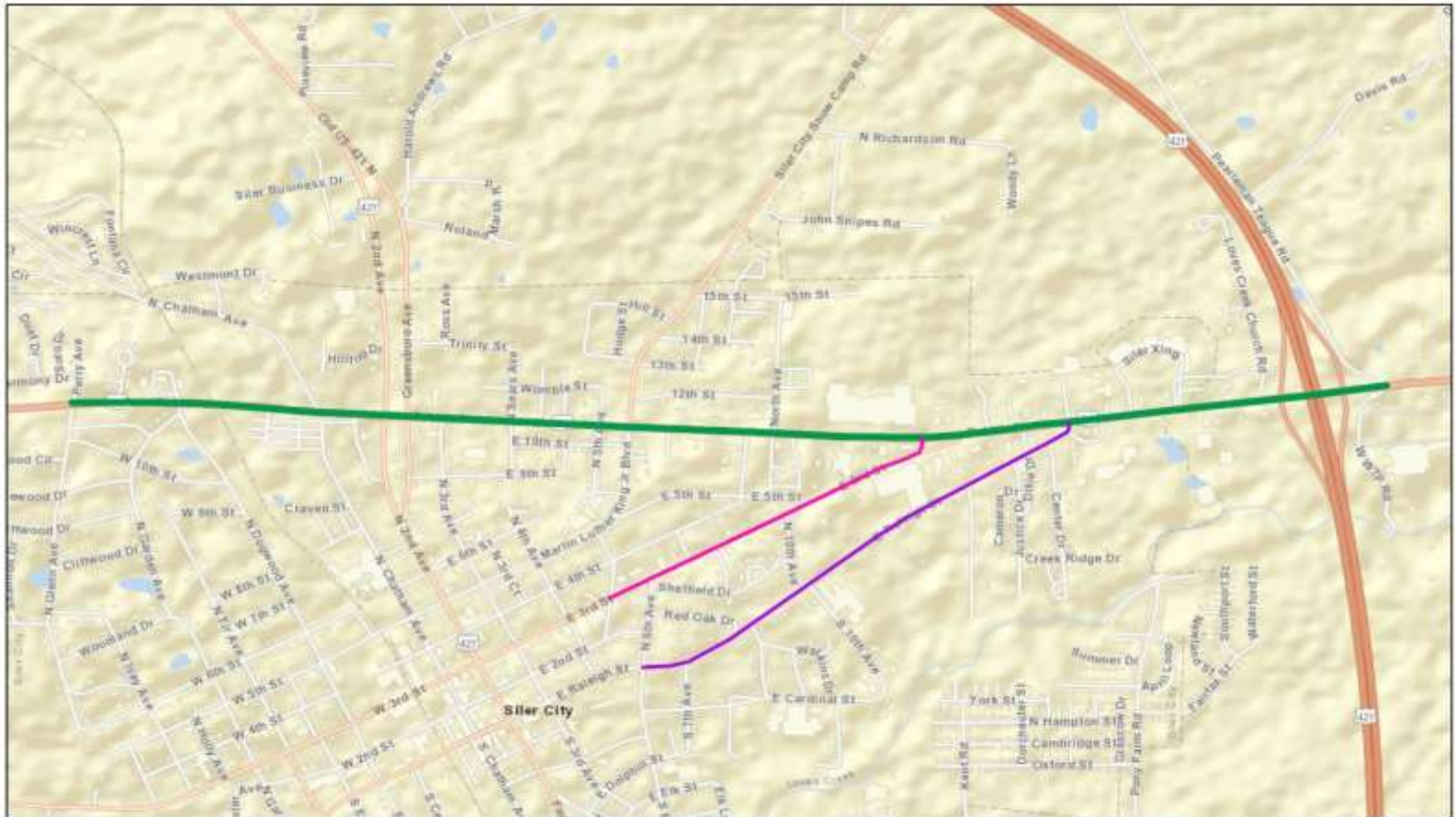
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

U-5737
US 64 (11TH STREET) IMPROVEMENTS
CHATHAM COUNTY
WBS. No. 54027.1.FR1
Federal Aid No. NHP 0064(101)

VICINITY MAP

Map 1 Vicinity Map

ROUTE 64 US 64 CORRIDOR STUDY



Legend

STIP Description

- EB-5871 Construct sidewalk on south side. Division Bike and Pedestrian.
- EB-5734 Construct sidewalk on s. side from S. 6th Ave. to S. 10th Ave. and construct multi-use path on s. side from S. 10th Ave. to US 64.
- STIP U5737 Project Limits



	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT
	U-9747
	US 64 (11 TH STREET) IMPROVEMENTS CHATHAM COUNTY WBA No. 54027.1.FR.1 Federal Aid No. SHD-0064(181)
	OTHER STIP PROJECTS ADJACENT TO PROJECT LIMITS MAP

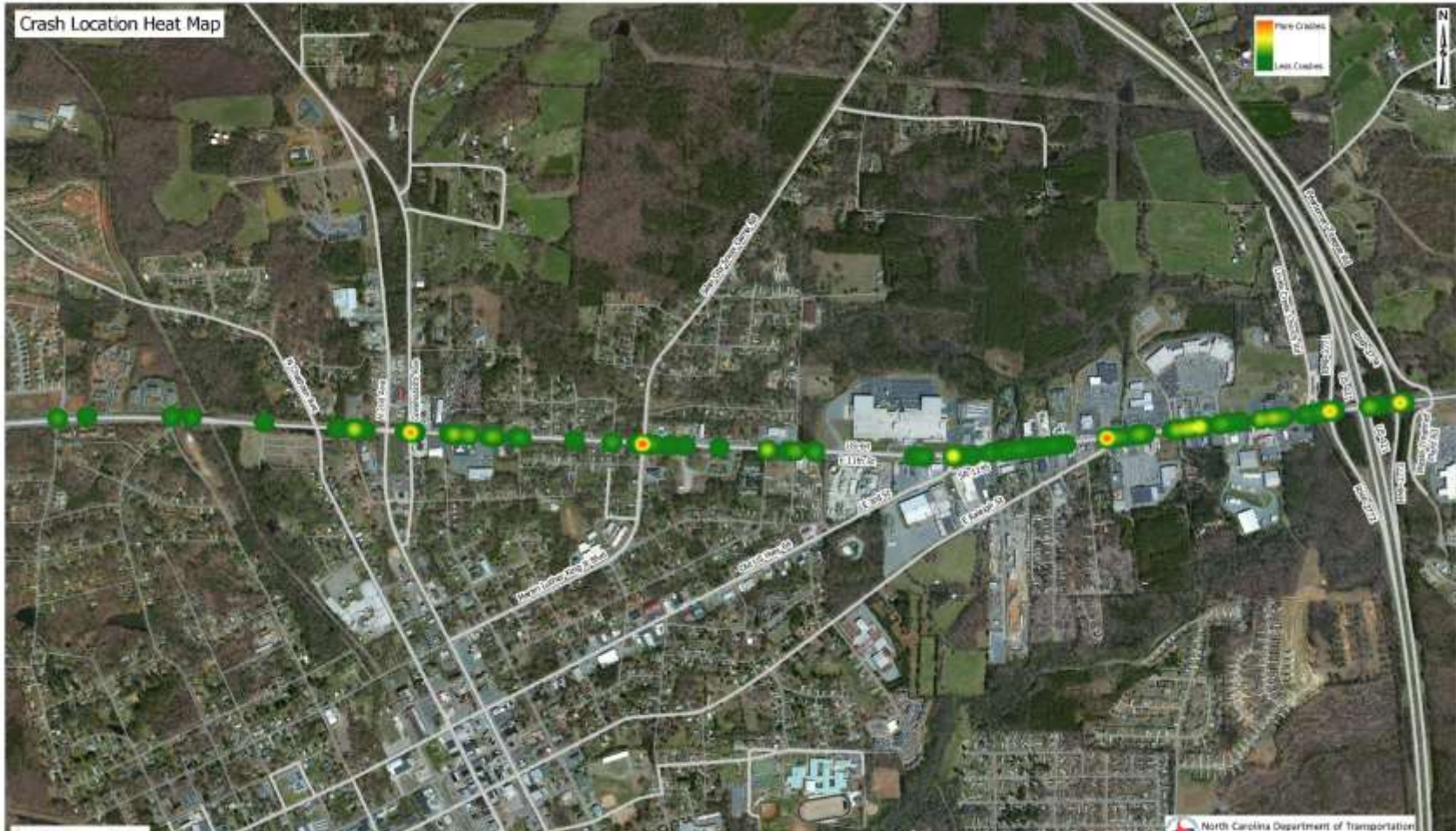
Map 2 Other Projects

ROUTE 64 US 64 CORRIDOR STUDY



Map 3 Environmental Features Map

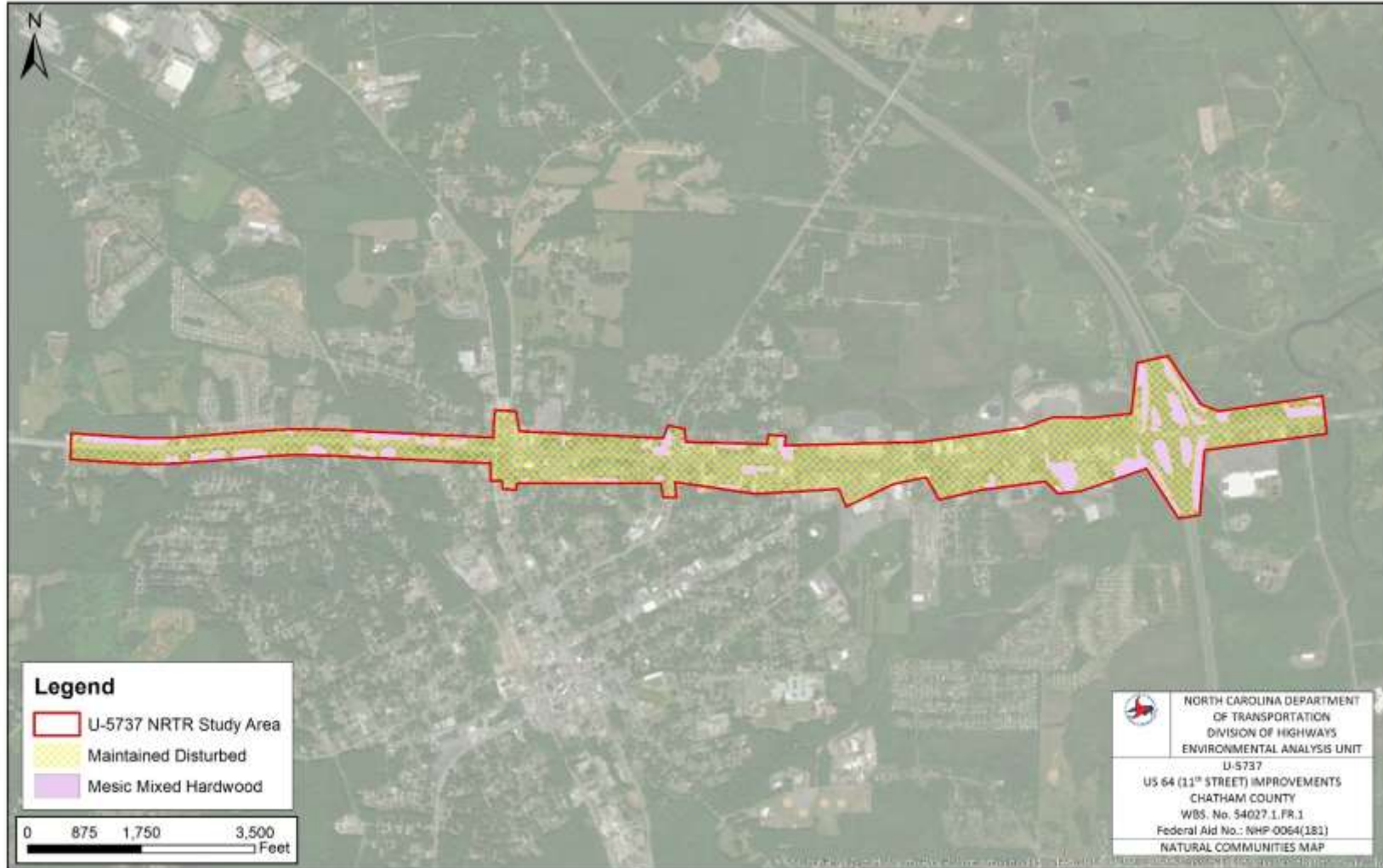
ROUTE 64 US 64 CORRIDOR STUDY



Map 4 Crash Location Heat Map



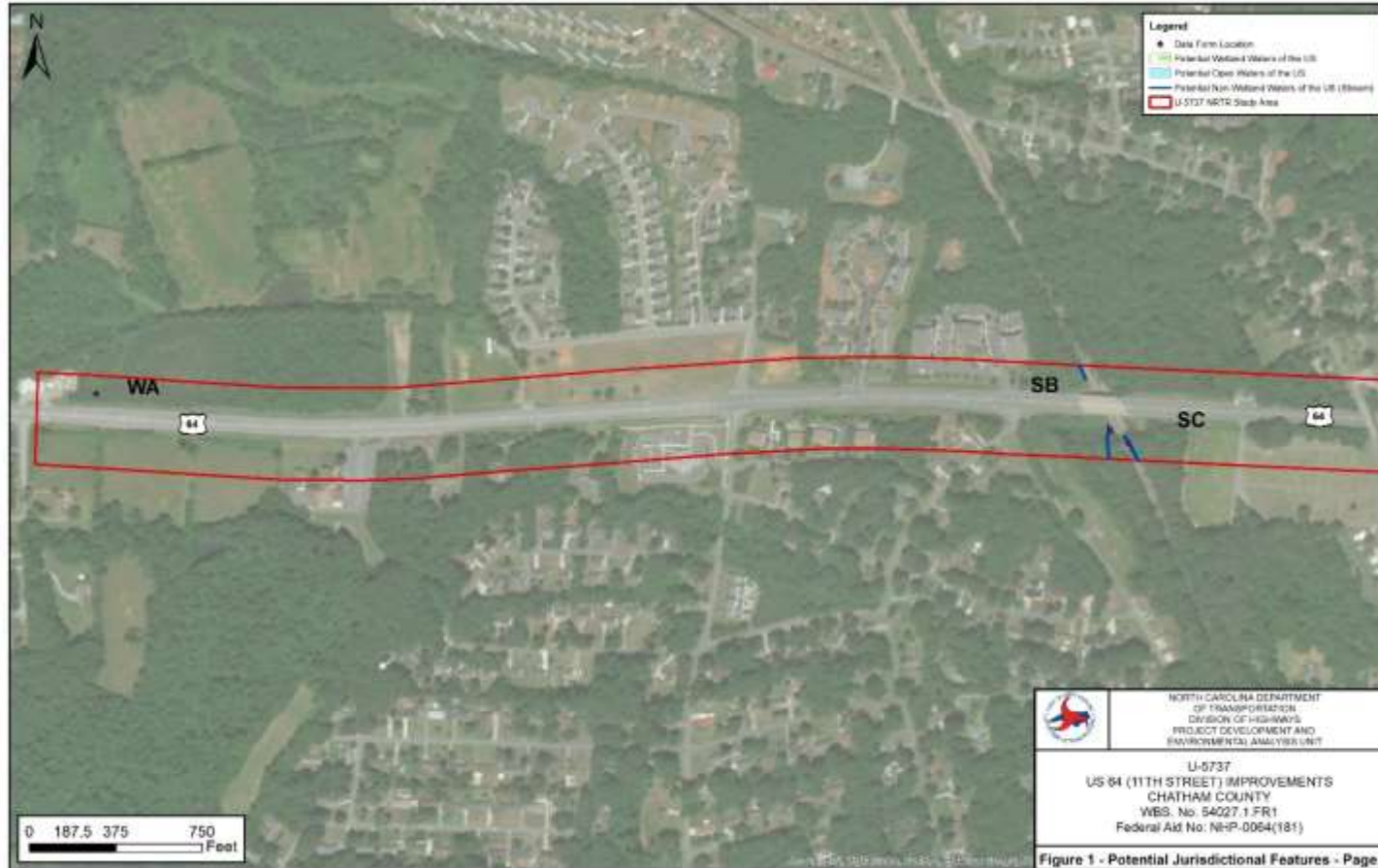
US 64 CORRIDOR STUDY



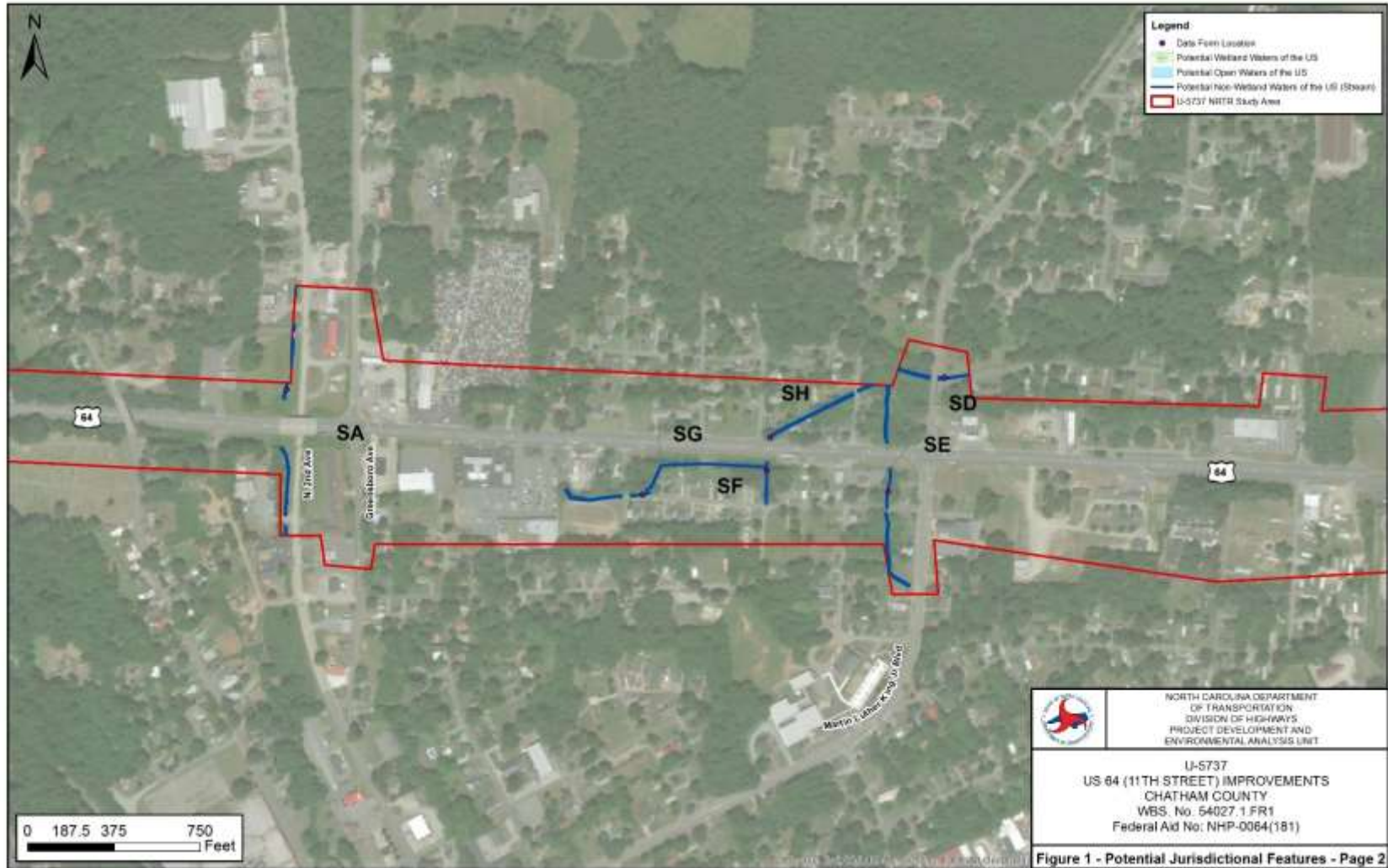
Map 5 Natural Communities



US 64 CORRIDOR STUDY



ROUTE 64 US 64 CORRIDOR STUDY



ROUTE 64 US 64 CORRIDOR STUDY



Map 6 (Pages 1-3) Wetlands and Open Waters

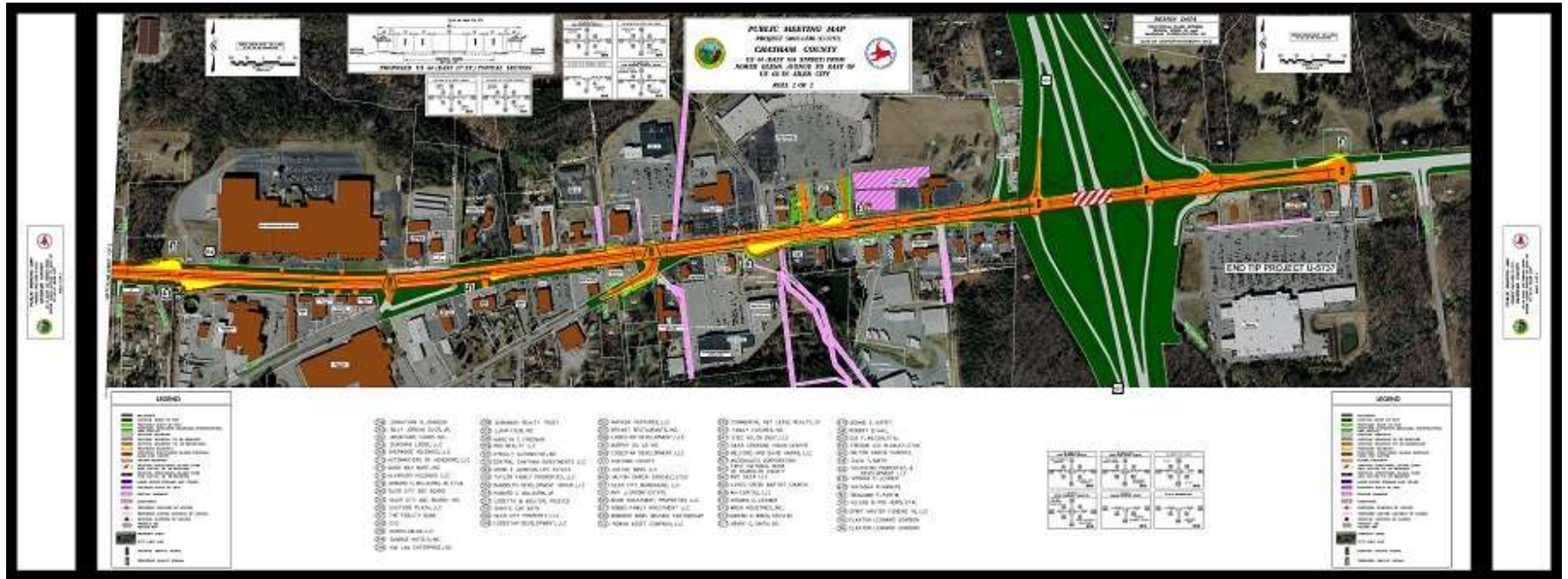


US 64 CORRIDOR STUDY



Map 7 Soils

ROUTE 64 US 64 CORRIDOR STUDY



Map 8B Project Map



Appendix 1 Cost Estimates

- **Construction**
- **Right-of-Way**
- **Utility**

 **US 64 CORRIDOR STUDY**

TIP No. U-5737 Prel. County: Chatham
 US 64
 N. Glenn Ave. to east of US 421 in Siler City
 Curb & Gutter **CONSTR. COST**
\$12,900,000

Priced By: Nidal Albadawi, PE 5/17/2018
 Prepared By: Moffatt & Nichol 4/11/2018
 Requested By: Trent Huffman, PE 5/4/2018

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
0000400000-N	M	801	Construction Surveying	1	LS	\$ 150,000.00	\$ 150,000.00
			Grading				
			Clearing and Grubbing	1	Acres	\$ 40,000.00	\$ 40,000.00
			Unclassified Excavation	21,400	CY	\$ 16.00	\$ 342,400.00
			Borrow Excavation	18,000	CY	\$ 15.00	\$ 270,000.00
			Shoulder Borrow	120	CY	\$ 15.00	\$ 1,800.00
			Fine Grading	27,580	SY	\$ 4.00	\$ 110,320.00
Added			Supp. Clearing & Grubbing	1	Acres	\$ 5,000.00	\$ 5,000.00
			Pavement				
1491000000-E	P	610	Asphalt Conc Base Course, Type B25.0C	9,150.00	Tons	\$ 50.00	\$ 457,500.00
1503000000-E	P	610	Asphalt Conc Intermediate Course, Type 119.0C	6,290.00	Tons	\$ 55.00	\$ 345,950.00
1523000000-E	P	610	Asphalt Conc Surface Course, Type S9.5C	23,570.00	Tons	\$ 45.00	\$ 1,060,650.00
1575000000-E	P	620	Asphalt Binder for Plant Mix	2,130.00	Tons	\$ 480.00	\$ 1,022,400.00
2542000000_E	P	846	1'-6" Concrete Curb and Gutter	8,520	LF	\$ 16.00	\$ 136,320.00
2549000000-E	P	846	2'-6" Concrete Curb and Gutter	31,290	LF	\$ 18.00	\$ 563,220.00
2577000000-E	P	846	4'-0" Concrete Expressway Gutter	340	LF	\$ 30.00	\$ 10,200.00
2591000000-E	P	847	4" Concrete Sidewalk	13,350	SY	\$ 38.00	\$ 507,300.00
2605000000-E	P	848	Concrete Curb Ramp	115	EA	\$ 1,300.00	\$ 149,500.00
2612000000-E	P	848	6" Concrete Driveways	560	SY	\$ 65.00	\$ 36,400.00
2655000000-E	P	852	5" Monolithic Concrete Island (Keyed In)	9,830	SY	\$ 55.00	\$ 540,650.00
2000000000-N	G	806	Right of Way Markers	54	EA	\$ 200.00	\$ 10,800.00
6084000000-E	L	1660	Erosion Control (including Seeding & Mulching)	9.00	Acres	\$ 35,000.00	\$ 315,000.00
			Drainage				
			3.261 miles	3.261	MI	\$ 300,000.00	\$ 978,300.00
			Traffic Control				
			3.261 miles	3.261	MI	\$ 100,000.00	\$ 326,100.00
			Thermo Markings				
			3.261 miles	3.261	MI	\$ 35,000.00	\$ 114,135.00
			Signing				
			3.261 miles	1	LS	\$ 80,000.00	\$ 80,000.00
			Signals				
				1	LS	\$ 680,000.00	\$ 680,000.00
			Greensboro Ave. (Modification)				
			MLK (Modification)				
			East 3rd St. (Modification)				
			East Raleigh St. (Modification)				
			Bulb @ Taco Bell (New)				
			Bulb @ Capitol Bank (New)				
			US 421 (SB) Ramps (Modification)				
			US 421 (NB) Ramps (Modification)				
			Walmart (Modification)				
Added			Utilities Construction (Per Utilities)	1	LS	\$ 474,000.00	\$ 474,000.00
			Misc. & Mob (10% Strs&Util)	1	LS	\$ 47,055.00	\$ 47,400.00
			Misc. & Mob (35% Roadway)	1	LS	\$ 2,889,000.00	\$ 2,888,880.75

Revised

Roadway
\$ 8,253,945.00

Utilities
\$ 474,000.00

Lgth	3.26	Contract Cost	\$ 11,664,000.00	
		E. & C. 10% (State Funded)	\$ 1,236,000.00	\$ 1,166,400.00
		Construction Cost	\$ 12,900,000.00	\$ 12,830,400.00

Revised 45



REQUEST FOR R/W COST ESTIMATE / RELOCATION EIS

COST ESTIMATE REQUEST

RELOCATION EIS REPORT

NEW REQUEST:

UPDATE REQUEST:

REVISION REQUEST:

Update to ____ Estimate

Revision to ____ Estimate

Revision No.: ____

DATE RECEIVED: 02/15/18

DATE ASSIGNED: ____

of Alternates Requested: 1

DATE DUE: 03/15/18

TIP No.: U-5737	DESCRIPTION: <u>US 64 (11th St) roadway improvements from North Glenn Ave to east of U 421. The proposed project involves access management improvements to include converting the existing center two-way left turn lane to a median.</u>
------------------------	--

WBS ELEMENT: 54027.1.FR1 **COUNTY:** Chatham

DIV: 8 **APPRAISAL OFFICE:** 2

REQUESTOR: Jeffrey Teague **DEPT:** Div 8

TYPE OF PLANS: HEARING MAPS | LOCATION MAP | AERIAL | VICINITY | PRELIMINARY | CONCEPTUAL

.....
 ** Based on past project historical data, the land and damage figures have been adjusted to include condemnati and administrative increases that occur during settlement of all parcels. **

PPRAISER: Krystal Broyhill - Consultant **COMPLETED:** 03/19/18 **# of Alternates Completed:** 1

	Alt 1	
TYPE OF ACCESS:	NONE: <input type="checkbox"/>	LIMITED: <input type="checkbox"/>
	PARTIAL: <input checked="" type="checkbox"/>	FULL: <input type="checkbox"/>
ESTIMATED NO. OF PARCELS:	59	
RESIDENTIAL RELOCATEES:	2	\$ 80,000
BUSINESS RELOCATEES:	-	\$ -
GRAVES:	-	\$ -
CHURCH / NON – PROFIT: _	-	\$ -
MISC: _	-	\$ -
SIGNS:	21	\$ 205,000
LAND, IMPROVEMENTS, & DAMAGES:	\$ 1,882,500	
ACQUISITION:	\$ 295,000	
TOTAL ESTIMATED R/W COST:	\$ 2,462,500	

.....
 ** The estimated number of above relocatees includes those parcels where the proposed acquisition areas invol relocation of livable or business units only. **

NOTES: _____



UTILITY ESTIMATE WORKSHEET

TIP No: U-5737
 WBS Element No: 54027.1.FR1
 State Project No:
 Fed. Project No:
 County: Chatham
 Description: US 64 (E. 11th Street) from North Glenn Ave. to us 421 in Siler City

Field Inspection - Evidence of Utilities

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes
 Water: Yes Sewer: Yes Drainage: Yes Other: No

Anticipated Relocation

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes
 Water: Yes Sewer: No Drainage: No Other: No

Summary: Best Fit Option					
Requesting Party: Jeffrey Teague, PE					
Estimate Date:					
Relocation Totals		Construction Total		Alternate Totals	
Power Poles:	\$980,000.00	Power Poles:		Relocation Total	\$1,266,020.00
Power Items:		Power Items:		Construction Total	\$474,000.00
Telephone Poles	\$286,020.00	Telephone Poles		Alternate Total	\$1,740,020.00
Telephone Items		Telephone Items			
Gas Line:		Gas Line:			
Gas Items:		Gas Items:			
Water Line:		Water Line:	\$450,000.00		
Water Items:		Water Items:	\$24,000.00		
Sewer Line:		Sewer Line:			
Sewer Items:		Sewer Items:			
Misc. Items:		Misc. Items:			



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

May 14, 2018

TIP NO: U-5737

ESTIMATE TYPE: P

MEMORANDUM TO: Mr. Mike Stanley, PE
Central PDB Manager

FROM: Nidal Albadawi, PE
Preliminary Estimates Engineer

SUBJECT: Cost Verification - Project U-5737, CHATHAM County
US 64 (EAST 11TH STREET) FROM NORTH GLENN AVENUE TO US 421 IN
SILER CITY

The construction cost shown in the current TIP is \$9,780,000.

Cost Estimate	Prior Verified	Latest Verified	Difference	%
Construction		\$12,900,000.00		

This is the first verification letter for this project.

Est. Requested by: Mr. Jeff Teague, PE

Est. Prepared by: Nidal Albadawi, PE

cc: Mr. Ron Hancock, PE
Ms. Brenda Moore, PE
Mr. Brian Hanks, PE
Mr. Ron Davenport, Jr., PE
Mr. Majed Al-Ghandour, PhD, PE

Mr. Bobby Lewis, PE
Ms. Nadia Al-Dhalimy, PE
Mr. Van Argabright, PE
Mr. Jon Weathersbee, PE

Mr. Brandon Jones, PE
Mr. Jeffrey Teague, PE

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARD AND DEVELOPMENT
1591 MAIL SERVICE CENTER
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900
Fax: (919) 250-4127
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH, NC 27610



Appendix 2 GeoEnvironmental Information

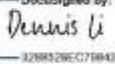


PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

June 16, 2016

MEMORANDUM TO: April A. Annis
Project Development Engineer
Project Development and Environmental Analysis Branch

FROM: Dennis G Li, Ph.D., L.G. ^{DocuSigned by:}
GeoEnvironmental Project Manager  6/16/2016
GeoEnvironmental Section
Geotechnical Engineering Unit

TIP NO: U-5737
WBS: 54027.1FR1
COUNTY: Chatham
DIVISION: 8
DESCRIPTION: US 64 (EAST 11TH STREET) FROM SR 1317 (GREENSBORO AVENUE)
TO US 421 IN SILER CITY UPGRADE ROADWAY TO INCLUDE
MEDIAN FOR ACCESS CONTROL, SIDEWALKS, CROSSWALKS,
BICYCLE LANES AND/OR MULTI-USE SIDEPATH

SUBJECT: Pre-Scoping Comments

The GeoEnvironmental Section searched the GIS databases within the given project study area to identify known potential hazardous waste sites. Twenty One (21) UST facilities and one (1) junk yard were identified within the project area. Refer to the attached table and figures for a list of sites of concern and their anticipated impacts.

A detailed study of the preferred alternative should be performed to field verify the hazardous waste sites and identify unknown sites. This detailed study should be included in the environmental document.

cc:

John Pilipchuk, L.G., PE, State Geotechnical Engineer
Glenn Mumford, PE, State Roadway Design Engineer
David Chang, Ph.D, PE, State Hydraulics Engineer
Tom Koch, PE, Assistant State Structures Engineer
Charles Brown, PE, PLS, State Locations and Surveys Engineer
Ronald Wilkins, PE, State Utilities Manager
Aaron Griffith, PE, Area Bridge Construction Engineer
Brad Bass, Division 8 Right of Way Agent
Eric Williams, PE, Geotechnical Regional Manager
Cheryl A. Youngblood, L.G, Regional Geological Engineer
Steve Grimes, ROW Unit, Negotiations, State Negotiator
row-notify@ncdot.gov; roadwaydesign@ncdot.gov
File

 Nothing Compares™

State of North Carolina | Department of Transportation | Geotechnical Engineering Unit
1020 Birch Ridge Drive | 1309 Mail Service Center | Raleigh, NC 27609-1309
919 707 6850



US 64 CORRIDOR STUDY

WBS: 54027.1.FR1
T.I.P.#: U-5737
Page 2 of 5

Table
USTs, Landfills & Other Potentially Contaminated Sites

Site #	Type	Location	UST Facility ID #	Property Name	UST Owner / Property Owner	Anticipated Impact	Anticipated Risk	Comments
1	UST	214 W 11 th Street	N/A	T&E Tax Services (Former Gray's Live Bait Shop)	Unknown	LOW	LOW	Possible Former Gas Service Stations.
2	UST	1103 N 2 nd Ave.	0-021003	Siler City Driver's License Dept.	Siler City	LOW	LOW	One current, one closed in 1999.
3	UST	736 N 2 nd Ave.	N/A	Chatham Car Care (Vacant)	Unknown	LOW	LOW	Possible USTs
4	UST	910 N 2 nd Ave.	N/A	Plata Y Oro Buyers	Unknown	LOW	LOW	Possible USTs
5	UST	1010 Greensboro Ave.	0-001191	Farmers Pantry	Unknown	LOW	LOW	GWI# 26981.
6	UST	201 E 11 th Street	0-011139	Citgo (Pantry # 3297)	Unknown	LOW	LOW.	Active Gas Station GWI# 27878/26659
7	Junk Yard	211 E 11 th Street	N/A	Marsh Auto Parts	Unknown	LOW	LOW.	Junk Yard
8	UST	320 E 11 th Street	0-007596	Speedway (Former Service)	Steve Williams	LOW	LOW.	Active Gas Station GWI# 20471 (6 UST closed in 1998) 5 Current USTs.
9	UST	702 E 11 th Street	N/A	Phil's Barber Shop	Unknown	LOW	LOW.	Possible former gas services station



US 64 CORRIDOR STUDY

WBS: 54027.1.FR1

T.I.P.#: U-5737

Page 3 of 5

Table
USTs, Landfills & Other Potentially Contaminated Sites

Site #	Type	Location	UST Facility ID #	Property Name	UST Owner / Property Owner	Anticipated Impact	Anticipated Risk	Comments
10	UST	913 Martin Luther King Jr. Blvd	N/A	N/A	Unknown	LOW	LOW	Possible former gas services station (Old Store)
11	UST	801 E 11 th Street	0-035903	Mystik (Former Stovall's Mini Mart)	Cary Oil Co	LOW	LOW	Active Gas Station GWI# 24266
12	UST	801 E 11 th Street	0-007479	Baker Limestone Co	Baker Limestone Co	LOW	LOW	Closed Out 2010 Possible Former Gas Station GWI# 16161
13	UST	1212 E 11 th Street	0-007115	Five-Star	Billy Siler Jr.	LOW	LOW	Closed Out 2010 Possible Former Gas Station GWI# 22508
14	UST	1101 E 3rd Street	0-032430	Townsend's Inc.	Townsend's Inc.	LOW	LOW	Poultry Process Plant; Active USTs in service.
15	UST	1200 E 3rd Street	0-011069	Glendale Hosiery Co.	Glendale Hosiery Co.	LOW	LOW	Active USTs GWI# 10572
16	UST	1320 E 11 th Street	N/A	Valvoline Express Care	N/A	LOW	LOW	Possible Former Gas Station
17	UST	1212 E 11 th Street	0-007115	Tank & Tummy	PUGH OIL CO INC	LOW	LOW	GWI# 33570, 4 USTs closed in 1995, 5 USTs current.
18	UST	1402 E 11 th Street	N/A	Chatham Chevrolet	Chatham Chevrolet	LOW	LOW	GWI# 33570



WBS: 54027.1.FR1
 T.L.P.#: U-5737
 Page 4 of 5

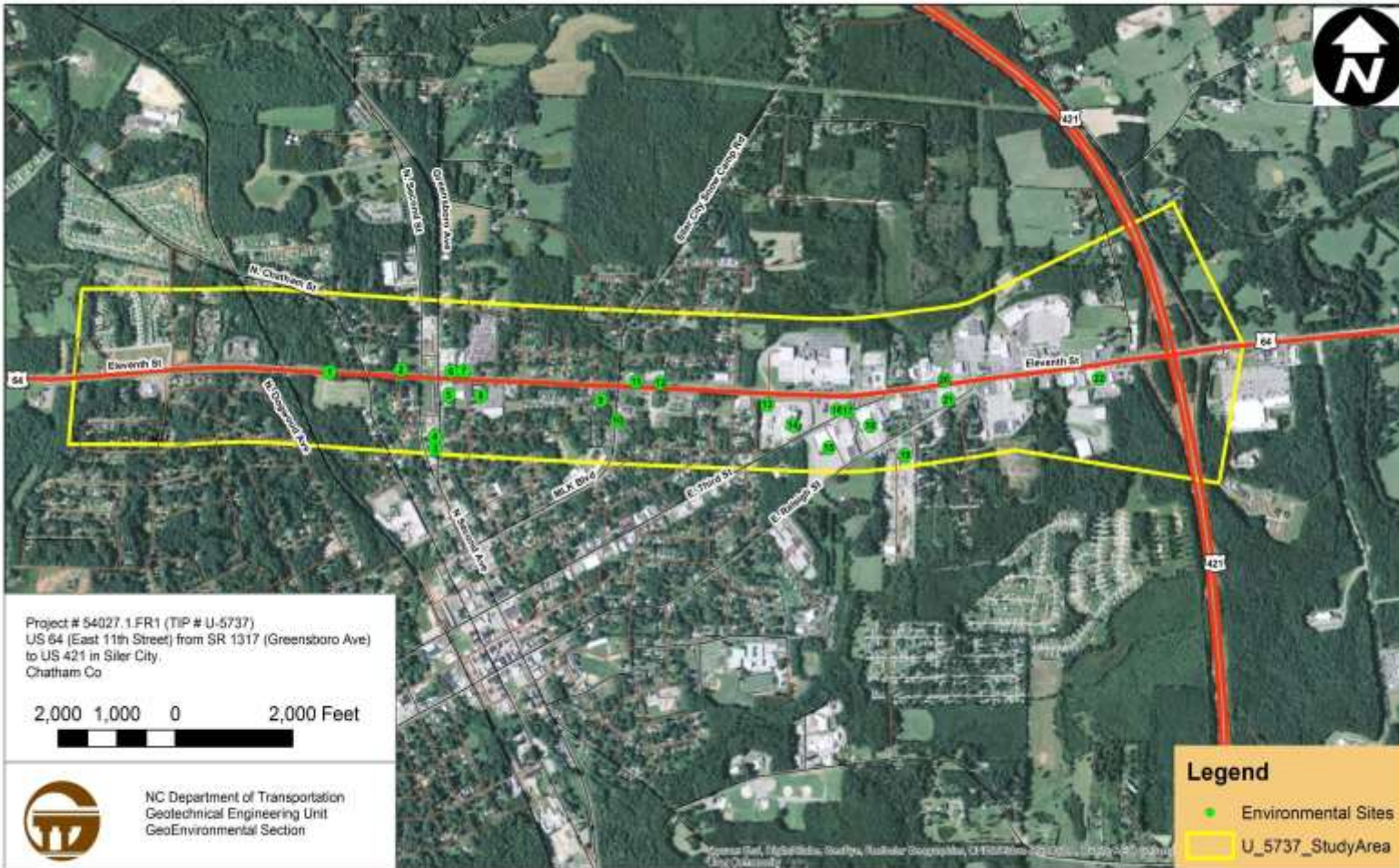
Table
USTs, Landfills & Other Potentially Contaminated Sites

Site #	Type	Location	UST Facility ID #	Property Name	UST Owner / Property Owner	Anticipated Impact	Anticipated Risk	Comments
19	UST	1404 E 11 th Street	N/A	NCDOT - Siler City (County Maintenance)	NCDOT	LOW	LOW	GW1# 8014
20	UST	1513 E 11 th Street	0-035689	Pantry 3839 Kangaroo Express (Former Stovall's Mini Mart)	Cary Oil Co	LOW	LOW	Active Gas Station GW1# 24266
21	UST	1516 E 11 th Street	0-021417	Park N Shop The Pantry # 267	The Pantry Inc	LOW	LOW	Active Gas Station GW1# 39592
22	UST	1740 E 11 th Street	00-0-0000035777	The Pantry # 3192	The Pantry Inc	LOW	LOW	Active Gas Station (New)



US 64 CORRIDOR STUDY

Appendix A
Locations of USTs, Landfills, & Other Potentially Contaminated Site





Appendix 3 Cultural Resources Survey Forms

**US 64 CORRIDOR STUDY**Project Tracking No.
16-06-0058**NO ARCHAEOLOGICAL SURVEY REQUIRED 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-5737 *County:* Chatham
WBS No.: 54027.1.2 *Document:* Federal Programmatic Categorical
 Exclusion
Federal Aid No.: NHP- *Funding:* State Federal
 0064(181)
Federal Permit Required? Yes No *Permit Type:* N/A

Project Description: Upgrade US 64 (East 11th St.) from west of N. Glenn Ave. to US 421 in Siler City in Chatham County. The Area of Potential Effects (A.P.E.) is approximately 4.6 kilometers (2.9 miles) long. The width is unknown. No design plans provided. No easements will be required.

SUMMARY OF CULTURAL RESOURCES REVIEW*Brief description of review activities, results of review, and conclusions:*

The review included an examination of a topographic map, an aerial photograph, and listings of previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (O.S.A.). US 64 is oriented approximately east-west.

The topographic map (Siler City, N.C.) shows the western half of the A.P.E. is in a developed part of Siler City. The A.P.E. is located on a ridge and there are no stream crossings. The eastern half of the A.P.E. outside of Siler City has structures scattered along the both sides of the road. Ridges have a low to moderate potential for archaeological sites.

The aerial photograph shows the A.P.E. is developed on both sides of US 64.

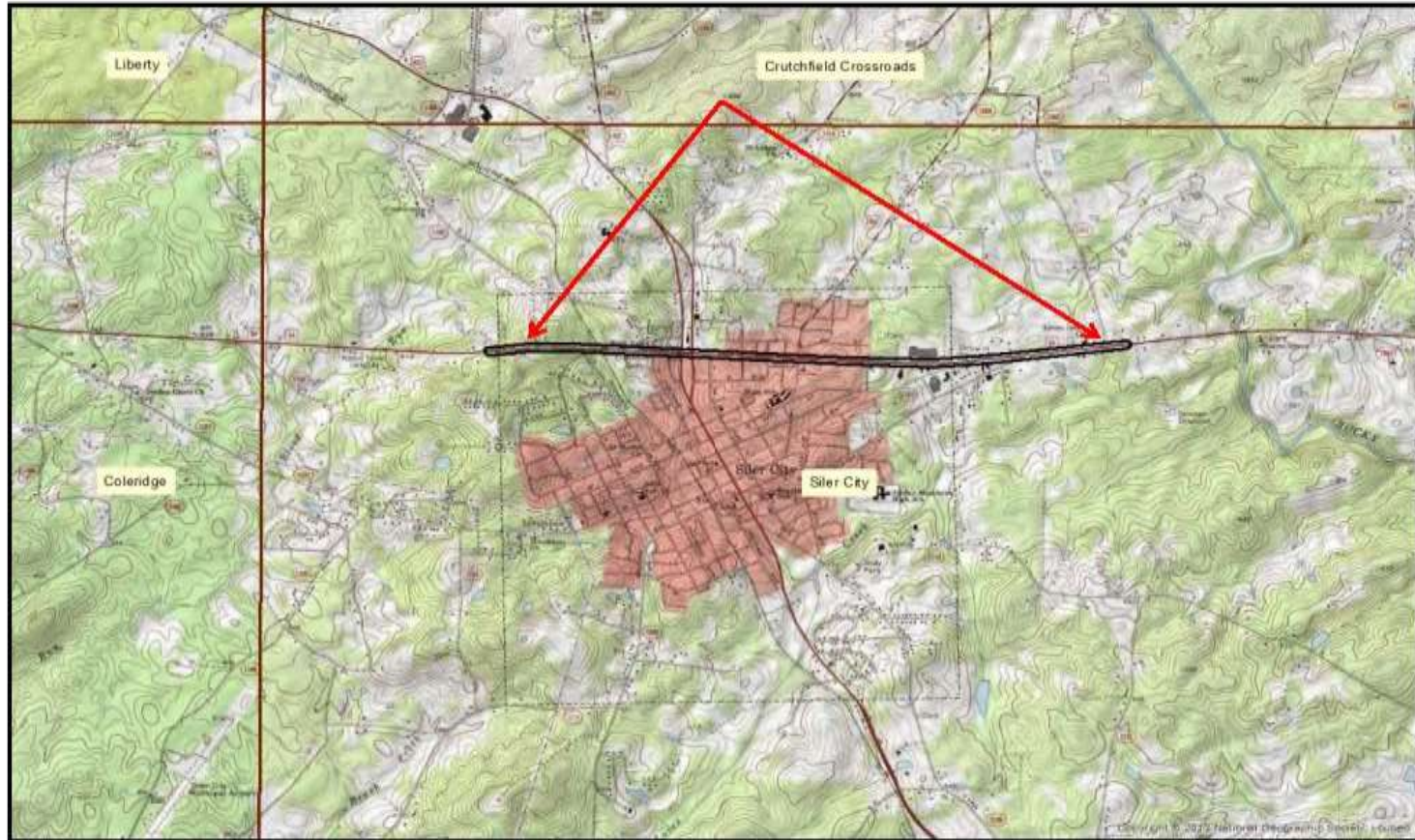
A review of information at the O.S.A. shows several projects have been reviewed along US 64 within or adjacent to the A.P.E. No archaeological survey was recommended for any of them. The US 421 Bypass is located at the east end of the A.P.E. for this project. An archaeological survey was conducted prior to the construction of US 421 (Cable and Mueller 1980). The US 421 survey recorded sites 31CH429 and 31CH427 on the north and south sides of US 64. US 64 to the east of the US 421 Bypass has also been surveyed for archaeological sites (Lautzenheiser 1989). That survey recorded sites 31CH677 and 31CH 676 on the south side of US 64 a short distance to the east of US 421.

References Cited

Cable, John S. and James W. Mueller
 1980 The Cultural Resources Survey and Evaluation of US 421 from Siler City to Staley,



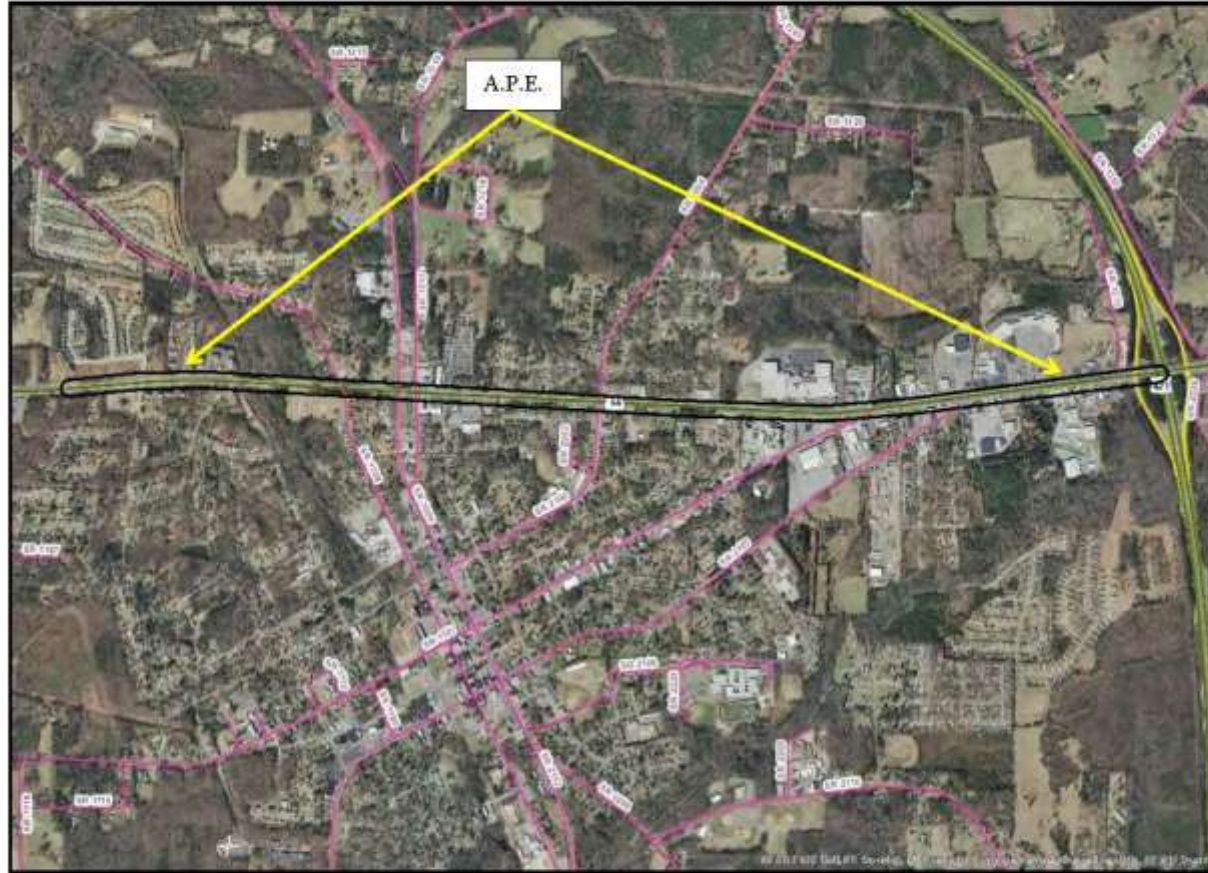
US 64 CORRIDOR STUDY



"No ARCHAEOLOGY SURVEY REQUIRED" form for Minor Transportation Projects as Qualified in the 2015 Programmatic Agreement
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US 64 CORRIDOR STUDY



"No ARCHAEOLOGY SURVEY REQUIRED" form for Minor Transportation Projects as Qualified in the 2015 Programmatic Agreement
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Project Tracking No. (Internal Use)

16-06-0058
UPDATE



**HISTORIC ARCHITECTURE AND LANDSCAPES
NO HISTORIC PROPERTIES PRESENT OR AFFECTED 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-5737	County:	Chatham
WBS No.:	54027.1.1	Document Type:	PCE
Fed. Aid No.:	NHP-0064	Funding:	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
Federal Permit(s):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Permit Type(s):	N/A
Project Description: Upgrade US 64 (East 11 th Street) from SR 1317 (Greensboro Avenue) to US 421 in Siler City. Median for access control, sidewalks, crosswalks, bicycle lanes and/or multi-use side path.			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are no properties within the project's area of potential effects.
- There are properties over fifty years old within the area of potential effects, but they do not meet the criteria for listing on the National Register.
- There are no historic properties present or affected by this project. (Attach any notes or documents as needed.)

Date of field visit:

Description of review activities, results, and conclusions:

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on July 7, 2016. In December of 2016 it was determined that there were no National Register listed or eligible properties within the Area of Potential Effects. In January 2017, an expanded APE was evaluated, which is defined on the following maps. Near the westernmost portion of the expanded APE lies the Hadley-Peoples' Mill Village, a surveyed-only mill village community (CH0506). The district will not be affected by this project as the proposed work is not anticipated to extend past Memorial Drive and the limits of the village lie south of Oakwood Cemetery. Oakwood Cemetery itself is unremarkable and is characterized by modern burials; it is not eligible for National Register listing. Near the easternmost portion of the APE is the determined eligible Hackney's Mill (CH0473). The property will not be affected by this project as the boundaries of the mill are not within the expanded APE. No unidentified properties over fifty years of age within the expanded APE are eligible for National Register listing based on Google Maps Street view. There are no historic properties affected by this project. If design plans change, additional review will be required.

Historic Architecture and Landscapes NO HISTORIC PROPERTIES PRESENT OR AFFECTED form for Minor Transportation Projects as Qualified in the 2007 Programmatic Agreement.



SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes – **NO HISTORIC PROPERTIES PRESENT OR AFFECTED**

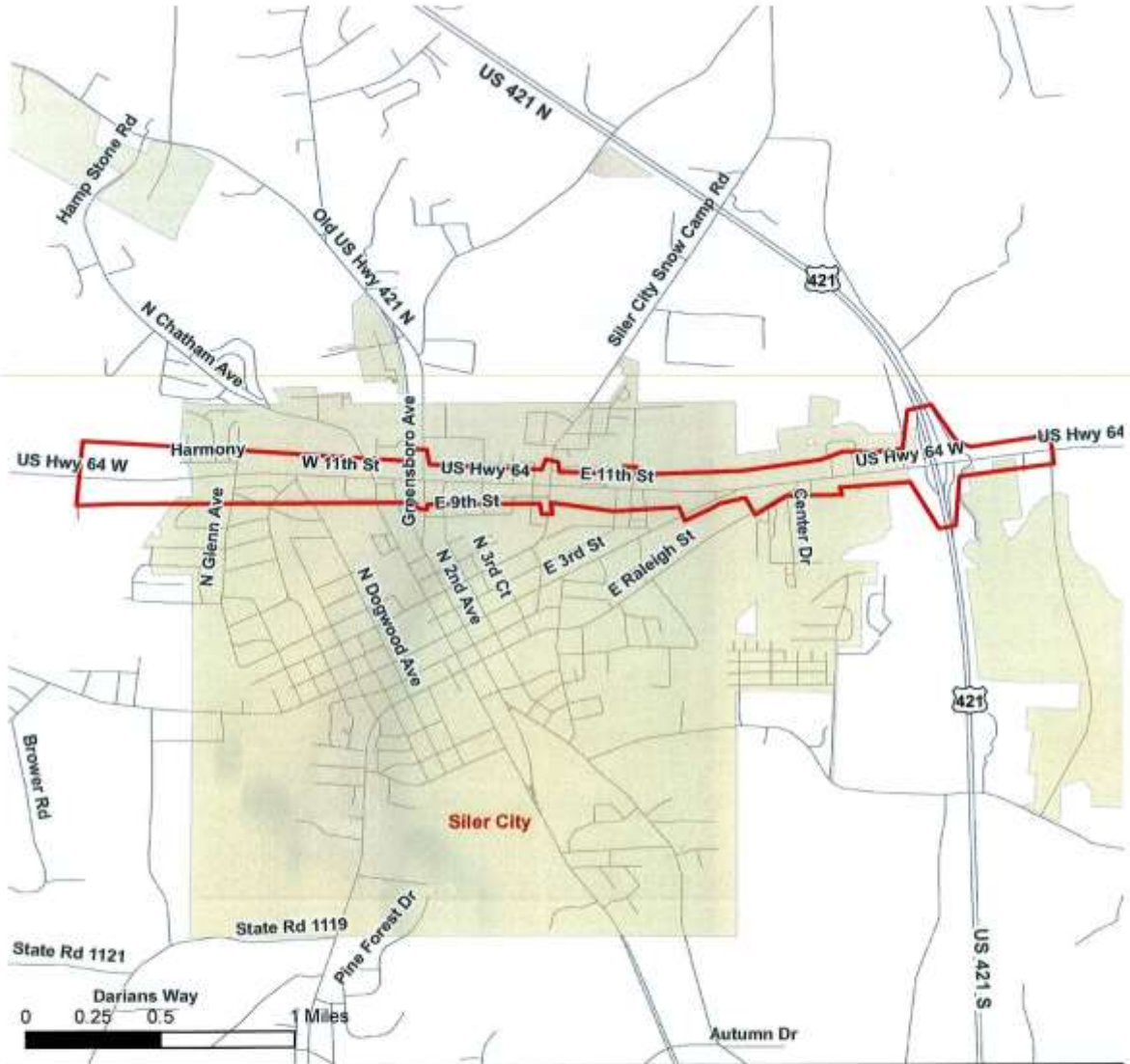
Kate Hubbard

1/24/2017

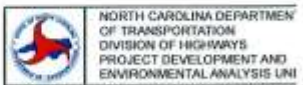
NCDOT Architectural Historian

Date

ROUTE 64 US 64 CORRIDOR STUDY



- Roads
- ▭ U-5737 Study Area
- ▭ Municipal Boundary
- ▭ County Boundary



U-5737
US 64 (11TH STREET) IMPROVEMENTS
CHATHAM COUNTY
WBS. No. 54027.1.FR1
Federal Aid No. NHP-0064(181)

VICINITY MAP

Resource: NCDOT GIS, NCDENR DWG, USGS



Western end of expanded APE, from Greensboro Avenue to W. Shannon Road.



Eastern end of expanded APE, from 421 to Progress Boulevard.

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Hackney's Mill National Register Boundary in Yellow. Outside of the APE and will not be affected by this project.

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US 64 CORRIDOR STUDY

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