

STANTONSBURG ROAD / TENTH STREET CONNECTOR
From Memorial Drive to SR 1702 (Evans Street)
Greenville, Pitt County, North Carolina
WBS No. 35781.1.1
Federal Aid No. STP-0220(26)

TIP PROJECT NO. U-3315

ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation

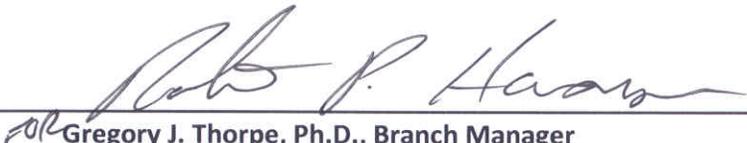
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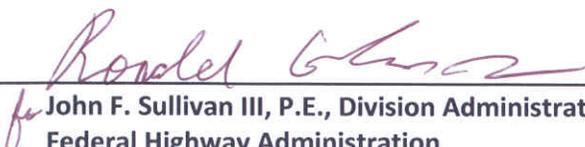
and

North Carolina Department of Transportation

Division of Highways

APPROVED:

9/28/10
Date  _____
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Project Development and Environmental Analysis Branch
North Carolina Department of Transportation

9/29/10
Date  _____
for John F. Sullivan III, P.E., Division Administrator
Federal Highway Administration

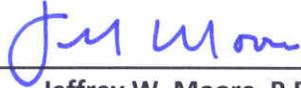
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ENVIRONMENTAL ASSESSMENT

Document Prepared by:
Kimley-Horn and Associates, Inc.
for
The City of Greenville

9/27/10



Date

Jeffrey W. Moore, P.E., Project Manager
Kimley-Horn and Associates, Inc.

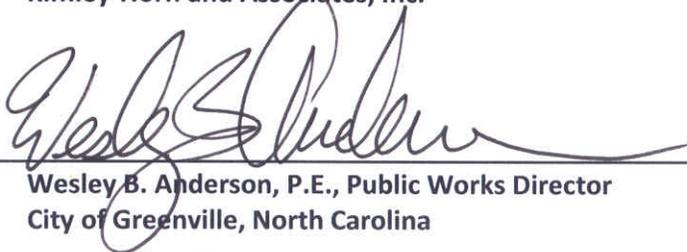
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PROJECT COMMITMENTS

STANTONSBURG ROAD / TENTH STREET CONNECTOR

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Roadway Design Unit / Utility Coordination Unit:

- The North Carolina Department of Transportation (NCDOT) will coordinate with the North Carolina Department of Environment and Natural Resources (DENR) Public Water Supply Plan Review Section to obtain approval of plans and specifications prior to construction if modifications to the water distribution systems are proposed.

Roadway Design Unit:

- During final design, NCDOT will coordinate with the City of Greenville to determine sidewalk or multi-use path width. Sidewalks will be at least 5 feet wide in accordance with AASHTO standards.

Roadway Design Unit / Rail Division:

- Subsequent to FONSI approval, NCDOT will contact CSX Transportation during final design to verify and/or negotiate future railroad needs along the 'AA' line. Bridge design will be based on railroad requirements. Roadway profiles will allow UNX Corporation to retain their spur track along Pitt Street. All information relating to the railroad such as track alignment, horizontal and vertical clearances related to proposed bridges, additional and future track layout requirements, location of maintenance roads and flagging protection requirements will be submitted to CSXT for verification prior to construction.

Project Development and Environmental Analysis (PDEA) Branch:

- NCDOT will develop a Memorandum of Agreement with the City of Greenville to address cost-share on non-standard design elements such as: bridge and cross-section design, multi-use path, sidewalk, additional landscaping, and street lighting.
- During final design, NCDOT will coordinate with the State Historic Preservation Office (HPO) on contract specifications for a brick-façade treatment on the bridge approach retaining walls, the type of bridge guardrail, landscape treatment through the Tobacco Warehouse Historic District and the Dickinson Avenue Historic District (see p. 70), design of a pedestrian or multi-use path on either side of the bridge, and the location of the bridge approach near the CSX rail spur (so that the design returns to existing grade). NCDOT also will coordinate final signage through the Tobacco Warehouse Historic District with HPO.

Project Development and Environmental Analysis (PDEA) Branch / Roadway Design Unit:

- HPO issued the following determination for Alternative J-Modified:
 - No Adverse Effect on the Tobacco Warehouse Historic District and Boundary Increase if the right of way is restricted to 120 feet wide and the design returns to existing grade before the Historic District Boundary.
 - No Effect on the Pure Oil Station (located on the northwest corner of Tenth and Evans Streets), given that the roadway taper ends before the property boundary and ties into the existing curb. Final roadway design must require no permanent easement or property taken from this parcel.

Project Development and Environmental Analysis (PDEA) Branch / Right of Way Branch:

- During the right of way acquisition phase, NCDOT will coordinate with the City of Greenville on the implementation of the City's Tenth Street Supplemental Relocation Program, which will be conducted as a supplement to the relocation assistance administered by NCDOT through the Uniform Relocation Act.

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Executive Summary

1. Type of Action

This Environmental Assessment (EA) has been prepared for the Federal Highway Administration (FHWA) in accordance with 23 CFR Part 771 for the purpose of evaluating the potential impacts of a proposed transportation improvement project.

2. Description of Action

The City of Greenville and the North Carolina Department of Transportation (NCDOT) propose to directly connect Stantonsburg Road with Tenth Street, including a grade separation at the CSX Transportation (CSX) Rail Line. The new road will be a multi-lane facility on new and existing location. The proposed project connects Stantonsburg Road with Tenth Street to provide a critical east-west connection across Greenville and also is intended to provide a gateway entrance into downtown Greenville. Project vicinity and study area maps are shown in **Figures 1 and 2**. Photographs along the study corridor are included on **Figure 3**.

Specifically, this project proposes to widen Farmville Boulevard beginning at Memorial Drive (150-foot typical section), connect Farmville Boulevard on new location to Tenth Street, cross Dickinson Avenue and the CSX Rail Line with a grade separation, and widen Tenth Street (120-foot typical section) to Evans Street.

This project is included in the *NCDOT 2011-2020 Draft State Transportation Improvement Program (STIP)* as Project U-3315. The *2011-2020 STIP* indicates that right-of-way acquisition is scheduled to begin in Federal Fiscal Year (FFY) 2012, and construction is scheduled to begin in FFY 2014. Project U-3315 is included in the *2005 Greenville Urban Area Thoroughfare Plan* as a proposed major thoroughfare.

3. Summary of Purpose and Need

The purpose of the proposed action consists of the following:

- Provide a grade-separated connection at the CSX Rail Line from the eastern part of Greenville to Pitt County Memorial Hospital (PCMH) / Health Science campus to improve emergency access.
- Increase direct connectivity between PCMH / Health Science campus, downtown Greenville, East Carolina University (ECU)'s main campus, and areas to the east and west of these locations and create a direct connection between Stantonsburg Road and Tenth Street to improve vehicular, pedestrian, and bicycle access, and to maintain acceptable traffic level of service in the future.
- Provide a "gateway" into the City of Greenville that conforms with currently approved transportation enhancement and comprehensive plans.

The need to directly connect Stantonsburg Road to Tenth Street, provide a grade separation at the CSX Rail Line, and provide a gateway corridor is demonstrated by the following summary of existing and projected conditions and plans:

- *Connectivity* – A need for greater connectivity exists between:
 - PCMH and areas to the east;
 - Downtown Greenville / ECU main campus with areas to the west; and
 - The main ECU campus and the Health Science campus.

As ECU, PCMH, and Greenville continue to grow, the demand to move east-west and from one side of Greenville to the other side also will increase. In addition to motorized vehicular access, this need includes improved pedestrian and bicycle facilities. Currently, the most direct travel path from Stantonsburg Road / Memorial Drive to Tenth Street / Evans Street is along Farmville Boulevard, Fourteenth Street, Dickinson Avenue, and Tenth Street, which includes three (3) 90-degree turns at signalized intersections. This path carries between 12,200 vehicles per day (vpd) and 15,400 vpd. Future traffic volumes are anticipated to increase between 22,800 and 28,300 vpd by 2030. Existing levels of service (LOS) range from LOS B to LOS D. Future conditions are projected to deteriorate to unacceptable levels of service (LOS E or F) at four (4) intersections.

- *Grade Separation / Emergency Access* – No direct route exists from east Greenville to PCMH / Health Science campus without at-grade crossings of the north-south CSX railroad track. The proximity of the railroad switching yard (see **Figure 1**) frequently causes trains to block all of the major east-west corridors providing access to the hospital. This critically impacts travel time and access for emergency vehicles and citizens with medical emergencies approaching or departing the hospital campus from central and east Greenville, as well as many parts of eastern North Carolina, since PCMH is the primary major medical center serving the northeastern part of the state. Additionally, there is no predictability concerning the train movements; consequently, public safety officials have no advance notice regarding when these roads will be blocked. A grade separation meets a critical need to improve safety and provide unimpeded access to the PCMH service area from east of Greenville.
- *Gateway* – The need for a gateway corridor was identified by community members at public meetings and during interviews conducted with stakeholders. Currently, the City of Greenville does not have a “gateway” entrance into the City from the west or a shared sense that roads entering the City from the west offer any sense of arrival or welcome. The existing road network does not provide visitors a clear direction to the locations of key facilities. The Stantonsburg Road / Tenth Street Connector Project is shown in the City’s comprehensive plan, *Horizons*, as both a gateway corridor and a connector corridor. The proposed project would function as an important entranceway to the City (gateway corridor) and would carry high volumes of traffic traveling at moderate speeds into and through the City (connector corridor).

4. Alternatives Considered

Before developing any initial alignment options, the project team began public involvement activities to solicit input from local residents and stakeholders. The first Community Informational Workshop (CIW) for this project was held at Sheppard Memorial Library in Greenville on January 30-31, 2006. Attendees were asked to express their ideas for the project by sketching corridors on aerial mapping. Six (6) alignment options (Options A, B, C, D, E, and F, included on **Figures 7 and 8**) were suggested at this time and are described below.

The No Build Alternative would not directly connect Stantonsburg Road with Tenth Street or alleviate traffic delays caused by the intersection with the CSX Rail Line. In addition, the No Build option would not fulfill local plans to create a “gateway” into Greenville. The No Build Alternative would not incur any right of way or construction impacts, but it does not address the issues identified in the purpose and need for the project. It is not compatible with NCDOT’s or the City’s transportation goals and would not meet regional transportation needs or project objectives. The No Build Alternative has been retained in this document to serve as a basis for comparing impacts and benefits of the Build alternatives but was eliminated as a viable alternative by the Steering Committee in November 2007.

Option A – Widens existing roads along Farmville Boulevard, Fourteenth Street, and Dickinson Avenue. Creates a railroad grade separation with the intersection of Tenth Street and Dickinson Avenue.

Option B – Proposes the entire project be built on a bridge, beginning west of Bancroft Avenue and continuing to Tenth Street east of the railroad.

Option C – Widens Farmville Boulevard, and then uses new location, curving north, to Spruce Street. Widens Spruce Street to Columbia Avenue. Uses new location from Columbia Avenue to Tenth Street, including grade separation with the railroad and Dickinson Avenue.

Option D – Widens Farmville Boulevard, and then uses new location, curving south, to Tenth Street. Includes a grade separation with the railroad and Dickinson Avenue.

Option E – Uses / widens Memorial Drive from Stantonsburg Road to West Fifth Street (formerly Martin Luther King, Jr. Drive). Widens West Fifth Street from Memorial Drive to McKinley / Ward Street. On new location, connects West Fifth Street from McKinley / Ward Street to Tenth Street, using a grade separation with the railroad.

Option F – Beginning at Moyer Boulevard and Stantonsburg Road, follows Moyer Boulevard southeast to Chestnut Street. Beginning approximately at Chestnut Street, uses new location to the east / northeast to connect to Dickinson Avenue. Follows Dickinson Avenue to Tenth Street, including a grade separation with the railroad with Dickinson Avenue to Tenth Street as the major movement.

Following the workshop, three (3) additional options (Options G, H, and J, included on **Figures 9, 10, and 11**) were developed by the project team. Options G, H, and J (described below) are variations of the citizens' Option C with modifications to avoid impacts to specific community features while still meeting the project purpose. Due to similarity of appearance to the number "1," there were no options named "Option I."

Option G – Widens Farmville Boulevard to the south, and then uses new location, curving north (parallel to Spruce Street) from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street predominantly to the north to Evans Street.

Option H - Widens Farmville Boulevard to the north, and then uses new location from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street predominantly to the north to Evans Street.

Option J - Widens Farmville Boulevard symmetrically, and then uses new location, curving south, from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street symmetrically to Evans Street.

On September 27, 2006, NCDOT and FHWA reviewed the nine (9) initial alignment options and noted that Options A, B, D, E, and F did not appear reasonable and/or feasible (for reasons explained in **Section III.A.4.**). NCDOT and FHWA suggested showing Options C and G in a combined corridor and Options H and J in a combined corridor (due to similarity of alignment) to allow flexibility in design. The Steering Committee (consisting of representatives from the City of Greenville, NCDOT, Pitt County Memorial Hospital, and East Carolina University) agreed on October 17, 2006 that Options C, G, H, and J should be studied in further detail. The committee also agreed that Options C, G, H, and J should be shown in two corridors, with one corridor including Options C and G, and the other corridor including Options H and J. On October 30, 2006, NCDOT suggested that the corridors should be combined into one large corridor, with the Options shown in different colors. These nine (9) initial alignment options were presented to the community at the January 2007 workshop. Options C, G, H, and J were shown on maps individually and in a combined study corridor (shaded in yellow, as shown on **Figures 9-14**), with the recommendation to study Options C, G, H, and J in more detail. The yellow study corridor was designed to be sufficiently wide enough to accommodate several widening and new location alignments that were variations of Option C.

After reviewing Options G and J further, the project team recognized that slight changes to the alignment would potentially result in fewer relocation impacts. The corridors of Options G and J were slightly modified (referred to as "Option G-Modified" and "Option J-Modified") based on environmental constraints, local issues, and citizens' concerns to reduce potential impacts. Options G-Modified and J-Modified are described below and are also shown in **Figures 12 and 14**. Proposed roadway improvements for Options G-Modified and J-Modified begin on the south side of the intersection of Farmville Boulevard and Memorial Drive to avoid impacts to Mt. Philippi Church of Christ (now Sycamore Chapel Baptist Church).

Option G-Modified - Option G-Modified widens Farmville Boulevard to the south, curves slightly north onto new location, and widens Tenth Street to the north, as shown in **Figure 12**.

Option J-Modified - Widens Farmville Boulevard to the south for approximately 0.1-mile, transitions to symmetrical widening, curves slightly north onto new location between Fourteenth Street and Dickinson Avenue, and widens Tenth Street to the north to Evans Street, as shown in **Figure 14**.

Based on public input about local issues and concerns and estimated impacts, the Steering Committee eliminated the No Build option and Options A, B, C, D, E, and F from further consideration on November 29, 2007. In a meeting with the City and NCDOT on February 19, 2008, Options G-Modified, H, and J-Modified were re-named Alternative G-Modified, Alternative H, and Alternative J-Modified. Throughout 2008 and 2009, various small group meetings, workshops, Steering Committee meetings, local officials meetings, and Citizens Advisory Committee (CAC) meetings were held to discuss Alternatives G-Modified, H, and J-Modified. The project team analyzed public input, recommendations from the CAC, approved technical reports, information, and studies completed for this project over the past four years. On November 17, 2009, the Steering Committee voted to move forward with Alternative J-Modified as the Preferred Alternative into the Environmental Assessment and Public Hearing process.

5. Preferred Alternative

FHWA, NCDOT, and the City of Greenville prefer Alternative J-Modified. Preliminary roadway designs for Alternative J-Modified are shown in **Figure 16A-C**, and typical sections are included in **Appendix F**. Alternative J-Modified proposes to widen Farmville Boulevard asymmetrically to the south for a total typical section width of 150 feet, beginning at Memorial Drive to approximately 0.1-mile east. Alternative J-Modified then transitions to symmetrical widening on Farmville Boulevard (same 150-foot typical section) and uses new location between Fourteenth Street and Dickinson Avenue. The typical section width narrows to 83 feet on the bridge crossing the CSX Rail Line and Dickinson Avenue. From the easternmost bridge approach to Evans Street, Alternative J-Modified widens Tenth Street to the north with a 120-foot typical section.

6. Summary of Environmental Effects

The Preferred Alternative is anticipated to have the following impacts on the natural and human environment, as summarized below and included in **Table S-2**:

Natural Resources

There are no streams, wetlands, High Quality Waters, or Outstanding Water Resources in the project study area and therefore no impacts to these resources. There are no specific biotic communities in the project study area. The Preferred Alternative is not anticipated to affect any federally protected species or federal species of concern. Although hydric soils are present in the project study area, they are drained due to the developed urban environment.

Cultural Resources

FHWA, in consultation with the North Carolina State Historic Preservation Office (HPO), determined on June 30, 2009 that the Preferred Alternative will have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, Perkins Town – Cherry View Historic District, or the Pure Oil Station (given commitments listed in **Section V.B.1.**). Historic resources and community facilities are shown on **Figure 17.**

It was determined that the proposed project would have No Adverse Effect on the Tobacco Warehouse Historic District and Boundary Increase given the conditions that the roadway returns to existing grade before the Historic District boundary and is restricted to a 120-foot total right of way width from the eastern bridge approach to Evans Street. It was also determined that the proposed project would have No Adverse Effect on the Dickinson Avenue Historic District, with the commitment that coordination occurs between the NCDOT Historic Architecture Group and HPO during final design on the following details: landscape treatment, brick-façade retaining walls, decorative guardrail on the bridge, and the pedestrian path (sidewalks on the bridge and connecting to Dickinson Avenue). There will be no impact to structures in the historic districts.

Section 4(f) / 6(f) Resources

The Preferred Alternative will have only *de minimis* impacts on Section 4(f) resources, as determined by FHWA. Therefore, no Section 4(f) Evaluation is required. FHWA issued a *de minimis* finding for the Tobacco Warehouse Historic District, noting that FHWA intends to use HPO's concurrence as a basis for the finding. Further coordination with the NCDOT Historic Architecture Group and the HPO will be necessary during final design. The Preferred Alternative will not impact any Section 6(f) resources.

Social Effects

Alternative J-Modified would require the relocation of 30 residences, 24 businesses, and seven (7) institutions. The seven (7) institutional organizations include one (1) medium-sized church, three (3) non-profit organizations, and three (3) other institutions that offer counseling, food services, and/or worship services. No schools or other community facilities would be impacted.

Although the proposed project would directly impact the Farmville Boulevard neighborhood through relocations, it would result in the least fragmentation compared with the other detailed study alternatives (see **Figure 18** for location of neighborhoods in West Greenville). Residents on Farmville Boulevard between Line Avenue / Bancroft Avenue and Fourteenth Street have expressed the desire during public meetings and through a petition to the City of Greenville to be relocated rather than having the project only impact a portion of the properties (by widening to only one side of the road). Alternative J-Modified would affect the Higgs Brothers neighborhood through relocations and changes to access. Minor impacts to cohesion are anticipated within the Higgs Brothers neighborhood and between the Higgs Brothers and Higgs Town neighborhoods.

Farmville Boulevard currently acts as a physical barrier within central West Greenville. With the construction of the connector in conjunction with other redevelopment in the area, overall connectivity

is anticipated to improve through West Greenville. The median, sidewalks, bike lanes, and landscaping elements are expected to enhance the traveling experience for residents and visitors and may encourage additional movement north and south across Farmville Boulevard and along the new connector.

The demographic study area population is 97.5% minority and 31.7% below poverty. An environmental justice analysis was performed to determine the potential impacts of this project on these residents. The analysis concluded that with the avoidance, minimization, and mitigation actions proposed as part of this project, there are no disproportionately high and adverse effects on minority and low-income populations. A benefits / burdens analysis determined that the construction of this project would result in improvements to vehicular, pedestrian, and bicycle access for minority and low-income populations, as well as for other residents in Greenville and surrounding communities. With the City's Tenth Street Connector Supplemental Relocation Program, residents on Farmville Boulevard have stated that they would prefer to live in a residential neighborhood rather than live on a four-lane road with heavy traffic; the potential benefit to residents as part of this program would only be provided to the community as part of this project.

Economic Effects

The proposed project would affect businesses through relocations, changes in access, and potential changes in pass-by travel patterns. Alternative J-Modified would require the relocation of 24 businesses, many of which are rentals. NCDOT will offer relocation assistance to businesses that will be directly impacted by this project as part of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970, as amended in 1987).

Land Use

This project is consistent with local land use and transportation plans. Although the existing land use along Farmville Boulevard (from Line Avenue / Bancroft Avenue to Fourteenth Street and through the Higgs Brothers neighborhood) is primarily residential, the proposed land uses in the *2004 Horizons Plan* indicate that the parcels along Farmville Boulevard will be converted to commercial and office / institutional / multi-family, and the land uses along the new location portion of the corridor will become mixed use / office / institutional. Current zoning is residential along Farmville Boulevard and commercial along the new location section of the Higgs Brothers neighborhood. The proposed land use changes are not a result of this project (since they were approved in 2004, before this project began). The project is in compliance with the approved local plan.

Indirect and Cumulative Effects

This project is anticipated to have no short-term and minimal long-term adverse indirect effects. The new road will provide a direct connection between West and East Greenville and is expected to reduce travel time by half. The new connector is anticipated to help facilitate a change in land use in West Greenville from residential to office / institutional / multi-family and mixed use / office / institutional, which was identified as part of the City's approved comprehensive plan. No short-term or long-term cumulative effects are expected.

Flood Hazard Evaluation

No change to a FEMA floodplain or floodway is anticipated as a result of this project.

Traffic Noise Analysis

The 2030 Alternative J-Modified condition predicted that 33 sensitive noise receivers (representing 104 dwelling units, one (1) church, and one (1) historic site) will exceed the Noise Abatement Criteria (NAC). Three (3) substantial impacts are predicted for this alternative at locations that also exceed the NAC. Temporary noise impacts during construction are expected. Noise barriers are not recommended as part of this project. Noise walls would require minimization or termination of driveways (which is not reasonable along the project corridor) and would limit sight distance to vehicles entering from side streets and adjacent neighborhoods.

Air Quality Analysis

Pitt County conforms with air attainment standards for all air pollutants regulated under the National Ambient Air Quality Standards. Neither a detailed microscale “hotspot” analysis nor a detailed PM2.5 microscale analysis is required. This project was determined to have low potential for Mobile Source Air Toxic (MSAT) effects.

Hazardous Materials

According to a geotechnical report by NCDOT (October 9, 2009), 21 possible petroleum underground storage tank (UST) facilities, four (4) dry cleaners, two (2) body shops, and one (1) garage were identified within the proposed project corridor (**Figure 19**). It is anticipated that low monetary and scheduling impacts will result from these sites. No hazardous waste sites or apparent landfills were identified within the project limits.

7. Permits Required

Since no surface waters, including streams and wetlands, were identified in the project study area, neither US Army Corps of Engineers (USACE) permits nor NC Division of Water Quality (NCDWQ) water quality certifications are anticipated for the project.

Final determination of permit applicability lies with the USACE and NCDWQ. NCDOT will coordinate with the regulatory agencies after completion of the final design to obtain the necessary permits.

8. Other Highway and Non-Highway Actions

Only one NCDOT transportation project is proposed within this project’s study area. STIP Project U-3839, a railroad crossing grade separation on Fourteenth Street south of the project, is currently unfunded.

9. Public Involvement and Coordination

As part of the public involvement process, three (3) Community Informational Workshops (CIW), two (2) sets of walk-in sessions, 20 community leader interviews, three (3) public officials meetings, and four (4)

small group meetings were held. Seven (7) Citizens' Advisory Committee (CAC) meetings and 11 Steering Committee meetings were held throughout the project development process. Public meetings were announced via newsletter or postcard and local newspaper, radio, and/or Greenville's local television station (GTV9). In addition, a website and toll-free hotline were established.

A start of study letter was mailed to agencies on December 28, 2005. Responses were received from the United States Fish and Wildlife Service (USFWS), USACE, several Divisions within the North Carolina Department of Environment and Natural Resources (DENR), the North Carolina Department of Cultural Resources, Pitt County Schools, and the City of Greenville. This project was not required to follow the NEPA / 404 Merger process. The City and NCDOT have coordinated throughout the planning and design phases of the project.

10. Cost Estimate

Table S-1 summarizes the cost estimate for Alternative J-Modified (the Preferred Alternative).

Table S-1 – Cost Estimate for Alternative J-Modified

Item	Cost Estimate for Alternative J-Modified
Construction	\$19,600,000
Right of Way	\$26,818,200
Utilities	\$1,466,670
Total Project Cost	\$47,900,000

11. Impact Matrix

Table S-2 – Impact Matrix for Alternative J-Modified

Relocations	Alternative J-Modified Impact
Residential	30
Business	24
Institutional (Church / Non-Profit)	1 / 6 ¹
Total Relocations	61
Low-Income Relocates	27
Minority Population Impacts	39
Vacant /Abandoned Properties (Not included in Relocation Total)	7
Wetlands (acres)	0
Stream Impacts (linear feet)	0
Schools Affected ²	0
Recreation Areas and Parks ³	1
Cemeteries Affected	0
Archaeological Sites Affected	0
Historic Property Impacts ⁴	No structures taken – see note below.
Federal Species Present in Corridor	0
100-Year Floodplain and Floodway Crossings	0
Hazardous Materials Sites ⁵	Low Impacts Anticipated – see note below.
Impacted Noise Receptors ⁶	33

Table S-2 Footnotes:

¹ – Includes one (1) medium-sized church; three (3) non-profits; and three (3) other institutions that offer counseling, food services, and/or worship services.

² – Sadie Saulter Elementary School will no longer operate as a regular K-5 school after the 2009-2010 school year. Instead, it will be converted to a Pre-Kindergarten center and office building.

³ – FHWA has determined that a Section 4(f) evaluation for minor impacts to the Beatrice Maye Garden Park is not required.

⁴ – NCDOT, FHWA, and HPO concurred on June 30, 2009 that Alternative J-Modified would have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, Perkins Town/Cherry View Historic District, and the Pure Oil Station (with commitments). Alternative J-Modified will have No Adverse Effect (with commitments) on the Dickinson Avenue Historic District and the Tobacco Warehouse Historic District and Boundary Increase. FHWA intends to use HPO's concurrence as a basis of a "de minimis" finding, pursuant to Section 4(f).

⁵ – Twenty-one (21) possible UST facilities, four (4) dry cleaners, two (2) body shops, and one (1) garage were identified within the project corridor. Low monetary and scheduling impacts resulting from these sites are anticipated.

⁶ – Twenty-two (22) receivers (representing 68 dwelling units and one (1) church) would exceed the NAC in the 2030 No Build condition.

12. Recommendations

Based on the project technical studies and coordination with the public and regulatory agencies, there is no indication that implementing the proposed improvements would have an overall significant adverse impact on the environment. The Preferred Alternative (J-Modified) includes widening Farmville Boulevard asymmetrically to the south beginning at Memorial Drive transitioning to symmetrical widening and then to new location before widening Tenth Street on the north side. See **Chapter IV** for a detailed physical description of the Preferred Alternative. Measures to avoid and minimize impacts to the human and natural environment have been incorporated throughout the planning stages and the development of preliminary design for the Preferred Alternative. The preparation of an Environmental Impact Statement is not recommended at this time. The determination on the format for future National Environmental Policy Act documentation for this project will be based on comments received at the Public Hearing and the comments received on this document.

13. Contact Information

The following individuals may be contacted for additional information concerning this document:

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I. Introduction

A. General Description

The City of Greenville, the North Carolina Department of Transportation (NCDOT), and the Federal Highway Administration (FHWA) propose to directly connect Stantonsburg Road with Tenth Street, including a grade separation at the CSX Rail Line. The proposed project will provide a critical, direct east-west connection across Greenville and also facilitate a gateway entrance into downtown Greenville in accordance with local plans. Project vicinity and study area maps are shown in **Figures 1 and 2**. Photographs taken along the project corridor are included as **Figure 3**.

This project is included in the *NCDOT 2011-2020 Draft State Transportation Improvement Program (STIP)* as Project U-3315. The *2011-2020 Draft STIP* indicates that right of way acquisition is scheduled to begin in Federal Fiscal Year (FFY) 2012, and construction is scheduled to begin in FFY 2014. Project U-3315 is included in the *2005 Greenville Urban Area Thoroughfare Plan* as a proposed major thoroughfare. The NCDOT Board of Transportation approved the *Comprehensive Transportation Plan Highway Map* for the Greenville Urban Area Municipal Planning Organization (MPO) on July 9, 2009.

This Environmental Assessment (EA) was prepared for a transportation action in accordance with the National Environmental Policy Act of 1969, as amended, and the North Carolina Environmental Policy Act of 1971, as amended. This action is proposed by the City of Greenville, the North Carolina Department of Transportation, and the Federal Highway Administration and is included in the *2011-2020 Draft STIP* as project number U-3315.

Copies of all technical reports referenced in this document are available for public review by contacting the City of Greenville Public Works Department or the North Carolina Department of Transportation.

B. Historical Resume and Project Status

A partnership between the City of Greenville, East Carolina University (ECU), and Pitt County Memorial Hospital (PCMH) was formed in 2003 to address the need for a direct connector between downtown Greenville / ECU main campus and PCMH / Health Science campus. This partnership funded planning studies to expedite its construction.

The Stantonsburg Road / Tenth Street Connector was first proposed in the *1994 Greenville Urban Area Thoroughfare Plan* (adopted September 1994). It is currently included in the *2005 Greenville Urban Area Thoroughfare Plan*, the *2004 Horizons* plan, and the *2005/2006 Center City-West Greenville Revitalization Plan*. Additionally, this project was first identified as funded in the *NCDOT 2004-2010 STIP*, and remains on the current *2011-2020 Draft STIP*.

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II. Purpose and Need for Project

A. Need for Project

The need to directly connect Stantonsburg Road to Tenth Street, provide a grade separation at the CSX Rail Line, and facilitate a gateway corridor is demonstrated by the following summary of existing and projected conditions and plans:

- *Connectivity* – A need for greater connectivity exists between:
 - PCMH and areas to the east;
 - Downtown Greenville / ECU main campus with areas to the west; and
 - The main ECU campus and the Health Science campus.

As ECU, PCMH, and Greenville continue to grow, the demand to move east-west and from one side of Greenville to the other side has also increased and will continue to increase. In addition to vehicular access, this need includes improving pedestrian and bicycle access.

The Health Science Campus houses ECU's Brody School of Medicine, the Leo W. Jenkins Cancer Center, East Carolina Heart Institute, other medical facilities, and numerous physicians' offices. PCMH serves as a teaching hospital for the Brody School of Medicine. In addition to the 27,000+ students enrolled at ECU in the 2009-10 academic year (an increase of 19.4% since 2005), ECU employed over 5,400 faculty and staff.

Currently, the most direct travel path from Stantonsburg Road / Memorial Drive to Tenth Street / Evans Street is along Farmville Boulevard, Fourteenth Street, Dickinson Avenue, and Tenth Street, which includes three (3) 90-degree turns at signalized intersections. This path carries between 12,200 vehicles per day (vpd) and 15,400 vpd. Future traffic volumes are anticipated to increase to between 22,800 and 28,300 vpd by 2030. Existing levels of service (LOS) range from LOS B to LOS D. Future conditions are projected to deteriorate to unacceptable levels of service (LOS E or F) at four intersections (see **Tables 1 and 2**), which will in turn compromise the entire traffic movement between Stantonsburg Road / Memorial Drive and Tenth Street.

- *Grade Separation / Emergency Access* – No direct route exists from east Greenville to PCMH / Health Science campus without at-grade crossings of the north-south CSX railroad track. The proximity of the railroad switching yard (see **Figure 1**) frequently causes trains to block all of the major east-west corridors that provide access to the hospital. This critically impacts travel time for emergency vehicles and citizens with medical emergencies approaching or departing the hospital campus from central and east Greenville, as well as many parts of eastern North Carolina. PCMH is the primary major medical center serving the northeastern part of the state and is critically important to this region. Additionally, there is no predictability concerning the train movements; consequently, public safety officials have no advance notice regarding when

these roads will be blocked. A grade separation will continue to meet a critical need to provide unimpeded, safe access to the PCMH service area from east of Greenville.

- *Gateway* – The need for a gateway corridor was confirmed by community members at public meetings and during interviews conducted with stakeholders. Currently, the City of Greenville does not have a “gateway” entrance into the City from the west or a shared sense that roads entering the City from the west offer any sense of arrival or welcome. The existing road network does not provide visitors a clear direction to the locations of key facilities. Visitors must follow an indirect route to ECU and downtown Greenville that often results in confusion for drivers, with circuitous routes that can cause delays and late arrivals. An attractive gateway corridor into Greenville would welcome visitors with clear direction for areas of interest such as the downtown, University, and Hospital. Visitors to the City, including prospective ECU students and their parents, faculty, Hospital staff and patients, and business owners and patrons, would experience a community-boosting first impression. The *Center City – West Greenville Revitalization Plan* notes, “In fact, many leaders at East Carolina University have commented that important visitors or potential employees have gotten lost trying to find the Center City and the University.”

The Stantonsburg Road / Tenth Street Connector Project is shown in the City’s comprehensive plan, *Horizons*, as both a gateway corridor and a connector corridor. The proposed project would function as an important entranceway to the City (gateway corridor) and would carry high volumes of traffic traveling at moderate speeds into and through the City (connector corridor). The *Horizons* Plan recommends careful design and development of the City’s gateway and connector corridors, including the use of canopy trees, a uniform landscaping plan, sidewalks, and accommodations for non-vehicular traffic (including pedestrian and bicycle access).

B. Purpose of Project

The purposes of the proposed action are to:

- Provide a grade-separated connection at the CSX Rail Line from the eastern part of Greenville to PCMH / Health Science campus to improve emergency access.
- Increase direct connectivity between PCMH / Health Science campus, downtown Greenville, ECU’s main campus, and areas to the east and west of these locations and create a direct connection between Stantonsburg Road and Tenth Street to improve vehicular, pedestrian, and bicycle access, and to maintain acceptable traffic level of service in the future.
- Provide a “gateway” into the City of Greenville conforms with currently approved transportation enhancement and comprehensive plans.

C. Description of Existing Conditions

1. Functional Classification

The existing network of secondary roadways consists mostly of urban undivided roadways with varying cross-sections. Primary routes as identified in **Figure 1** consist of both undivided and median-divided facilities in the surrounding area. US 264 west of Greenville is a four-lane divided freeway. US 264 turns northward approximately 2½ miles west of Memorial Drive, creating a northern loop around downtown Greenville before continuing to the east. Stantonsburg Road is classified as an urban principal arterial, and Tenth Street is classified as an urban minor arterial. Farmville Boulevard is a four-lane undivided arterial. Existing cross-sections are described in the next section.

2. Physical Description of Existing Facility

Roadway Cross Section

The most commonly-traveled corridor between Stantonsburg Road and Tenth Street consists of several linked roads, including Farmville Boulevard, Fourteenth Street, and Dickinson Avenue (see **Figure 2**). Stantonsburg Road is a five-lane roadway (including a two-way left-turn lane) until it reaches Memorial Drive. East of Memorial Drive, the road becomes Farmville Boulevard and is a four-lane undivided facility. Farmville Boulevard ends at Fourteenth Street at a T-intersection. Fourteenth Street is a four-lane undivided facility between Farmville Boulevard and Dickinson Avenue. Dickinson Avenue is a three-lane roadway between Fourteenth Street and Tenth Street. The intersection of Dickinson Avenue and Tenth Street is a complex intersection with a railroad running diagonally through the center of the intersection. Tenth Street is a four-lane road with left turn lanes at major intersections.

Horizontal and Vertical Alignment

Stantonsburg Road, Farmville Boulevard, and Tenth Street run east-west through the City of Greenville. Memorial Drive, Fourteenth Street, Dickinson Avenue, and Evans Street generally run north-south through the City. As the project is located in the north central coastal plain region of North Carolina, all roads are relatively level in the City and outward to Pitt County.

Right of Way and Access Control

The current right of way width is approximately 50 feet along Farmville Boulevard and 70 feet along Tenth Street. There is no control of access on the roadways in the project study area. Numerous driveways to urban residential and commercial properties line both sides of the streets in the immediate project corridor.

Speed Limit

The posted speed limit on Farmville Boulevard and Tenth Street is 35 miles per hour (mph).

Intersections/Interchanges

No interchanges exist along the proposed project. Existing signalized intersections along the project corridor include:

- Stantonsburg Road / Farmville Boulevard at Memorial Drive
- Farmville Boulevard at Line Avenue / Bancroft Avenue
- Farmville Boulevard at Fourteenth Street
- Dickinson Avenue at Fourteenth Street
- Dickinson Avenue at Tenth Street
- Tenth Street at Evans Street

Railroad Crossings

CSX Transportation owns railroad tracks running north-south through the study area. Norfolk Southern Transportation Company owns tracks running east-west through the study area. The CSX and Norfolk Southern rail lines cross in the vicinity of Beatty and Fourteenth Streets at the southern edge of the study area. The CSX Transportation rail line runs through the intersection of Dickinson Avenue and Tenth Street. The Preferred Alternative includes a grade separation between the roadway and rail line at this location. Tenth Street also crosses a rail spur near Pitt Street. The operating rail spur is in use and exclusively serves UNX Incorporated, a chemical products supplier.

Structures

There are no bridges along Farmville Boulevard or Tenth Street in the project study area.

Bicycle and Pedestrian Facilities / Greenways

Sidewalks are located along most of Dickinson Avenue, Stantonsburg Road, Tenth Street, and Fourteenth Street within the study area. Greenville has received funds from NCDOT through the Enhancement and Moving Ahead programs for pedestrian facilities. There is a sidewalk on the north side of Farmville Boulevard from Tyson Street to Fourteenth Street. Sidewalks are located on the south side of Tenth Street from Dickinson Avenue to Evans Street and along the north side from Dickson Avenue to Clark Street, from the Pitt Street railroad spur to the Trade/Wilco Station (approximately Greene Street), and from Washington Street to Evans Street.

Currently, there are no bicycle lanes, designated bicycle routes, or greenways within the study area. Accordingly, the *2004 Greenway Master Plan* proposes greenways along Dickinson Avenue, Farmville Boulevard, Tenth Street, Line Avenue, Moyer Boulevard, Fifth Street, and Fourteenth Street. The *2002 Greenville Urban Area Bicycle Master Plan* identifies Tenth Street as a planned numbered bicycle route.

Utilities

A preliminary survey of utilities was conducted in May and July 2008 and documented in the *Utilities Technical Memorandum* (January 2009). Water, sewer, electricity, and natural gas services are provided throughout the study area by the Greenville Utilities Commission. Telephone and cable services are provided throughout the study area by Embarq and Suddenlink. Utilities are buried underground and carried along power poles along the project corridor. For specific details, the *Utilities Technical Memorandum* is available at NCDOT or the City of Greenville Public Works Department.

3. School Bus Usage

The Pitt County Schools (PCS) Transportation Department operates 216 buses, transporting 12,406 students daily. In addition to the regular fleet, the Pitt Area Transit System (PATS) is used on a contract basis for students with special needs. For the 2009-2010 school year, approximately ten (10) buses operated by PCS pick up students in the immediate project vicinity each day.

4. Traffic Carrying Capacity

Existing Traffic Volumes

Traffic data was collected in 2004 and 2005 for the study area as discussed in the *U-3315 Traffic Forecast Technical Memorandum* (December 2006). Counts included 2005 AM and PM peak hour traffic at six (6) study intersections; 2005 daily traffic counts on Fourteenth Street and Dickinson Avenue; and 2004 daily traffic counts on Stantonsburg Road, Memorial Drive, Farmville Boulevard, Fourteenth Street, Tenth Street, Dickinson Avenue, Evans Street, and Charles Boulevard.

Figure 4 shows the existing average daily traffic volumes (ADTs) for the current primary travel path. As shown in the figure, volumes range from 12,200 vpd to 15,400 vpd along the current primary travel path between Memorial Drive and Evans Street.

Existing Levels of Service

Level of service calculations are described in the *U-3315 Capacity Analysis Report* (April 2008) and the *U-3315 Supplemental Capacity Analysis Memorandum* (June 2009).

Level of service (LOS) is defined in the *Highway Capacity Manual 2000* (Transportation Research Board) as “a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience.” **Table 1** provides the LOS Criteria for signalized intersections. A roadway’s level of service is often limited by the capacity of intersections along the route. The average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. LOS is directly related to the control delay value. Some individual approaches may experience worse LOS than the overall intersection LOS.

Table 1 – LOS Criteria for Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (seconds per vehicle)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Source: Highway Capacity Manual, 2000

Table 2 lists the existing (2005) levels of service and intersection delays for the major intersections along the current primary travel path.

Table 2 – Existing (2005) Intersection Level of Service

Intersection	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
	(Delay in Seconds Per Vehicle)	
Stantonsburg Road / Farmville Boulevard at Memorial Drive	E (65.7)	E (64.1)
Farmville Boulevard at Bancroft Avenue / Line Avenue	B (11.8)	B (11.3)
Fourteenth Street at Farmville Boulevard	B (12.7)	B (16.1)
Fourteenth Street at Dickinson Avenue	D (51.2)	D (46.2)
Tenth Street / Grande Avenue at Dickinson Avenue	C (22.1)	C (23.6)
Tenth Street at Evans Street	C (29.0)	C (26.6)

Note: Analysis performed in Synchro 7.0 using HCM methodology. **Bold** designates unacceptable level of service (E or F).

At the signalized intersections along the current primary travel path, LOS ranged from B to E in 2005. LOS D is generally considered acceptable in urban areas during the peak hour. Although the overall intersection LOS appears acceptable for most signalized intersections, an unacceptable LOS E occurs at several intersection approach movements during the peak hour. A LOS E or worse occurred at one or more intersection approach movements during the AM and PM peak hours at the intersections of Stantonsburg Road / Farmville Boulevard at Memorial Drive and Fourteenth Street at Dickinson Avenue.

Future Traffic Volumes

Existing (2004 and 2005) traffic counts were used with data from the Greenville Travel Demand Model to develop daily traffic projections. **Figure 5** shows the projected (2030) ADTs for the current primary travel path and turning movements for major roadways crossing the corridor. As shown in the figure, the 2030 traffic volumes range from 22,800 vpd to 28,300 vpd along the current primary travel path between Memorial Drive to Evans Street.

Future Levels of Service

Table 3 contains the projected (2030) levels of service and intersection delays for the primary intersections identified along the current primary travel path.

Table 3 – Projected Year (2030) Intersection Level of Service

Intersection	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
	(Delay in Seconds Per Vehicle)	
Stantonsburg Road / Farmville Boulevard at Memorial Drive	F (166.8)	F (155.6)
Farmville Boulevard at Bancroft Avenue / Line Avenue	B (18.7)	B (20.0)
Fourteenth Street at Farmville Boulevard	B (16.7)	B (18.0)
Fourteenth Street at Dickinson Avenue	F (199.4)	F (203.1)
Tenth Street / Grande Avenue at Dickinson Avenue	F (91.4)	F (93.4)
Tenth Street at Evans Street	F (171.3)	F (158.5)

Note: Analysis performed in Synchro 7.0 using HCM methodology. **Bold** designates unacceptable level of service (E or F)

At the signalized intersections along the current primary travel path, the LOS ranges from B to F in 2030. In 2030, the intersection of Stantonsburg Road / Farmville Boulevard at Memorial Drive is projected to continue to operate at unacceptable levels of service during both the AM and PM peak hours. A LOS E or worse is projected to occur in 2030 at one or more intersection approach movements during the AM and PM peak hours at the intersections of:

- Stantonsburg Road / Farmville Boulevard at Memorial Drive
- Fourteenth Street at Dickinson Avenue
- Tenth Street / Grande Avenue at Dickinson Avenue
- Tenth Street at Evans Street

5. Accident Data

Several criteria are used to measure the relative safety of a roadway segment. Accident data was reviewed for key signalized intersections along the current primary travel path for the period of October 1, 2004 to September 30, 2007. **Table 4** summarizes the data, which is represented in terms of crashes per 100 million entering vehicles (100MEV) over a given period of time.

As shown in **Table 4**, a total of 162 accidents occurred at the studied intersections from 2004 to 2007. The intersection of Farmville Boulevard and Line Avenue / Bancroft Avenue experienced the highest crash rate of 265.13 crashes per 100MEV. The intersections of Fourteenth Street / Farmville Boulevard and Tenth Street / Evans Street have the lowest accident rates among the studied intersections.

The most common type of crashes at intersections along the corridor were rear end and angle. The high rate of left turn and angle crashes at Farmville Boulevard and Line Avenue / Bancroft Avenue indicates a potential problem with the intersection geometry, which currently does not include left-turn lanes or a protected left-turn movement. The majority of crashes at the next two highest-rate crash intersections (Memorial Drive and Stantonsburg Road / Farmville Boulevard; and Fourteenth Street and Dickinson Avenue) are rear-end crashes. This may indicate a capacity or signal timing issue at those locations.

One (1) crash involving a pedestrian (Farmville Boulevard and Line Avenue / Bancroft Avenue), and one (1) crash involving a bicyclist (Memorial Drive and Stantonsburg Road / Farmville Boulevard) were reported.

Table 4 – Crash Summary: Frequency by Type at Intersections, 2004-2007 (3 years)

Intersection	Type of Crash							Total	Total Crash Rate*
	Left Turn	Right Turn	Rear End	Run Off Road	Angle	Side-swipe	Other		
Stantonsburg Road / Farmville Boulevard at Memorial Drive	6	5	19	0	13	6	3	52	107.93
Farmville Boulevard at Line Avenue / Bancroft Avenue	20	1	5	0	16	1	2	45	265.13
Fourteenth Street at Farmville Boulevard	1	2	2	0	1	4	0	10	49.36
Fourteenth Street at Dickinson Avenue	1	1	9	2	5	0	2	20	83.02
Tenth Street at Dickinson Avenue	4	0	5	0	5	4	1	19	75.44
Tenth Street at Evans Street	1	0	5	0	7	1	2	16	33.59
Total at Studied Intersections	33	9	45	2	47	16	10	162	--

* Rate = Crashes per 100 Million Vehicles Entered (MEV); 2004-2007 (3 years)

6. Airports

The Pitt-Greenville Airport (PGV) is the nearest airport to the study area, located approximately one (1) mile north of the study area along Memorial Drive.

7. Other Highway Projects in the Area

Several other NCDOT transportation projects are proposed within a mile of STIP Project U-3315, although only one lies within this project's study area (STIP Project U-3839). **Section II.D.1** describes these projects in more detail.

D. Transportation and Land Use Plans

1. NC Transportation Improvement Program (STIP)

The proposed Stantonsburg Road / Tenth Street Connector is included as Project U-3315 in the *NCDOT 2011-2020 Draft STIP*. Right of way acquisition is scheduled to begin in Federal Fiscal Year (FFY) 2012, and construction is scheduled to begin in FFY 2014. Several other projects in the STIP are located in Greenville, although only one (1) other project is in the study area (U-3839, which proposes a railroad

crossing grade separation on Fourteenth Street and is currently unfunded). **Table 5** lists the STIP projects within one (1) mile of the study area.

Table 5 – STIP Projects within One Mile of the Study Area (NCDOT 2009-2015 STIP)

STIP Project	Description	Status
Rural Projects		
R-4749	Add paved shoulders and turn lanes, and reconstruct shoulders on NC 43 from Edgecombe County to US 13-NC 11	Under construction
Urban Projects		
U-3839	Railroad grade separation on Fourteenth Street at CSX Transportation Crossing 641-614E.	Unfunded project
U-5018	Widen NC 43 from US 264 to US 13-NC11 (Memorial Drive) to a four-lane divided facility.	Under Construction
Federal Bridge Projects		
B-4786	Replace Bridge No. 38 on US 13 over Tar River	Right of way and construction unfunded

2. Local Thoroughfare Plans

The Stantonsburg Road / Tenth Street Connector was first proposed in the *1994 Greenville Urban Area Thoroughfare Plan* (adopted September 1994). It is included in the most recent thoroughfare plan, the *2005 Greenville Urban Area Thoroughfare Plan*, as a proposed major thoroughfare. The primary purpose of the *Thoroughfare Plan* is to ensure that individual transportation projects form a comprehensive, continuous, and coordinated system. The *Greenville Urban Area Thoroughfare Plan* includes the areas of the City of Greenville, Town of Winterville, Town of Ayden, Village of Simpson, and portions of Pitt County.

The Greenville Urban Area Metropolitan Planning Organization (MPO) adopted the *2005 Greenville Urban Area Thoroughfare Plan* in December 2004. In February 2005 the *Thoroughfare Plan* was adopted by the North Carolina Board of Transportation. The planning horizon for the *2005 Thoroughfare Plan* is 2025, and **Figure 6** shows the *Thoroughfare Plan* within the study area for this project. Farmville Boulevard and Tenth Street are both shown as major thoroughfares within the study area, and the connector is shown as a proposed major thoroughfare.

3. Land Use Plans

The Stantonsburg Road / Tenth Street Connector is included in local land use plans. These references are described briefly below, and are explained in more detail in the *U-3315 Community Characteristics Report* (January 2007).

Horizons Comprehensive Plan (February 2004)

Objectives in the *Horizons* plan include creating gateway corridors into Greenville and coordinating transportation plans of the City, ECU, and ECU's Medical Campus. Implementation strategies identified in the plan include revitalizing West Greenville, linking Farmville Boulevard to Tenth Street, and adding sidewalks and streetscaping throughout the city.

The existing land use along Farmville Boulevard from Line Avenue / Bancroft Avenue to Fourteenth Street and through the Higgs Brothers neighborhood is primarily residential (Figure 4.1, *Community Characteristics Report*), and current zoning is residential along Farmville Boulevard and commercial through the Higgs Brothers neighborhood (Figure 4.4, *U-3315 Community Characteristics Report*). The proposed land uses in the *2004 Horizons* plan indicate that the parcels along Farmville Boulevard will be converted to commercial and office / institutional/ multi-family, and the land uses along the new location portion of the corridor will become mixed use / office / institutional (Figure 4.3, *U-3315 Community Characteristics Report*).

City of Greenville and Pitt County Home Consortium 2003-2007 Consolidated Plan (June 2003)

The *City of Greenville and Pitt County Home Consortium 2003-2007 Consolidated Plan* includes revitalization of the Lincoln Park neighborhood. This plan established the 45-block Community Development Block Grant (CDBG) revitalization effort and initiated the bond funding that supports the *Center City-West Greenville Revitalization Plan*.

Center City-West Greenville Revitalization Plan (December 2005, March 2006)

The proposed Stantonsburg Road / Tenth Street Connector is addressed in several sections of this plan. Specifically, the connector is considered to become an important transportation link to Greenville's center city. Elements include a separated grade crossing at the railroad, maintenance of Dickinson Avenue as a through street to downtown, a design that would minimize conflicts between pedestrians and vehicles, and additional landscaping and signage to enhance pedestrian safety.

E. System Linkage / Travel Time / Access Need

1. Existing Road Network

The existing network of secondary roadways consists mostly of urban undivided roadways with varying cross-sections. Primary routes as identified in **Figure 1** consist of both undivided and median-divided facilities in the surrounding area. Existing functional classifications and cross-sections of major roadways in the project study area are described in **Sections II.C.1 and 2**.

Other major roads entering Greenville include Alternate US 264 / US 13, which approaches Greenville from the southwest and continues as US 13 north toward Bethel; NC 43, which approaches Rock Spring to the northwest and continues to the southeast toward Chicod; NC 33 which approaches Belvoir Crossroad to the north-northwest and continues to the southeast toward Grimesland; and NC 11 which enters Greenville from Ayden / Winterville to the south.

2. Commuting Patterns

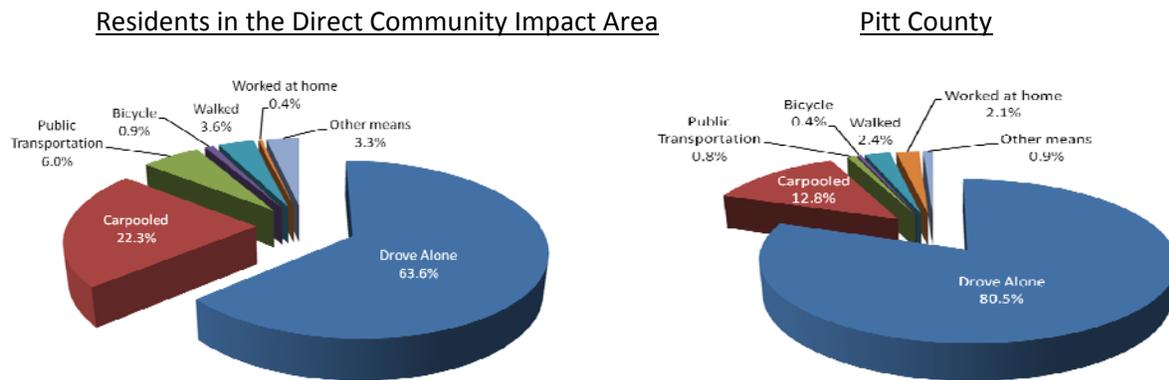
Traffic traveling west to east through Greenville follows several different routes. The most commonly traveled route follows Farmville Boulevard, Fourteenth Street, Dickinson Avenue, and Tenth Street. Since much of West Greenville is on a grid network, there are many alternate paths possible, but most streets are residential with low speeds, no street lighting, and no sidewalks. All east-west routes require

at least three (3) 90-degree turns, and there are no major arterials from West to East Greenville that have a grade-separated crossing at the railroad line.

This project is anticipated to affect travel patterns in the area. The Stantonsburg Road / Tenth Street Connector will provide an uninterrupted, straight-line path from PCMH (Stantonsburg Road / Memorial Drive) to ECU and the downtown area (Tenth Street / Evans Street). By 2030, the build scenario is anticipated to carry approximately 15% to 20% more traffic than the No Build scenario (2006 *U-3315 Traffic Forecast Technical Memorandum*). This indicates that the new connector would accommodate vehicles currently traveling along the Farmville Boulevard-Fourteenth Street-Dickinson Avenue-Tenth Street route, and would also attract new trips. Since this growth is compared with the No Build scenario, these new trips are likely to be a combination of trips diverted from other parallel routes and trips that are a result of an increased attraction to the area.

The chart below represents the methods used by commuters in the study area and Pitt County to travel to work based on the 2000 Census. The percentage of residents in the study area using public transportation and other means to travel to work is higher than that of residents in the rest of the county.

Commuting Patterns - Means of Transportation to Work



Source: US Census 2000 Summary File 3

The proposed project would decrease travel times for commuters through West Greenville by half. The direct connection would reduce the number of turns and stops. The grade-separated crossing over the railroad would eliminate delays caused by the railroad operation at the crossing.

3. Modal Interrelationships

Public Transportation

There are three (3) Public Transportation Systems operating within the City of Greenville. All of these systems currently provide service in the area of the Stantonsburg Road / Tenth Street Connector. Greenville Area Transit System (GREAT) is a City-owned fixed-route system. East Carolina Student Transit Authority (ECUSTA) is a fixed-route system serving East Carolina University students, faculty, and staff. Pitt Area Transit System (PATS) serves Pitt County and the municipalities within the county as a rural general public system and an on-demand paratransit service.

Greenville Area Transit System (GREAT)

GREAT, the City of Greenville system, operates five (5) routes. Annual ridership for the GREAT system is approximately 412,000 passenger trips. Currently, two of the system's five routes operate in and around the area to be served by the Stantonsburg Road / Tenth Street Connector. These two routes are used to transport passengers to and from the downtown area to PCMH/Health Science Campus and surrounding areas.

The Intermodal Transportation Center / GREAT Passenger Center, slated for downtown Greenville, is currently in the planning and design phase. The proposed site for the Center is located between Eighth and Ninth Streets and Evans and Cotanche Streets. The Center will provide easy access to the future Tenth Street Connector, PCMH, and all points of Greenville and Pitt County. The Center will act as a transfer hub for multiple transit services in the area and will potentially provide services for Trailways / Greyhound, Taxi services, PATS, ECUSTA, and the Greenville Area Transit riders. Design is scheduled to begin in 2011.

East Carolina Student Transit Authority (ECUSTA)

ECUSTA is a system operated by the Student Transit Authority of East Carolina University. It operates seventeen (17) routes throughout the City of Greenville, including service from the University's main campus to the Health Science Campus, for students, faculty, and staff of the University. Annually, it makes approximately 2.1 million passenger trips.

Pitt Area Transit System (PATS)

PATS is operated by Pitt County and provides rural general public and paratransit service to all of Pitt County and to parts of the surrounding counties. PATS performs a critical service by transporting citizens from rural areas to points within the City of Greenville to provide access to medical, institutional, and shopping destinations. This system is also the main provider of on-demand paratransit service used by most social service agencies and GREAT. PATS is expected to use Greenville's future Intermodal Transportation Center (ITC) as a hub to allow their rural general public and paratransit passengers to transfer to other modes of transportation such as the fixed route public service provided by GREAT. With the ITC as a central transfer point, it is expected that PATS passengers will benefit from future shuttles between downtown Greenville and the PCMH / Health Science Campus.

Rail Service

There is no passenger rail service to the City of Greenville.

Motor Freight Service

At least five (5) trains move throughout Greenville each day, frequently during the morning and evening peak hours. CSX Transportation owns tracks running north-south through the study area, and Norfolk Southern Transportation Company owns tracks running east-west through the study area. Carolina Coastal Railway (CLNA) currently operates the Norfolk Southern line through Greenville. The CSX and Norfolk Southern rail lines cross in the vicinity of Beatty and Fourteenth Streets at the southern edge of the study area. A mutual operating agreement has not been established between the rail lines;

therefore, all trains must come to a complete stop at this rail crossing. This practice frequently causes trains to block roads and intersections. Trains move slowly through Greenville because of the number of grade crossings and since all trains must come to a complete stop at the above mentioned rail crossing.

The location of the railroad switching yard (in the northwest quadrant of Arlington Boulevard and Evans Street) frequently causes trains to block Tenth Street, Fourteenth Street, Howell Street, and Arlington Boulevard, among other locations. When at the switching station, the trains typically move forward and backward along the lines while switching tracks, which results in an increased frequency as well as duration for the roads to be blocked. Although time limits are set for how long the trains are allowed to block a crossing, they are not applicable as long as the trains are still moving, even if the movement is slow. During the switching process, the trains may move enough to allow some vehicles to pass, and then move back to block the crossing again.

Air Service

The Pitt-Greenville Airport (PGV) is located approximately one (1) mile north of the study area along Memorial Drive. The airport has three (3) runways, and is used for general aviation and daily commercial air service. US Airways offers direct flights each day to and from Charlotte, North Carolina.

F. Safety

The City of Greenville Police Department headquarters and Fire / Rescue Department headquarters are located within the study area at 500 South Greene Street. Emergency medical service (EMS) is provided by the City of Greenville Fire / Rescue Department and by other county and regional emergency responders. PCMH / Health Science campus is located on Stantonsburg Road within the study area.

The study area includes two fire / EMS districts that are the primary responders to fire and emergency calls in the study area. Station 1 generally covers the area that lies east of Memorial Boulevard while Station 2 provides services to the area west of Memorial Boulevard. Depending upon the nature of the emergency, more than one station may respond to a call.

G. Demographics / Economic Development

Demographics

According to the 2000 Census, 3,666 residents lived in the study area. Approximately 94% of the study area population constituents identified themselves as being a minority, primarily Black or African American.

The study area has a high percentage of people under the age of 20 (32.7%) and over the age of 65 (12.5%). This high proportion of residents under 20 would be typical for neighborhoods located near a major university; college students, however, do not typically live in the study area.

As of 2000, 1,580 housing units were located within the study area. Of these, 88.3% were occupied and 11.7% were vacant, and 72% of the study area households rent rather than own their homes. Less than 8% of the structures in the study area have been built since 1990.

Economic and Infrastructure Data

Income and unemployment data is reported by Census block groups, which are the smallest geographic units used by the United States Census to report various characteristics.

The study area's median household income is \$17,250, and 29.0% of the residents are below the poverty level. Unemployment rates have been cyclical for Pitt County, North Carolina, and the nation over the past 16 years. The civilian unemployment rate reported in the 2000 Census for the study area block groups was 10.3%. The US Department of Labor reports a 9.9% unemployment rate for the City of Greenville as of November 2009.

PCMH and ECU are the major catalysts of growth in Pitt County. The largest sectors of the workforce in Pitt County are health care and social assistance (19%), educational services (14.4%), retail trade (12.7%), and manufacturing (11.1%). Collectively, these four sectors account for 57.2% of the total workforce.

The study area is situated between the two largest employers in the Greenville area — PCMH with more than 5,600 employees, and ECU with nearly 4,200 employees. Government and educational services associated with the City of Greenville and Pitt County are the major employers within the study area. Also, a number of medical and health care services and hotels are located near PCMH. Several manufacturing operations are located along the railroad tracks. Most of the study area businesses employ fewer than ten (10) employees and provide a range of services. These businesses include beauty and barber shops, funeral homes, child care centers, automotive repair shops, retail stores, and restaurants.

H. Benefits of Proposed Project

As described in **Section II.A. and B.**, the project will increase direct connectivity between PCMH / Health Science campus, downtown Greenville, ECU's main campus, and areas to the east and west of these locations; create a direct connection between Stantonsburg Road and Tenth Street to improve vehicular, pedestrian, and bicycle access; and will maintain acceptable traffic level of service in the future. The proposed project will provide a grade-separated connection at the CSX Rail Line from the eastern part of Greenville to PCMH / Health Science campus to decrease delays, improve reliability, and decrease travel time for emergency responders and patients. The proposed project will provide a "gateway" into the City of Greenville. Other benefits are described in **Section V.E.3.**

III. Alternatives

A. Preliminary Study Alternatives

The alternatives development process is described in detail in the *U-3315 Preliminary Alternatives Report* (November 2009) and is summarized below. The Steering Committee consists of representatives from the City, NCDOT, Pitt County Memorial Hospital (PCMH), and East Carolina University (ECU), and is responsible for directing the project study and selecting the alternatives to be carried forward for further study. Input was gathered from citizens at workshops and during interviews, and from the Citizens Advisory Committee (CAC), a committee appointed by the City Council to represent the citizens of West Greenville during the development of this project.

1. Alternative Modes of Transportation

The purposes of this project are to increase direct connectivity, provide a grade separation with the CSX Railway, and provide a “gateway” corridor into Greenville from the west. Therefore, alternative modes of transportation would not fulfill the purposes of the project.

2. Transportation Systems Management (TSM)

FHWA defines Transportation Systems Management (TSM) as “an integrated program to optimize the performance of existing infrastructure through the implementation of systems, services, and projects designed to preserve capacity and improve security, safety, and reliability. The term includes improvements to the transportation system such as traffic detection and surveillance, arterial management, freeway management, demand management, work zone management, emergency management, electronic toll collection, automated enforcement, traffic incident management, roadway weather management, traveler information services, commercial vehicle operations, traffic control, freight management, and coordination of highway, rail, transit, bicycle, and pedestrian operations.” TSM improvements are generally not recommended for an urban area with a population of less than 200,000. The City of Greenville website reports a current population of 79,629. While TSM improvements may provide short-term improvements in traffic service to the network of urban streets near Farmville Boulevard and Tenth Street, it does not meet the purpose of this project. Therefore, TSM was not considered as a viable alternative for this project.

3. No Build Alternative

The No Build Alternative would not directly connect Stantonsburg Road with Tenth Street or alleviate traffic delays caused by the intersection with the CSX Rail Line. In addition, the No Build option would not fulfill local plans to create a “gateway” into Greenville. The No Build Alternative would not incur any right of way or construction impacts, but it does not address the issues identified in the purpose and need for the project. It is not compatible with NCDOT’s or the City’s transportation goals and would not meet regional transportation needs or project objectives. The No Build Alternative has been retained in this document to serve as a basis for comparing impacts and benefits of the Build alternatives but was eliminated as a viable alternative by the Steering Committee in November 2007.

4. Initial Alignment Options

Before developing any initial alignment options, the project team began public involvement activities (described in **Section VI** in more detail) to solicit input from local residents and stakeholders on area transportation challenges, potential solutions, and community vision. During the first Community Informational Workshop (CIW) for this project in January 2006, attendees were asked to express their ideas for the project by sketching corridors on aerial mapping. Six (6) alignment options (Options A, B, C, D, E, and F, included on **Figures 7 and 8**) were suggested at this time and are described below.

Option A – Widens existing roads along Farmville Boulevard, Fourteenth Street, and Dickinson Avenue. Creates a railroad grade separation with the intersection of Tenth Street and Dickinson Avenue.

Pros: Option A would not impact Sadie Saulter Elementary School and would provide a reduced potential impact to the historic district.

Cons: Option A would not provide the shortest path, does not meet the goal of directly connecting the project termini, and is not consistent with the *Thoroughfare* and *Revitalization Plans*. Option A also would cause longer travel time via more signalized intersections.

Option B – Proposes the entire project be built on a bridge, beginning west of Bancroft Avenue and continuing to Tenth Street east of the railroad.

Pros: Option B would provide the shortest path, connectivity of the project termini, is consistent with the *Thoroughfare Plan*, and would not impact Sadie Saulter Elementary School.

Cons: Option B proposes to put the Stantonsburg Road / Tenth Street Connector on a bridge structure, spanning the entire length of the project. It is anticipated that construction of Option B would be much more expensive than other options and is not cost-effective for project goals. Option B is not consistent with the *Revitalization Plan* goals. Option B could cause a separation within an existing neighborhood and a negative aesthetic effect on nearby homes. (Access to the bridge would be limited to the project end points.)

Option C – Widens Farmville Boulevard, and then uses new location, curving north, to Spruce Street. Widens Spruce Street to Columbia Avenue. Uses new location from Columbia Avenue to Tenth Street, including grade separation with the railroad and Dickinson Avenue.

Pros: Option C would maintain connectivity of Dickinson Avenue with downtown Greenville and would not require turning movements between project termini. It is consistent with the *Thoroughfare* and *Revitalization Plans* and would provide a reduced potential impact to the historic district.

Cons: Option C does not follow the shortest path. It would also impact Sadie Saulter Elementary School.

Option D – Widens Farmville Boulevard, and then uses new location, curving south, to Tenth Street. Includes a grade separation with the railroad and Dickinson Avenue.

Pros: Option D would provide the shortest path, connectivity of project termini, and is consistent with the *Thoroughfare* and *Revitalization Plans*. It would not impact Sadie Saulter Elementary School.

Cons: Option D would require property from the Jacob W. Higgs House, which is eligible for the National Register of Historic Places. Option D would require a skewed crossing with the railroad, possibly causing geometric design issues.

Option E – Uses/widens Memorial Drive from Stantonsburg Road to West Fifth Street (formerly Martin Luther King, Jr. Drive). Widens West Fifth Street from Memorial Drive to McKinley / Ward Street. On new location, connects West Fifth Street from McKinley / Ward Street to Tenth Street, using a grade separation with the railroad.

Pros: Option E would not impact Sadie Saulter Elementary School.

Cons: Option E would require a directional shift in the corridor via W. Fifth Street, which is currently planned to be de-emphasized from traffic in the *Revitalization Plan*, and also would cut through the Perkins Town – Cherry View Historic District. Option E is not consistent with the *Thoroughfare* and *Revitalization Plans*.

Option F – Beginning at Moye Boulevard and Stantonsburg Road, follows Moye Boulevard southeast to Chestnut Street. Beginning approximately at Chestnut Street, uses new location to the east / northeast to connect to Dickinson Avenue. Follows Dickinson Avenue to Tenth Street, including a grade separation with the railroad with Dickinson Avenue to Tenth Street as the major movement.

Pros: Option F would not impact Sadie Saulter Elementary School.

Cons: Option F would not meet the goal of direct connectivity between ECU, downtown Greenville, and the PCMH / Health Science Campus. It would not provide the shortest path and is not consistent with the *Thoroughfare* and *Revitalization Plans*. It would impact the Community Center.

Following the workshop, three (3) additional options (Options G, H, and J, included on **Figures 9, 10, and 11**) were developed. Options G, H, and J are variations of the citizens' Option C with modifications to avoid impacts to specific features such as historic structures and Sadie Saulter Elementary School while still meeting the project purposes. The following are descriptions of Options G through J, and all initial alignment options are summarized in **Table 6**. Due to similarity of appearance to the number "1," there were no options named "Option I."

Option G – Widens Farmville Boulevard to the south, and then uses new location, curving north (parallel to Spruce Street) from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street predominantly to the north to Evans Street.

Pros: Option G is a variation of Option C, providing the shortest path, connectivity of the project termini, and is consistent with the *Thoroughfare* and *Revitalization Plans*. Option G would avoid impacts to Beatrice Maye Garden Park and Sadie Saulter Elementary School. Option G would provide a reduced potential impact to the historic district.

Cons: (None were identified at this point in the alternatives development process.)

Option H - Widens Farmville Boulevard to the north, and then uses new location from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street predominantly to the north to Evans Street.

Pros: Option H is also a variation of Option C, providing the shortest path, connectivity of the project termini, and is consistent with the *Thoroughfare* and *Revitalization Plans*. Option H would avoid Sadie Saulter Elementary School and provide a reduced potential impact to the historic district.

Cons: Option H would impact Beatrice Maye Garden Park.

Option J - Widens Farmville Boulevard symmetrically, and then uses new location, curving south, from Fourteenth Street to Tenth Street, including a grade separation with the railroad and Dickinson Avenue. Widens Tenth Street symmetrically to Evans Street.

Pros: Option J is also a variation of Option C, providing the shortest path, connectivity of the project termini, and is consistent with the *Thoroughfare* and *Revitalization Plans*. Option J would avoid Sadie Saulter Elementary School and provide a reduced potential impact to the historic district.

Cons: Option J would impact Beatrice Maye Garden Park.

Table 6 – Summary – Qualitative Analysis of Initial Alignment Options

Indicator ✓ = benefit; ✗ = disadvantage	Option									
	A	B	C	D	E	F	G	H	J	
Direct (along the shortest path)	✗	✓	✗	✓	✗	✗	✓	✓	✓	
Straight (does not include any turning movements)	✗	✓	✓	✓	✗	✗	✓	✓	✓	
Maintains connectivity of Dickinson Avenue with downtown	✗	✓	✓	✓	✓	✗	✓	✓	✓	
Consistent with Thoroughfare Plan	✗	✓	✓	✓	✗	✗	✓	✓	✓	
Consistent with Redevelopment Plan	✗	✗	✓	✓	✗	✗	✓	✓	✓	
Relatively low cost (compared with other options)	✓	✗	✓	✓	✗	✓	✓	✓	✓	
No impact to school property	✓	✓	✗	✓	✓	✓	✓	✓	✓	
Relatively high access (compared with other options)	✓	✗	✓	✓	✓	✓	✓	✓	✓	
Relatively short rail crossing (approximately at a 90 degree angle)	✗	✓	✗	✗	✓	✗	✓	✓	✗	
Reduced potential impact to historic district(s)	✓	✗	✓	✓	✗	✓	✓	✓	✓	

On September 27, 2006, NCDOT and FHWA reviewed the nine (9) initial alignment options and noted that Options A, B, D, E, and F did not appear reasonable and feasible. NCDOT and FHWA suggested showing Options C and G in a combined corridor and Options H and J in a combined corridor (due to similarity of alignment) to allow flexibility in design. The Steering Committee agreed on October 17, 2006 that Options C, G, H, and J should be studied in further detail. The committee also agreed that Options C, G, H, and J should be shown in two corridors, with one corridor including Options C and G, and the other corridor including Options H and J. On October 30, 2006, NCDOT suggested that the corridors should be combined into one large corridor, with the Options shown in different colors. These nine (9) initial alignment options were presented to the community at the January 2007 CIW. Options C, G, H, and J were shown on maps individually and in a combined study corridor (shaded yellow, as shown on **Figures 9-14**), with the Steering Committee’s recommendation to study Options C, G, H, and J in more detail. The yellow study corridor was designed to be sufficiently wide enough to accommodate several widening and new location alignments that were variations of Option C.

Following the January 2007 CIW, the project team (consisting of staff from the City, NCDOT, CAC, Steering Committee, and Kimley-Horn and Associates, Inc.) held several meetings to discuss environmental features, stakeholders’ and citizens’ concerns, and advantages and disadvantages of the initial nine (9) alignment options. Options C, G, H, and J offered the greatest potential to meet the purpose and need of the project with fewer major impacts than the other options.

Based on preliminary analyses and public involvement, the Steering Committee selected Options C, G, H, and J to present to the public for additional input. The project team prepared a more detailed, quantitative analysis of property impacts of Options C, G, H, and J, as shown below in **Tables 7-10**. (Impacts shown were based on a 145-foot typical section plus a 15-foot buffer, which was under consideration at that time. It should be noted that, later in 2007, continued design analysis of project needs resulted in a proposed right of way width of 150 feet. A detailed explanation of the differences between the 145-foot and 150-foot typical section is included in **Section III.B.1.**)

Table 7 – Option C Impacts

	Option C (Widens Farmville Boulevard to the south, curves north on new location to Spruce Street, widens Tenth Street symmetrically to Evans Street.)		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	17	31	48
Business	5	22	27
Residential	12	7	19
Church	0	2	2
Historic	0	2*	2*

* Historic property take includes structure and land (on south side) and only land (on north side)

The asterisk indicates that two of the properties listed in the rows above are historic, not two additional properties. For example, 22 businesses + 7 residences + 2 churches = a total of 31 properties.

Table 8 – Option G Impacts

	Option G (Widens Farmville Boulevard to the south, curves north on new location parallel to Spruce Street, widens Tenth Street to the north to Evans Street)		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	18	36	54
Business	5	21	26
Residential	13	12	25
Church	0	3	3
Historic	0	1**	1**

** Historic property take does not include any structures (land only)

The asterisks indicate that one of the properties listed in the rows above is historic, not one additional property. For example, 21 businesses + 12 residences + 3 churches = a total of 36 properties.

Table 9 – Option H Impacts

	Option H (Widens Farmville Boulevard to the north, curves slightly north on new location, widens Tenth Street to the north to Evans Street.)		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	19	36	55
Business	4	22	26
Residential	13	11	24
Church	2	3	5
Historic	0	1**	1**

** Historic property take does not include any structures (land only)

The asterisks indicate that one of the properties listed in the rows above is historic, not one additional property. For example, 22 businesses + 11 residences + 3 churches = a total of 36 properties.

Table 10 – Option J Impacts

	Option J (Widens Farmville Boulevard symmetrically, curves south on new location, widens Tenth Street symmetrically to Evans Street.)		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	27	37	64
Business	5	19	24
Residential	22	17	39
Church	0	1	1
Historic	0	2*	2*

* Historic property take includes structure and land (on south side) and only land (on north side)

The asterisk indicates that two of the properties listed in the rows above are historic, not two additional properties. For example, 19 businesses + 17 residences + 1 church = a total of 37 properties.

After reviewing Options G and J further, the project team recognized that slight changes to the alignment would potentially result in fewer relocation impacts. The alignments of Options G and J were slightly modified (referred to as “Option G-Modified” and “Option J-Modified”) based on the previously mentioned environmental constraints, local issues, and citizens’ concerns to reduce potential impacts. Options G-Modified and J-Modified are described below and are also shown in **Figures 12 and 14**. Proposed roadway improvements for Options G-Modified and J-Modified begin on the south side of the intersection of Farmville Boulevard and Memorial Drive to avoid impacts to Mt. Philippi Church of Christ (now Sycamore Chapel Baptist Church).

Option G-Modified - Option G-Modified widens Farmville Boulevard to the south, curves slightly north onto new location, and widens Tenth Street predominantly to the north, as shown in **Figure 12**. **Table 11** provides an estimate of impacts based on a 145-foot typical section plus a 15-foot buffer for possible proximity impacts.

Pros: Avoids Sadie Saulter Elementary School, avoids Beatrice Maye Garden Park, avoids Sycamore Chapel Baptist Church, refines the corridor between Fourteenth Street and Dickinson Avenue to reduce impacts to potential relocatees, and achieves a shorter bridge design for the grade separation with the railroad.

Cons: Involves a land taking in the Tobacco Warehouse Historic District.

Table 11 – Option G-Modified Impacts

	Option G-Modified		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	19	30	49
Business	6	19	25
Residential	13	11	24
Church	0	0	0
Historic	0	1**	1**

** Historic property take does not include any structures (land only)

The asterisks indicate that one of the properties listed in the rows above is historic, not one additional property. For example, 19 businesses + 11 residences + 0 churches = a total of 30 properties.

Option J-Modified - Widens Farmville Boulevard to the south for approximately 0.1-mile, transitions to symmetrical widening, curves slightly north onto new location between Fourteenth Street and Dickinson Avenue, and widens Tenth Street predominantly to the north to Evans Street, as shown in **Figure 14**. **Table 12** provides an estimate of impacts based on a 145-foot typical section plus a 15-foot buffer for possible proximity impacts.

Pros: Avoids Sadie Saulter Elementary School, avoids Sycamore Chapel Baptist Church, refines the corridor between Fourteenth Street and Dickinson Avenue to reduce impacts to potential relocatees, and achieves a shorter bridge design for the grade separation with the railroad.

Cons: Impacts Beatrice Maye Garden Park, involves a land taking in the Tobacco Warehouse Historic District.

Table 12 – Option J-Modified Impacts

	Option J-Modified		
	Memorial Drive to Fourteenth Street	Fourteenth Street to Evans Street	Total
Total Taken:	27	30	57
Business	5	19	24
Residential	22	11	33
Church	0	0	0
Historic	0	1**	1**

** Historic property take does not include any structures (land only)

The asterisks indicate that one of the properties listed in the rows above is historic, not one additional property. For example, 19 businesses + 11 residences + 0 churches = a total of 30 properties.

The Steering Committee met on November 29, 2007 to review available information on the alignment options. Based on public input about local issues / concerns and estimated qualitative and quantitative impacts, the Steering Committee eliminated the No Build option and Options A, B, C, D, E, and F from further consideration. The Committee determined that Options G-Modified, H, and J-Modified should be investigated further.

B. Detailed Study Alternatives

1. Consideration of Detailed Study Alternatives

In a meeting with the City and NCDOT on February 19, 2008, NCDOT concurred with the City’s recommendation to conduct detailed study of alternatives in an established study corridor. Specifically, Options G-Modified, H, and J-Modified were re-named Alternative G-Modified, Alternative H, and Alternative J-Modified and identified for further study. Each of these three alternatives is described as follows:

Alternative G-Modified – Widens Farmville Boulevard asymmetrically to the south, curves north on new location, and widens Tenth Street predominantly to the north to Evans Street (as shown in **Figure 12**). Alternative G-Modified avoids Sadie Saulter Elementary School, avoids Beatrice Maye Garden Park, and involves a land taking in a historic district.

Alternative H – Widens Farmville Boulevard asymmetrically to the north, curves slightly north on new location, and widens Tenth Street predominantly to the north to Evans Street (as shown in **Figure 13**). Alternative H avoids Sadie Saulter Elementary School, impacts Beatrice Maye Garden Park, and involves a land taking in a historic district.

Alternative J-Modified – Widens Farmville Boulevard asymmetrically to the south for approximately 0.1-mile, transitions to symmetrical widening, curves slightly north onto new location between Fourteenth Street and Dickinson Avenue, and widens Tenth Street predominantly to the north to Evans

Street (as shown in **Figure 14**). Alternative J-Modified avoids Sadie Saulter Elementary School, impacts Beatrice Maye Garden Park, and involves a land taking in a historic district.

In February 2008, NCDOT and the City approved a 150-foot typical section shown in **Section IV.A**. Changes from the 145-foot typical section to the 150-foot typical section included the following:

- 23-foot landscaped median changed to a 30-foot landscaped median to establish a consistent median width that allows for double left-turn lanes where needed.
- 14-foot outside travel lane changed to a 12-foot outside travel lane with a 4-foot exclusive bicycle lane.
- 12-foot future transit provision was removed and replaced with a 15-foot utility strip for small trees / shrubs and street lighting.
- 11-foot landscape strip between the curb and sidewalk changed to 9-foot landscape strip.
- 5-foot sidewalk changed to 6-foot sidewalk.

Based on the 150-foot typical section, property impacts for Alternatives G-Modified, H, and J-Modified were re-estimated, as indicated in **Table 13**. No additional impacts resulted by changing the typical section from 145 feet to 150 feet wide.

Table 13 – Alternatives G-Modified, H, and J-Modified Impacts (as of October 2008)

	Alternative		
	G-Modified	H	J-Modified
Total Taken:	49	55	57
Business	25	26	23
Residential	24	24	33
Church	0	5	1
Historic	1**	1**	1**

** Historic property take does not include any structures (land only)

During most of 2008, the project team finalized several technical reports (such as the *U-3315 Purpose and Need Statement*, *U-3315 Traffic Capacity Analysis*, and *U-3315 Natural Resources Technical Report*). The purpose of the Steering Committee meeting on October 21, 2008 was to update committee members on the status of these reports and analyses. No decision on the alignment alternatives was made.

The Citizens Advisory Committee met on January 29, 2009, for the purpose of being updated on the project status and progress on technical reports and analyses. The project team presented (draft) preliminary roadway designs to the CAC for Alternatives G-Modified, H, and J-Modified, and the meeting

was opened for a question and answer session. Following the CAC meeting, the project team continued work on the preliminary roadway designs for each alternative, all of which were later approved by NCDOT on March 27, 2009.

A small group meeting was held at Mt. Calvary Free Will Baptist Church on March 24, 2009 to gather information from residents and business owners in the study area about their ideas on neighborhood and community cohesion. The same preliminary roadway designs presented to the CAC on January 29, 2009 for Alternatives G-Modified, H, and J-Modified were shown to the small group meeting attendees on March 24, 2009. Following this small group meeting, the CAC met again on April 21, 2009 at City Hall to discuss feedback from the community and the upcoming (third) workshop. This CAC meeting was also opened for a question / answer session. Concerns about potential impacts to local businesses were expressed, including the ability of the minority-owned businesses along Fourteenth Street to survive if impacted by any of the alignment alternatives. Other issues discussed included potential impacts to Beatrice Maye Garden Park, proposed changes in access control, and the project schedule.

A small group meeting was held with business owners in the study corridor on April 29, 2009 at Sheppard Memorial Library in Greenville. The purpose of this meeting was to hold an informal question and answer session to address business owners' concerns about potential property impacts. A Community Informational Workshop, the third for this project, was held at Sheppard Memorial Library the following day to provide the opportunity for residents and business owners to view the preliminary roadway designs and ask questions of the project team.

Based on comments received at the April 29, 2009 small group meeting and April 30, 2009 workshop, the preliminary roadway designs were revised for Alternatives G-Modified, H, and J-Modified. At these meetings, citizens expressed concern over potential impacts to minority-owned businesses located on the west side of Fourteenth Street and the possibility that the businesses would not be able to survive financially if forced to relocate. The proposed improvements along Fourteenth Street were shifted to the east to reduce impacts to the businesses on the west side of Fourteenth Street without causing additional relocations on the east side of Fourteenth Street. The revised preliminary roadway designs were again approved on June 16, 2009 with this change, and a follow-up small group meeting was held on June 17, 2009 at Sheppard Memorial Library with business owners to present the revised designs. Owners of the businesses along the west side of Fourteenth Street did not voice any further concerns after viewing the revised designs on June 17, 2009. A Forum with the Steering Committee members (requested by business owners on April 29, 2009) was held at City Hall on July 22, 2009 to allow residents and business owners with remaining concerns to speak with the Steering Committee members directly. Three (3) citizens expressed comments on the project, all of which were unrelated to specific alternative alignment issues. The three comments were:

- One citizen expressed concern about the tenants in the project study area and the income individuals receive from their renters.

- A member of the City's Environmental Advisory Committee mentioned environmental issues with the road and proximity to Sadie Saulter Elementary School. He thanked Kimley-Horn and others for their efforts in trying to address those concerns.
- One citizen requested that the City investigate the ownership of a parcel directly adjacent to his. It is not labeled on the roadway designs, and he believes it is part of his property.

Revised preliminary roadway designs were presented to the State Historic Preservation Office (HPO) in a meeting with NCDOT on June 30, 2009 in Raleigh. Upon review of the designs, it was determined that Alternatives G-Modified, H, and J-Modified would have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, and Perkins Town – Cherry View Historic District. The following other determinations were issued for Alternatives G-Modified, H, and J-Modified:

- No Adverse Effect on the Tobacco Warehouse Historic District and Boundary Increase if the right of way is restricted to 120 feet wide and the design returns to existing grade before the Historic District boundary.
- No Adverse Effect on the Dickinson Avenue Historic District if landscaping treatment, a brick-façade retaining wall, bridge guardrail, and a pedestrian path are installed. NCDOT Historic Architecture Group and HPO requested consultation with the project team during final design.
- No Effect on the Pure Oil Station (located on the northwest corner of Tenth and Evans Streets), given that the roadway taper ends before the property boundary and ties into the existing curb. Final roadway design must require no permanent easement or property taken from this parcel.

A construction cost estimate, right of way estimate, Relocation Reports, and the utility cost estimate were completed in the summer of 2009 by NCDOT for Alternatives G-Modified, H, and J-Modified. **Table 15** summarizes these results. Cost estimates and impacts reported below are based on revised approved preliminary designs, updated parcel data, field investigations, and current (2009) construction prices.

Thirty-six citizens (36) petitioned the City of Greenville on June 18, 2009, in favor of Alternative J-Modified, stating:

In regards to the Stantonsburg Road / Tenth Street Connector project, we the residents of Farmville Blvd. are making a recommendation that our street be widened symmetrically. To get in and out of our driveways now is a challenge and to take one (1) side and leave the other side would be detrimental for the residents that are left behind.

A copy of this petition is included in **Appendix E**.

Table 14 – Relocation Impacts and Cost Estimates - Alternatives G-Modified, H, and J-Modified

Impact	Alternative (Estimates Provided by NCDOT)		
	G-Modified	H	J-Modified
Relocations			
Residential	23	27	30
Business	26	25	24
Institutional (Church / Non-Profit)	1 / 6*	2 / 7**	1 / 6*
Total	56	60	61
Low-Income (<\$25,000) Population Impacts - Relocatees	21	24	27
Minority Population Impacts	32	37	39
Cost Estimate			
Right of Way Cost Estimate	\$25,189,300	\$26,484,300	\$26,818,200
Construction Cost Estimate (updated on 5/28/10 to be \$19,600,000)	\$20,400,000	\$20,100,000	\$20,100,000
Utility Cost Estimate	\$1,466,670	\$1,466,670	\$1,466,670
Total Cost Estimate	\$47,055,970	\$48,050,970	\$48,384,870

* Includes one (1) medium-sized church; three (3) non-profits; and three (3) other institutions that offer counseling, food services, and/or worship services.

** Includes one (1) large church; one (1) medium-sized church; three (3) non-profits; three (3) other institutions that offer counseling, food services, and/or worship services; and one daycare. The daycare and large church are on the same property (counted as one (1) relocation).

The Steering Committee met on November 17, 2009 to review all approved technical reports, documents, and plans, results of public involvement activities, and public input and comments. Based on this information and project history, the Steering Committee unanimously voted in favor of moving forward with Alternative J-Modified into the Environmental Assessment and Public Hearing process.

2. Traffic Capacity Analysis (Future Build)

The intersection analyses included in the *U-3315 Traffic Capacity Analysis* (April 2008) show that the corridor experiences unacceptable levels of service (LOS) at certain locations under existing conditions and throughout the study area under No Build conditions in the Design Year 2030 (as discussed in **Section II.C.4.**). The Build condition is the same for Alternatives G-Modified, H, and J-Modified, since all three alternatives are the same except for alignment (i.e. widening to the north, south, etc.). The evaluation of the Build condition also shows that the proposed design would allow the study area intersections to operate at acceptable levels in Design Year 2030 at most locations. At the intersections of Stantonburg Road / Farmville Boulevard at Memorial Drive and Tenth Street at Evans Street, long cycle lengths and heavy left-turn and through volumes prevent the intersections from operating at acceptable levels of service even with geometric and signal improvements. The analysis projects LOS E under Build conditions at these locations. However, a LOS E is common in urban areas, and no feasible additional improvements were identified at either of these intersections to mitigate to LOS D. No

queuing issues were identified at either location with the recommended improvements and turn lane storages. Recommended improvements are summarized in **Section IV.F**.

After the *U-3315 Traffic Capacity Analysis* (April 2008) was completed, continued HPO coordination determined that the recommended capacity improvements could not be provided for the intersection of Tenth and Evans Streets without impacting a number of historic properties in the vicinity of the intersection. This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 4(f) of the US Department of Transportation Act of 1966. Federal regulations (explained further in **Sections V.B.1. and V.C.**) limit the use of land from historic properties. The National Register-listed Pure Oil Station, located on the southwest quadrant of the intersection of Evans and Ninth Streets, limits the amount of storage that can be provided for the southbound right-turn lane on Evans Street. The historic Jones-Lee House, located east of Evans Street between Eighth and Ninth Streets, also limits the amount of widening that can be done on Evans Street. As a result, the presence of the two (2) historic properties on either side of Evans Street precludes the possibility of providing dual left-turn lanes on either approach of Evans Street. The historic Great Swamp Primitive Baptist Church / Full Gospel Christian Church is located on the northeast quadrant of the intersection of Tenth Street at Forbes Avenue and limits any widening on Tenth Street east of Evans Street. These recommended improvements are also listed in **Section IV.F**.

The *U-3315 Supplemental Capacity Analysis* (June 2009) indicates that with these improvements in place, the intersection of Tenth Street and Evans Street is expected to operate at LOS D in the AM peak hour and LOS C in the PM peak hour for the 2005 Build condition and at LOS D in both the AM and PM peak hours for the 2010 Build condition. For the 2030 Build condition, the intersection is projected to operate at LOS F in the AM and PM peak hours, as summarized in **Table 15**. **Figure 15** shows the projected 2030 Average Daily Traffic Volumes for Alternative J-Modified. Additional improvements at this intersection will need to be performed under a separate project in order for this intersection to operate at LOS E or better by the 2030 Design Year.

The LOS at the intersection of Fourteenth Street and Dickinson Avenue is expected to improve from the existing year to projected 2030 operations (shown in **Tables 2 and 15**). Much of the left-turning traffic from Fourteenth Street to Dickinson Avenue is expected to use the Tenth Street Connector.

Table 15 – Build Scenario Projected (2030) Intersection Level of Service

Intersection	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
	(Delay in Seconds Per Vehicle)	
Stantonsburg Road / Farmville Boulevard at Memorial Drive	E (59.7)	E (59.8)
Farmville Boulevard at Bancroft Avenue / Line Avenue	B (11.1)	B (14.0)
Fourteenth Street at Farmville Boulevard / Tenth Street Connector	D (38.1)	D (46.8)
Fourteenth Street at Dickinson Avenue	D (52.3)	D (48.9)
Tenth Street / Grande Avenue at Dickinson Avenue	N/A	N/A
Tenth Street at Evans Street	F (120.3)	F (102.8)

Note: Analysis performed in Synchro 7.0 using HCM methodology. **Bold** designates unacceptable level of service (E or F)

C. Preferred Alternative

The City, NCDOT, and FHWA prefer Alternative J-Modified, which is described in detail in **Section IV**. Alternative J-Modified meets the purposes of the project. It has received support from the community through the public involvement process, and one of the reasons for its selection is the petition from Farmville Boulevard residents stating their preference for it.

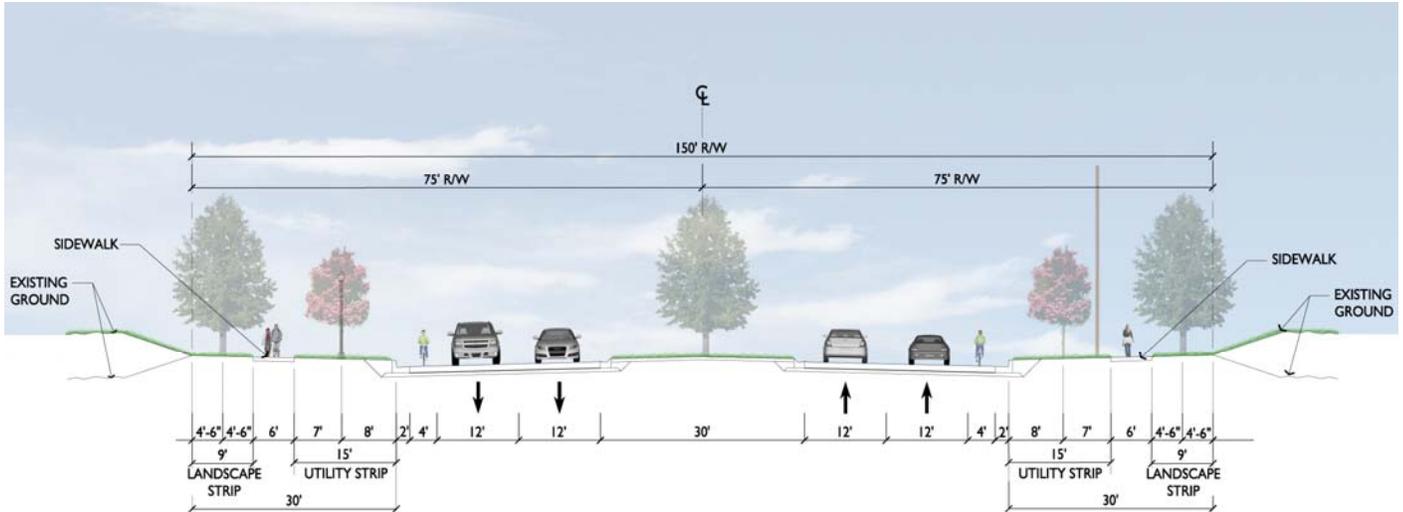
IV. Proposed Improvements

Preliminary roadway design of Alternative J-Modified is shown on **Figure 16(A-C)**, and typical sections are shown below and included in **Appendix F**. The following improvements are part of the Preferred Alternative, Alternative J-Modified. The No Build Alternative would not have any changes or improvements to the existing infrastructure.

Alternative J-Modified proposes to widen Farmville Boulevard asymmetrically to the south for a total typical section width of 150 feet, beginning at Memorial Drive to approximately 0.1-mile east. Alternative J-Modified then transitions to symmetrical widening on Farmville Boulevard (same 150-foot typical section) and uses new location between Fourteenth Street and Dickinson Avenue. The typical section width narrows to 83 feet on the bridge crossing the CSX Rail Line and Dickinson Avenue. From the easternmost bridge approach to Evans Street, Alternative J-Modified widens Tenth Street to the north with a 120-foot typical section.

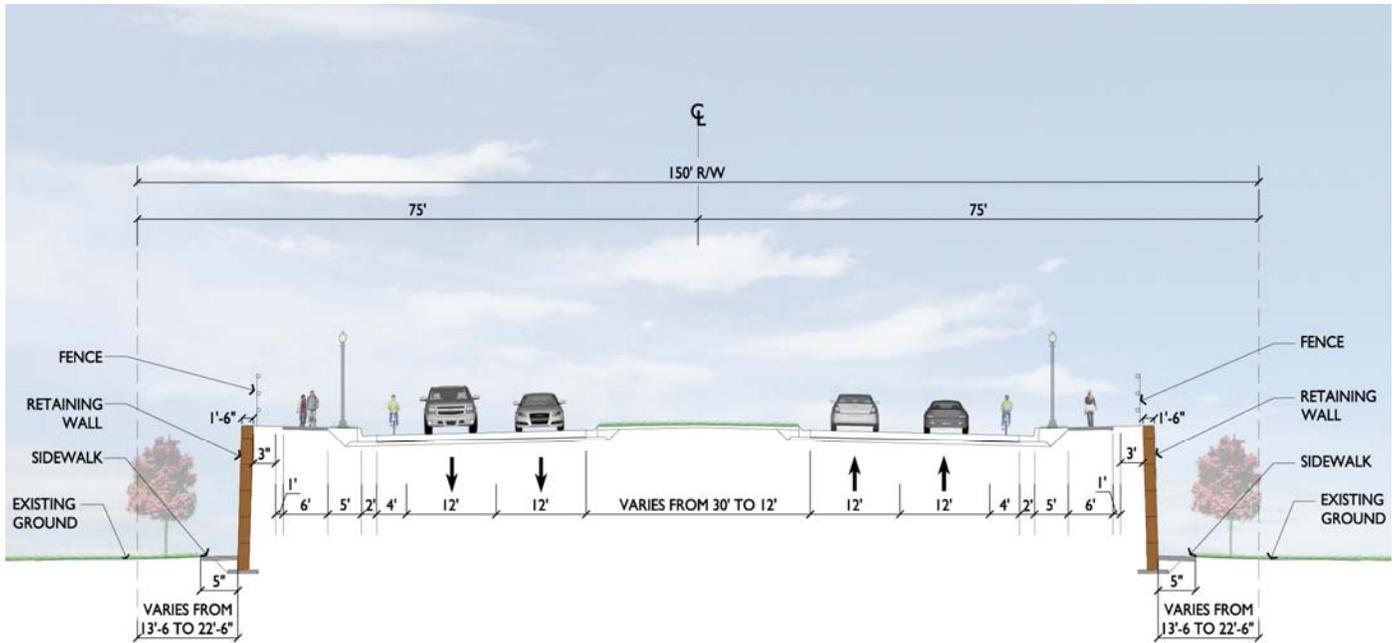
A. Roadway Cross-Section and Alignment

From Memorial Drive to the transition to a grade separation on new location, this project proposes to widen Farmville Boulevard to a median-divided roadway with a landscaped median, four 12-foot lanes, two four-foot outer bicycle lanes, curb and gutter, and six-foot sidewalks on both sides. The proposed 150-foot typical section is shown below.

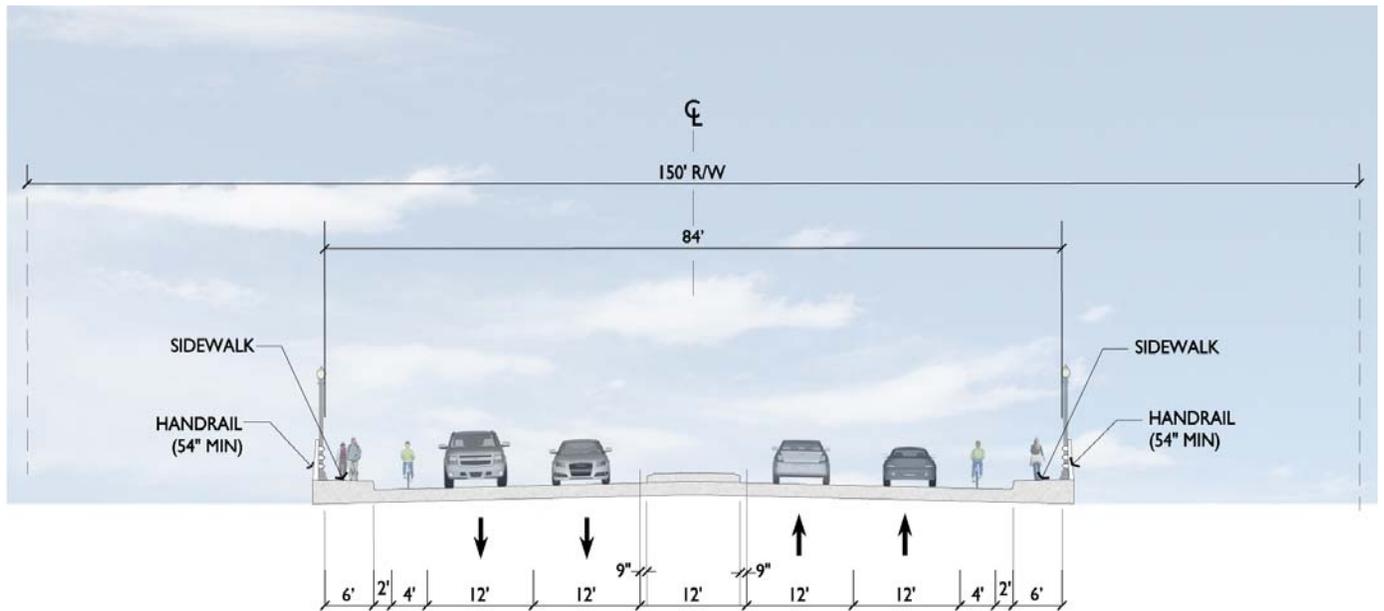


Typical Section from Memorial Drive to the Transition to a Grade Separation

As the connector transitions to a bridge between Fourteenth Street and Pitt Street, the typical section narrows to 84 feet, which includes four 12-foot travel lanes, a 12-foot raised median, two four-foot bicycle lanes, and two six-foot sidewalks. This narrowed cross-section, shown on the next page, reduces costs for the bridge structure.

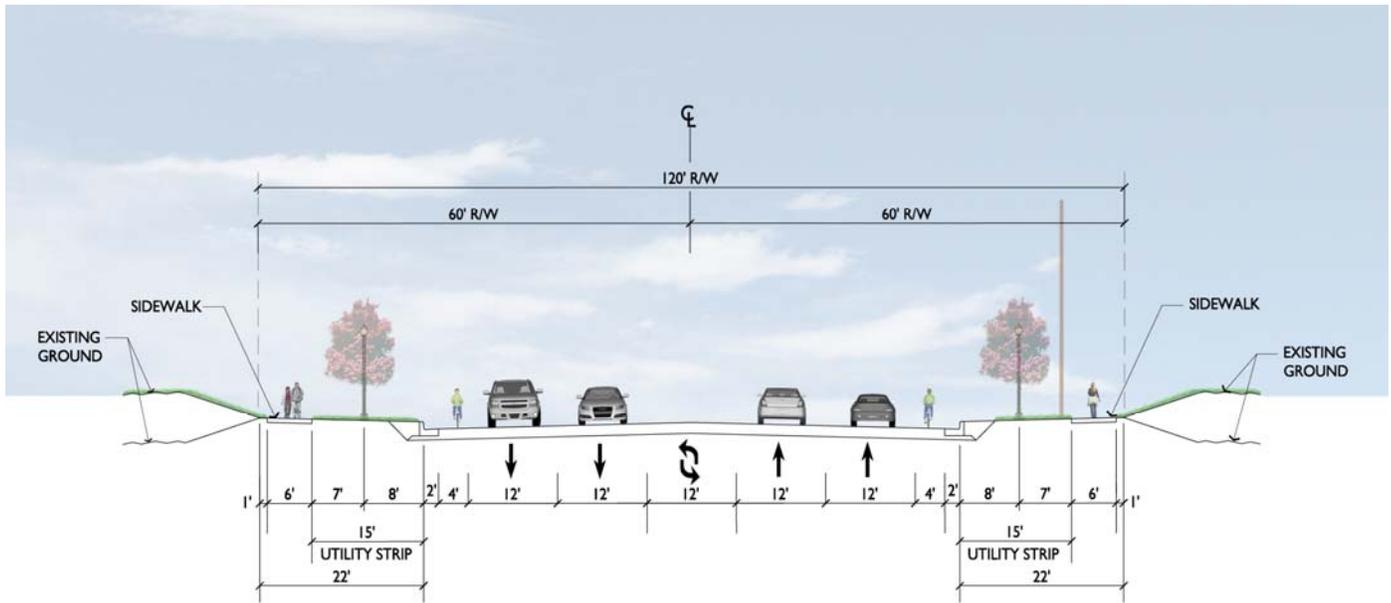


Typical Section of the Transition to a Grade Separation



Typical Section of the Bridge

On Tenth Street between the east bridge approach and Evans Street, the typical section is 120 feet wide to minimize impacts to the Tobacco Warehouse Historic District. The 120-foot typical section includes four 12-foot travel lanes, a 12-foot two-way left turn lane, four-foot bicycle lanes, and six-foot sidewalks.



Typical Section from the Easternmost Bridge Approach to Evans Street

B. Right of Way and Access Control

The existing right of way width along Farmville Boulevard from Memorial Drive to Fourteenth Street is approximately 50 feet. The proposed right of way width along Farmville Boulevard is 150 feet, and the proposed right of way varies with acquisition needed on both sides of the street. There is no existing control of access along Farmville Boulevard. The existing right of way width along Tenth Street is 70 feet. The proposed design width is 120 feet from the easternmost bridge approach to Evans Street, with acquisition occurring on the north side of Tenth Street from the easternmost bridge approach to Green Street and on both sides of Tenth Street from Green Street to Evans Street. There is no existing control of access along Tenth Street. Access control is proposed on the bridge and approaches.

C. Speed Limit

The posted speed limit for Greenville City streets is typically 35 miles per hour (mph). The speed limit on the new facility is anticipated to be posted at 35 mph.

D. Design Speed

The proposed design speed for the Stantonburg Road / Tenth Street Connector is 40 mph.

E. Anticipated Design Exceptions

The proposed improvements are in compliance with NCDOT *Roadway Design Manual* and the American Association of State Highway and Transportation Officials (AASHTO) *Geometric Design of Highways and*

Streets (2004, “Green book”). No requests for design exceptions are expected, although further design may reveal the need for exceptions.

F. Intersections / Interchanges

The following improvements are recommended based on the capacity analyses presented in the two *U-3315 Traffic Capacity Analyses*:

SR 1467 (Stantonsburg Road) / Farmville Boulevard at Memorial Drive

- An additional eastbound left-turn lane and an exclusive eastbound right-turn lane on Stantonsburg Road
- Restriping the existing eastbound shared left-through lane to an exclusive through lane
- Exclusive westbound left- and right-turn lanes on Farmville Boulevard
- Exclusive northbound and southbound right-turn lanes on Memorial Drive
- An additional 125 feet of storage for the existing southbound left-turn lane on Memorial Drive
- Modifying the traffic signal to remove the split phasing for the Stantonsburg Road and Farmville Boulevard approaches

Farmville Boulevard at Line Avenue / Bancroft Avenue

- Exclusive left-turn lanes on all four approaches

Farmville Boulevard / Tenth Street Connector at Fourteenth Street

- Restriping and additional lanes to provide one exclusive left-turn lane, dual through lanes, and an exclusive right-turn lane on eastbound Farmville Boulevard
- One exclusive left-turn lane, one exclusive through lane, and a shared through-right lane on the westbound Tenth Street Connector
- Restriping and additional lanes to provide dual exclusive left-turn lanes, an exclusive through lane, and an exclusive right-turn lane on northbound Fourteenth Street
- Restriping and additional lanes to provide an exclusive left-turn lane and a shared through-right lane on southbound Fourteenth Street

In the *U-3315 Traffic Capacity Analysis* (April 2008), the following roadway improvements were recommended at the intersection of Tenth Street and Evans Street:

- An additional northbound left-turn lane on Evans Street to provide dual left-turn lanes on this approach with 325 feet of storage each
- An additional southbound left-turn lane on Evans Street to provide dual left-turn lanes on this approach with 350 feet of storage each
- A southbound right-turn lane with 275 feet of storage on Evans Street

- An eastbound right-turn lane with 425 feet of storage on Tenth Street
- Extend the eastbound left-turn lane on Tenth Street to provide 400 feet of storage

The following additional improvements could be completed as part of a separate project in order to achieve LOS E at this intersection in the 2030 design year if needed:

- A northbound right-turn lane with 700 feet of storage on Evans Street
- An additional westbound left-turn lane on Tenth Street to provide dual left-turn lanes on this approach with 475 feet of storage each
- A westbound right-turn lane with 300 feet of storage on Tenth Street

Based on the limitations discussed in **Section III.B.2** and based on the analyses presented in the *U-3315 Supplemental Capacity Analysis*, the following roadway improvements are now proposed to be constructed at the intersection of Tenth and Evans Streets as part of this project:

- A northbound right-turn lane with 290 feet of storage on Evans Street
- Extension of the southbound left-turn lane on Evans Street to provide 265 feet of storage
- A southbound right-turn lane with 100 feet of storage on Evans Street
- An eastbound right-turn lane with 425 feet of storage on Tenth Street
- Extend the eastbound left-turn lane on Tenth Street to provide 400 feet of storage

No interchanges are planned as part of this project.

G. Service Roads

There are no service roads related to this project.

H. Bus Turn-Outs

Several bus turn-outs are shown on the Public Hearing Map for this project, located on the north side of Tenth Street just east of Tyson Street, on the south side of Tenth Street across from Beatrice Maye Garden Park, and on the north side of Tenth Street near Washington Street. These stop locations are subject to change and will be determined by the local transit authorities in the future. Bus routes may also change upon completion of the proposed Tenth Street Connector and the planned Intermodal Transportation Center on Evans Street. The area required to construct the bus turn-outs is contained within the proposed right of way for the project.

I. Railroad Crossings

The existing at-grade crossing of Tenth Street and the CSX Rail Line will be converted into a grade separation with a bridge carrying Tenth Street over the railroad and Dickinson Avenue, as shown in the following rendering (not to scale). Details of this analysis, coordination with CSX Transportation, and decision are documented in the *U-3315 Grade Separation Study* (August 2009). Two possible options were studied in the *U-3315 Grade Separation Study*: bridging Tenth Street over the existing CSX Transportation Rail Line (Option 1) and tunneling Tenth Street under the existing CSX Transportation Rail Line (Option 2). The Steering Committee decided on October 21, 2008 that Option 1 was preferred based on lower project costs, and it would not require disruptions CSX Transportation Operations, off-site traffic detours, pump storm drainage and sanitary sewer, or maintenance of the permanent lift station. CSX Transportation concurred with this recommendation upon their review of the study. HPO also expressed a preference for Option 1. The existing at-grade crossing of Tenth Street and the rail spur near Pitt Street will remain at-grade.



Proposed grade separation over CSX Rail Line and Dickinson Avenue

J. Structures

A new bridge carrying Tenth Street over the CSX Rail Line and Dickinson Avenue, as mentioned in the previous section, is proposed as part of this project. The bridge typical section is included in **Appendix F** and described in **Section IV.A**. No other structures are proposed.

K. Bicycle Accommodations

As part of the Preferred Alternative, four-foot striped bicycle lanes are proposed throughout the project. The NCDOT Bicycle and Pedestrian Division recommended bicycle accommodations for the full length of the corridor, and several citizens commented at the April 2009 workshop that they would prefer separate striped bicycle lanes.

L. Pedestrian Facilities

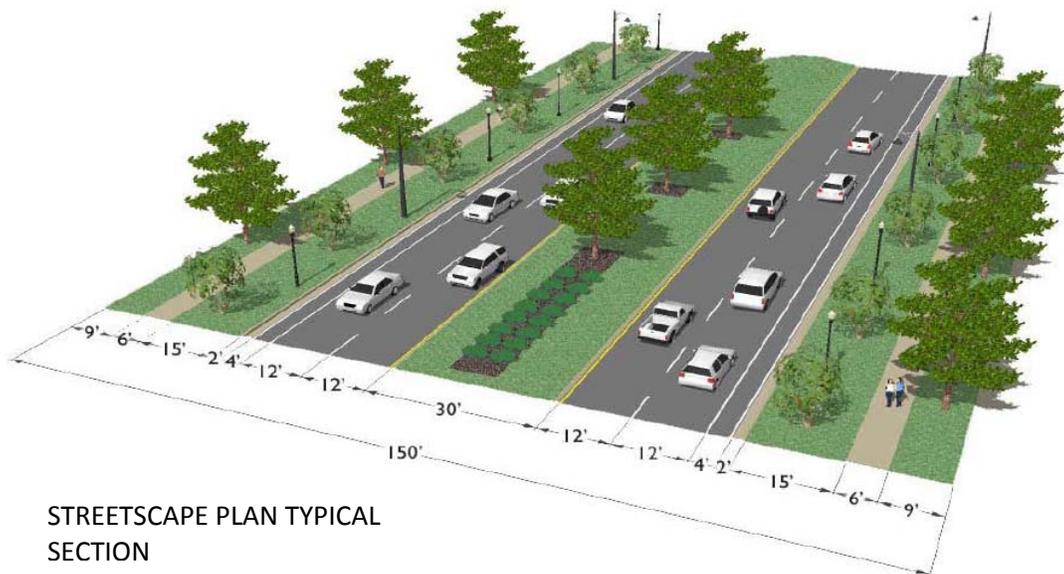
As part of the Preferred Alternative, six-foot sidewalks are proposed on both sides of the roadway throughout the project. Sidewalks are proposed on the bridge and at the base of the bridge retaining wall to connect to existing infrastructure.

M. Utilities

Utilities may be relocated as part of the proposed project. Final decisions on utility relocations will occur during final design, in coordination with the City and NCDOT. An inventory of existing utilities is catalogued in detail in the *U-3315 Utilities Technical Memorandum* (January 2009).

N. Landscaping

The typical section approved for Alternative J-Modified allows opportunities for landscaping in the median and behind the curb. The *U-3315 Streetscape Plan* was completed for this project in April 2009, highlighting possibilities for street trees and median treatment as shown in the drawing below.



STREETSCAPE PLAN TYPICAL SECTION

O. Noise Barriers

Noise barriers are not recommended as part of this project at this time. Noise walls would require minimization or termination of driveways (which is not reasonable along the project corridor) and would limit sight distance to vehicles entering from side streets and adjacent neighborhoods.

P. Work Zone, Traffic Control, and Construction Phasing

The *U-3315 Traffic Control Plan* (April 2009) for Alternative J-Modified includes traffic phasing sketches for phased construction. During Phase I of construction, the north side of Farmville Boulevard is expected to remain partially open to accommodate through traffic while the south side is constructed. Portable message signs would be used to direct drivers through the work zone. Phase I also would include construction through the new location portion of the project. Temporary detours and barricades would be used to divert neighborhood traffic. During construction on Tenth Street, the existing roadway would be closed to traffic, with detours using Evans and Washington Streets to access parallel roadways. During Phase II of construction, the south side of Farmville Boulevard would remain open to traffic while the north side is constructed. Portable message signs would be used to direct drivers through the work zone. Access to side streets from Farmville Boulevard would be limited during construction. The new location portion of construction would continue through Phase II. Phase III includes median construction and signal modification. The construction phasing plan will be finalized during the final design process in coordination with the City and NCDOT.

During construction of the bridge over the CSX Transportation Rail Line and Dickinson Avenue, roadway traffic on Dickinson Avenue will be maintained on existing location without detours. Chestnut Street and Columbia Avenue would be severed at the mainline with cul-de-sacs at the bridge. Dickinson Avenue through movements and the intersection and at-grade railroad crossing with Grande Avenue will remain under the current condition during and after construction. Grande Avenue between Dickinson Avenue and existing Tenth Street would be removed for bridge abutment construction. The section of existing Tenth Street between Dickinson Avenue and Clark Street would be removed for retaining wall construction. Traffic on Tenth Street would be detoured to surrounding roadways during construction.

V. Environmental Effects of Proposed Action

The No Build Alternative was carried forward to serve as a basis for comparing impacts and benefits of the build alternatives. The No Build Alternative would have no right of way or construction impacts (as discussed in **Section III.A.3.**), and provide no benefits. It would not meet the project purposes. The following section details the impacts of the Preferred Alternative, Alternative J-Modified.

Different study areas have been used as appropriate for specific analyses, as described below:

- Study area (**Figure 2**) – The original study area is in West Greenville, roughly bounded by West Fifth Street to the north, Reade Circle / Evans Street to the east, Norfolk Southern Railway to the south, and Moye Boulevard to the west. This study area also was used to collect data for the *U-3315 Natural Resources Technical Report* (NRTR).
- Alternative Corridor – A corridor encompassing Alternatives G-Modified, H, and J-Modified was presented to the public during the January 2007 Community Informational Workshop.
- Area of Potential Effect (APE) – The APE was used to identify historic architectural resources near the proposed project and is shown in **Figure 17**.
- Direct Community Impact Area (DCIA) – The DCIA was developed to identify direct project impacts on residential and commercial uses. The DCIA focuses on populated areas that may observe direct impacts from construction of the project. It follows neighborhood boundaries in West Greenville, including North Pines, Lincoln Park, Higgs Town, Higgs Brothers, and Village Grove. East of the railroad, the DCIA follows the alternative corridor boundary.
- Demographic Study Area (DSA) – The DSA was used to provide demographic and socioeconomic information for the community potentially affected by the project. This information is compared with statistics for surrounding areas, such as the city and county. It generally follows census block group boundaries for the area defined by the DCIA. For this project, the DSA was defined as the three (3) block groups composing the West Greenville neighborhood portion of the DCIA – Block Groups 7013, 7021, and 7022.

A. Natural Resources

Natural resources were catalogued in the *U-3315 Natural Resources Technical Report* (January 2008) and are summarized below.

1. Biotic Resources

Composition and distribution of biotic communities throughout the project study area are reflective of topography, hydrologic influences, and past and present land uses. The project study area is characterized as an urban landscape with variable maintained-disturbed vegetated areas. No distinct biotic communities were identified within the project study area. Native vegetation has been removed. The terrestrial species expected to be found within the project study area are those found in urban environments and are not likely to be negatively impacted as a result of project construction.

No aquatic habitats or communities that occur in or around streams, wetlands, and waterbodies are located within the project study area. Although no aquatic communities occur within the project study area, sedimentation and erosion from construction-related work may affect water quality and biological constituents in streams, wetlands, and waterbodies that occur outside of the project study area. Best management practices and erosion control measures will be used to minimize any potential impacts outside the project study area.

2. Waters of the United States

Section 404 of the Clean Water Act requires regulation of discharges into “Waters of the United States.” The US Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act (CWA); however, the US Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Wetlands, streams, and open waters are regulated by the USACE pursuant to Section 404 of the Clean Water Act. The NCDWQ also has regulatory input through Section 401 Water Quality Certification. Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Any actions that propose to place fill into these areas fall under the jurisdiction of the USACE under Section 404 of the CWA (33 USC 1344).

No jurisdictional streams or wetlands were identified in the project study area. Because there are no proposed impacts to “Waters of the United States” (including streams and wetlands), it is anticipated that Section 401 and 404 permits will not be necessary.

3. Rare and Protected Species

Federal law under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires that any action likely to adversely affect a federally protected species be subject to review by the US Fish and Wildlife Service (USFWS). Other species may warrant protection under separate state laws. Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the ESA.

“Critical habitat,” as defined in the ESA, is a term for habitat given special protection for the benefit of a listed species. Critical habitat, as defined by the USFWS, is not designated for any species listed in Pitt County. In addition, according to the NC Natural Heritage Program’s (NCNHP) database (updated on March 1, 2007 and reviewed on June 7, 2007), no federally listed threatened, endangered, or species of concern listed by the USFWS have been documented within a one-mile radius of the proposed project corridor.

According to the November 5, 2007 USFWS *List of Threatened and Endangered Species in North Carolina* (per the January 31 2008 update for Pitt County), three (3) federally protected species (**Table 16**) are listed for Pitt County. Descriptions of these species and their habitat requirements are discussed below.

Table 16 – Federally Protected Species for Pitt County, North Carolina

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Habitat Available*	Biological Conclusion
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	E	Pine or pine/hardwood forest, 80+ years of age with sparse understory	No	No effect
<i>Elliptio steinstansana</i>	Tar River spiny mussel	E	E	Tar River drainage, primarily Swift Creek	No	No effect
<i>Trichechus manatus</i>	West Indian manatee	E	E	Warm waters of estuaries and river mouths	No	No effect

* Habitat does not exist in the project study area.

Note: E – Endangered

Source: USFWS Database (updated on January 31, 2008)

Federally-listed endangered species are those species that are threatened with extinction throughout all or a significant portion of their ranges. Federally-listed threatened species are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges.

In addition to the aforementioned federally protected species, the bald eagle (*Haliaeetus leucocephalus*) receives protection under the Bald and Golden Eagle Protection Act (Eagle Act) (16u.S.C. 668-668d) and the Migratory Bird Treaty Act. Removal of the Bald Eagle from the Federal List of Endangered and Threatened Wildlife became effective on August 8, 2007. Under provisions of the ESA, bald eagle populations will continue to be monitored at least until 2012. Suitable habitat for the bald eagle consisting of large bodies of water is not present within the project study area. There are no known nesting bald eagles within 600 feet of the project study area. Based on the information above and field reconnaissance, there is no potential habitat within the project study area. No impacts to this species from project construction are anticipated.

4. Soils

Soil associations are classified as a group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a general region. The soils within an association generally vary in depth, slope, stoniness, drainage, and other characteristics.

Based on information obtained from the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) office for Pitt County, the soils within the project study area are composed of eleven soil series: Bibb complex, Craven fine sandy loam, Exum fine sandy loam, Goldsboro sandy loam, Lynchburg fine sandy loam, Norfolk sandy loam, Ocilla loamy fine sand, Pactolus loamy sand, Rains fine sandy loam, Roanoke silt loam, and Wagram loamy sand.

The NRCS defines a hydric soil as one that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil (USDA, 1995). Such soils usually support hydrophytic vegetation. Based on information obtained from the soil survey for Pitt County, Bibb complex, Rains fine sandy loam, and Roanoke silt loam are hydric soils located within the project study area. Goldsboro sandy loam (0-1% slopes), Lynchburg fine sandy loam, Ocilla loamy fine sand, and Pactolus loamy sand are not classified as hydric soils, but may contain hydric inclusions. Although there are hydric soils located within the project study area, these soils are all likely drained due to the extensive urban development in the area.

B. Cultural Resources

1. Historic Architectural Resources

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally-funded, licenses, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

Historic resources are inventoried in the *U-3315 Historic Architectural Resources Survey Report* (May 2007) and summarized in this section. An intensive-level historic resources survey was conducted to determine the Area of Potential Effect (APE) and to identify and evaluate all structures within the APE that may be eligible for the National Register of Historic Places according to the National Register's Criteria for Evaluation. Two historians conducted the field survey of the APE in March 2006, photographing, mapping, and evaluating every property that appeared to be over 50 years of age and properties less than 50 years of age that may have exceptional significance. Historians identified 206 such properties in the APE. At a June 13, 2006 concurrence meeting with NCDOT and the North Carolina State Historic Preservation Office (HPO), 199 properties were determined not worthy of further evaluation. Seven (7) properties or districts were intensely surveyed and evaluated (shown on **Figure 17**).

Properties Listed in the National Register of Historic Places:

- **Dickinson Avenue Historic District**, roughly including properties facing Dickinson Avenue between Reade Circle and Tenth Street and Pitt, Atlantic, and Albemarle Streets north from Tenth Street.
- **Greenville, North Carolina Tobacco Warehouse Historic District and Greenville, North Carolina Tobacco Warehouse Historic District Boundary Increase**, including properties on Eighth, Ninth, Tenth, Eleventh, Twelfth, Ficklen, Pitt, and Washington Streets and the north side of Eleventh Street flanking Clark Street.

Properties Previously Determined Eligible for the National Register:

- **Perkins Town-Cherry View Historic District**, roughly bounded by West Fifth Street (formerly Martin Luther King, Jr. Drive) and Albemarle, Fleming, Tyson, and Bancroft Streets.

Properties Evaluated and Determined Eligible for the National Register:

- **Jacob W. Higgs House**, 1112 Dickinson Avenue (also designated as a Local Landmark by the City of Greenville).
- **Great Swamp Primitive Baptist Church**, 911 Forbes Street.
- **Pure Oil Station**, West Ninth and Evans Streets.

Properties Evaluated and Recommended Not Eligible for the National Register:

- **Row of Shotgun Houses**, west side of 1500 block of Dickinson Avenue.

Revised preliminary roadway designs were presented to the HPO in a meeting with NCDOT on June 30, 2009. It was determined that Alternative J-Modified would have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, and Perkins Town – Cherry View Historic District. The following other determinations were issued for Alternative J-Modified:

- No Adverse Effect on the Tobacco Warehouse Historic District and Boundary Increase if the right of way is restricted to 120 feet wide and the design returns to existing grade before the Historic District boundary.
- No Adverse Effect on the Dickinson Avenue Historic District if landscaping treatment, a brick-façade retaining wall, bridge guardrail, and a pedestrian path are installed. NCDOT Historic Architecture Group and HPO requested consultation with the project team during final design.
- No Effect on the Pure Oil Station (located on the northwest corner of Tenth and Evans Streets), given that the roadway taper ends before the property boundary and ties into the existing curb. Final roadway design must require no permanent easement or property taken from this parcel.

The concurrence forms regarding historic resources and effects are included in **Appendix B**. Historic Resources and the APE are shown in **Figure 17**.

2. Archaeological Resources

In a memorandum dated February 14, 2006, HPO stated that, based on their knowledge of the area, it is unlikely any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. They therefore recommended that no archaeological investigation be conducted in connection with this project. A copy of the February 14, 2006 memorandum is included in **Appendix A**.

C. Section 4(f) / 6(f) Resources

Section 4(f) of the US Department of Transportation Act of 1966 stipulates that FHWA and other USDOT agencies cannot approve the use of land from publicly owned public parks, recreational areas, wildlife and waterfowl refuges, or public or private historic sites unless there is no feasible and prudent alternative and the action includes all possible planning to minimize harm to the property resulting from use.

Beatrice Maye Garden Park is a triangular piece of open space land approximately one-half acre in size, bordered by Farmville Boulevard, Tyson Street, and Davenport Street. This area primarily functions as an honorary tribute to Ms. Maye but has no amenities such as parking, picnic tables, lighting, recreational fields, playgrounds, public buildings, or facilities. The City of Greenville Recreation and Parks Department states in their letter to FHWA (November 2, 2009) that this property “does not function in the same capacity as the City’s other parks or recreational areas that might be considered under Section 4(f). In reference to this Section, the open space area may be considered as an incidental, secondary, or occasional park.” The Recreation and Parks Department has expressed their support of Project U-3315 and has determined that the potential impacts to the park area by this project will be acceptable. In response to the City’s letter, FHWA has determined that Beatrice Maye Park is not considered a resource protected under Section 4(f) of the US Department of Transportation Act of 1966. A copy of this correspondence is included in **Appendix A**.

Protection under Section 4(f) also applies to the historic sites located in the project study area. As discussed in **Section V.B.1.**, HPO and FHWA determined that Alternative J-Modified would have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, and Perkins Town – Cherry View Historic District. A determination of No Adverse Effect (with commitments listed in **Section V.B.1.**) was given for the Tobacco Warehouse District and Boundary Increase and Dickinson Avenue Historic District. A determination of No Effect (with commitments listed in **Section V.B.1.**) was given for the Pure Oil Station. FHWA determined that HPO’s concurrence is the basis of a *de minimis* finding, pursuant to Section 4(f). An analysis of avoidance alternatives is not required per FHWA *Guidance for Determining De Minimis Impacts to Section 4(f) Resources*, 2005. The *de minimis* statement is included on the concurrence form, dated June 30, 2009, and included in **Appendix B**.

Section 6(f) of the Land and Water Conservation Act protects recreation lands that have received Land and Water Conservation Fund money. No Section 6(f) resources are in the study area.

D. Farmland

The Farmland Protection Policy Act (7 CFR Part 658) establishes criteria for identifying and considering the effects of federal programs on the conversion of farmland to non-agricultural uses. This project is located entirely inside the City limits of Greenville, North Carolina, and there is no farmland inside the study area.

E. Social Effects

1. Neighborhoods / Communities

This project is located primarily in West Greenville, with a portion along Tenth Street east of the CSX Railroad tracks. The western portion of the Direct Community Impact Area (DCIA) is primarily residential, and is comprised of the Higgs Brothers, Higgs Town, Village Grove, North Pines, Lincoln Park, and Farmville Boulevard neighborhoods (shown in **Figure 18**).

These West Greenville neighborhoods are primarily residential, with the exception of North Pines, which is commercial fronting Memorial Drive and Farmville Boulevard. The neighborhoods are interspersed with small businesses, churches, and other community facilities. Homes in West Greenville are generally small to mid-sized on lots with short set-backs, and most residences are part of a subdivision (as is typical with housing in most cities). Although these neighborhoods have been defined as separate areas, there is continuity throughout West Greenville that crosses the neighborhood boundaries. However, residents in West Greenville neighborhoods reported feeling connected with their nearby neighbors, but not feeling the same connection to stores and churches in their areas. No anticipated negative impacts are anticipated to neighborhood cohesion between the Village Grove, Higgs Brothers, North Pines, and Lincoln Park neighborhoods.

Alternative J-Modified would affect the Higgs Brothers neighborhood, generally located between Fourteenth Street and the CSX Railroad. Impacts include residential and business relocations and changes to access. Since the majority of the direct impacts are to businesses and because the new connector would be located at the edge of the Higgs Brothers neighborhood, only minor impacts to cohesion are anticipated for the Higgs Brothers neighborhood.

There is currently interconnectivity between Higgs Brothers and Higgs Town, which would be affected by the construction of the bridge over the railroad. Spruce Street to the north, Myrtle Street to the south, Pennsylvania Avenue to the north, Chestnut Street, Columbia Avenue, and Grande Avenue would be closed to provide a grade separation (bridge) over the railroad. Citizens would be able to cross the connector at Fourteenth Street at the west bridge terminus or via Dickinson Avenue / Grand Avenue under the bridge. Since the streets in this area were designed using a grid system, these changes in access would not require a long detour between the two neighborhoods. A new sidewalk is proposed at ground level, running parallel with the bridge to connect the adjacent streets. Therefore, only minor impacts are anticipated to cohesion and interconnectivity for these neighborhoods.

The exception to the West Greenville continuity lies at Farmville Boulevard. Citizens at public meetings stated that Farmville Boulevard currently creates a barrier between North Pines / Lincoln Park on the north and Village Grove / Higgs Brothers on the south. Residents in the neighborhoods adjacent to the Farmville Boulevard neighborhood (Village Grove, Higgs Brothers, Lincoln Park, and North Pines) have said that it is often difficult to cross Farmville Boulevard due to its size, vehicle speeds, and traffic volumes. Residents — especially pedestrians and bicyclists — tend to shop and recreate on either the north or south side of West Greenville, depending on the location of their house.

Although the residences along Farmville Boulevard are not identified by the City as a cohesive neighborhood, the residents along Farmville Boulevard between Line Avenue / Bancroft Avenue and Fourteenth Street feel they form a cohesive neighborhood. The proposed project would directly impact the Farmville Boulevard neighborhood through residential relocations. Alternative J-Modified would require more relocations than other detailed study alternatives, but would have a smaller impact on community stability. Residents on Farmville Boulevard have expressed the desire during public meetings to be relocated rather than having the project only impact one side of the street. Alternative J-Modified would require relocation of almost all homes in the Farmville Boulevard neighborhood; the City's Tenth Street Connector Supplemental Relocation Program would offer to provide all relocated residents a parcel in the Lincoln Park neighborhood. Since all residents would have the opportunity to move together as a cohesive unit to a new neighborhood within West Greenville under this relocation program, the impact to the cohesiveness of Farmville Boulevard would be minimized.

With the construction of a sidewalk connector, in conjunction with other redevelopment in the area, overall neighborhood connectivity is anticipated to improve through West Greenville. The median, sidewalks, bike lanes, and landscaping elements are expected to enhance the traveling experience for residents and visitors and encourage bicycle and pedestrian movement across Farmville Boulevard.

The eastern portion of the DCIA is along Tenth Street. The north side of Tenth Street is commercial, and the majority of the south side is owned but currently unused by ECU.

2. Relocation of Residences and Businesses

Relocations are based on the NCDOT Relocation Report (October 2009, **Appendix C**). Based on preliminary designs, Alternative J-Modified would require approximately 30 residential (5 of which are multi-family residences) and 24 commercial relocations.

a) NCDOT Relocation Policy

NCDOT will provide relocation assistance through the Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970, as amended in 1987). It is the policy of NCDOT (program summary included in **Appendix D**) to ensure that comparable replacement housing is available for relocates prior to construction of state and/or federally funded projects. NCDOT has three (3) programs to minimize the inconvenience of relocation: relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplements.

b) City of Greenville Supplemental Relocation Program

On February 5, 2007, the Greenville City Council approved the Tenth Street Connector Supplemental Relocation Program (summarized in Appendix E of the *U-3315 Community Impact Assessment*, incorporated by reference) that would provide affected residents who want to stay in West Greenville an option to relocate to the Lincoln Park neighborhood north of Farmville Boulevard (see **Figure 18**). The program offers homeowners the option to move their existing home to a lot, build a new home on a lot, or purchase a home in this neighborhood. Tenants who are interested in purchasing homes in the area will be eligible to participate in this program as well. This relocation plan would be used after NCDOT completes its relocation negotiations with the homeowners.

Citizens along Farmville Boulevard who may be relocated have expressed support of this program, and have stated during public involvement activities that they would prefer to move to a quieter neighborhood within West Greenville than remain on Farmville Boulevard once the connector is built. A petition signed by 36 residents along Farmville Boulevard indicates support for widening symmetrically, which would relocate residents from both sides of the road. These signatures represent 18 of the 22 homes on Farmville Boulevard that would be relocated under Alternative J-Modified (widening symmetrically). Of these 18 homes, it is estimated that four (4) are occupied by tenants, and the remainder are owner-occupied residences.

3. Environmental Justice

“Environmental justice” refers to issues related to the prevention of discrimination against minority and low-income communities. An in-depth environmental justice analysis is included in the *U-3315 Community Impact Assessment* (October 2009) and is summarized here.

Table 17 compares the study area demographic characteristics with Greenville and Pitt County.

Table 17 – Demographics of Demographic Study Area

Indicator	Demographic Study Area		Percentage Comparison	
	Number	Percentage	Greenville	Pitt County
Minority Population	3,118	97.5%	38.6%	37.9%
Hispanic or Latino Population	36	1.1%	2.1%	3.2%
Households Below Poverty	345	31.7%	26.1%	20.3%
Median Home Value	\$49,300*	N/A	\$110,200	\$96,800

* Median for the study area was calculated as the average of the medians for the block groups in the DSA.
Source: US Census 2000

Title VI of the Civil Rights Act of 1964 and related statutes require that there be no discrimination in federally assisted programs on the basis of race, color, national origin, age, sex, or disability. According to the FHWA, there are three (3) fundamental environmental justice principles. These principles are listed below with the implementation specific to this project.

1. Principle: To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority and low-income populations.

Implementation: Disproportionality is determined by comparing the effect on the environmental justice population with the effect on non-environmental justice populations. A disproportionate effect is defined by FHWA as one that is:

- Predominately borne by a minority population and/or low-income population, or
- Suffered by the minority population and/or low-income population that is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Adverse effects are determined by the combination of an impact analysis and public feedback.

2. **Principle: To ensure the full and fair participation by all potentially affected communities in the decision-making process.**

Implementation: A thorough public involvement program is part of this project, as described in Section VI.

3. **Principle: To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.**

Implementation: A benefits/burdens analysis was performed to address this principle.

Avoidance, Minimization, Mitigation, and Enhancement Measures

Avoidance is the most direct way of removing implications of a project. Avoidance measures were taken during the alternatives development process to include options that completely avoid impacts to a particular community facility or important resource. Alternative J-Modified avoids impacting the following resources / facilities that are important to the minority and/or low-income community:

- The historic Jacob W. Higgs House
- The Sycamore Chapel Baptist Church
- The Tender Touch Day Care

Minimization is the second most desirable way to address an impact. This method is used when an adverse impact cannot be removed from the project, but the project can be modified to reduce the level of impact.

- Alternative J-Modified reduced impacts to neighborhood cohesion by placing the bridge at the edge of the Higgs Brothers neighborhood.
- Proposed retaining-wall design for the bridge approaches avoids additional impacts from roadway sideslopes.
- It is expected to have fewer impacts on community stability of the Farmville Boulevard community by offering to relocate residents together to a new neighborhood rather than retaining a fractured community.
- Allowing right-in / right-out access rather than closing cross streets would provide connectivity within West Greenville.
- Improved street lighting and a landscaped strip between travel lanes and sidewalk would improve safety conditions for pedestrians.

Mitigation is the process of undertaking an action to alleviate or offset an impact or to replace an appropriate resource.

- Pedestrian amenities along the corridor include new sidewalks, landscaping in the median and utility strips, and may include decorative vehicular, benches, and pedestrian lighting. These improvements would enhance access to shopping and employment centers (including PCMH, ECU, and downtown Greenville), reduce potential safety issues for pedestrians currently walking on the road or on the grass adjacent to the road, and improve conditions for residents desiring to walk within the neighborhood.
- Bicycle lanes would be added along the connector, reducing potential safety issues for bicyclists who currently ride with vehicles in the travel lane. A streetscape plan also would consider bike racks at bus stops, which would improve multi-modal connectivity throughout Greenville and the region.
- The final design of the bridge will include consideration of the retaining wall design to further minimize visual impacts to the adjacent neighborhoods.
- Right of way acquisition and relocation assistance will be performed by NCDOT. However, the Greenville City Council approved a supplemental relocation program in conjunction with this project. Under the Tenth Street Connector Supplemental Relocation Program, residents whose property is within the right of way would have an option to relocate to the Lincoln Park neighborhood north of Farmville Boulevard. This program assists homeowners who wish to move their existing home to a lot, build a new home on a lot, or purchase a home in this neighborhood. Tenants who are interested in purchasing homes in the area will be eligible to participate in this program as well. The City has purchased approximately 20 parcels in the new neighborhood. This would allow Farmville Boulevard residents to stay within the community, continue to live near their current neighbors, and own a house of approximately the same value as their current home on a quieter street.

Benefits / Burdens Summary

Based on the information provided in the sections above, the positive and negative impacts of this project on environmental justice populations have been compared with the impacts on non-environmental justice populations.

The connectivity and safety benefits of this project (for example, safer/easier crossing of Farmville Boulevard) would be felt by the entire community. Those living or working within the project corridor would have improved pedestrian and bicycle access to their property. A new sidewalk parallel to the bridge will maintain pedestrian and bicycle connectivity between streets that will be closed to vehicular traffic. With a median and right-in / right-out access at driveways and cross-streets, it would be easier to for residents to enter and exit driveways along the corridor, although business patrons would have reduced access to driveways. Residents in Greenville, emergency responders, and others in the region accessing PCMH from the east would have a more direct route that no longer requires stopping at the CSX Railroad crossing. The grade-separated crossing and elimination of turns and traffic signals would improve travel time to the hospital and other destinations. Drivers coming into Greenville toward ECU or the downtown also would have a more direct route without stopping at the railroad, and they would

enjoy the connector as a gateway into Greenville. Drivers traveling through Greenville also would appreciate the direct route and streetscaping along the corridor.

The burdens of this project would lie primarily with those within the proposed right of way. The West Greenville area is 98% minority and 32% below poverty, compared with approximately 38% minority in Greenville and Pitt County, and between 26% and 20% below poverty in Greenville and Pitt County. Impacts would be from relocations, reduction in access, and changes in community cohesion. However, the minimization and mitigation measures included as part of this project would reduce impacts to these residential populations. The City's Tenth Street Connector Supplemental Relocation Program would offer impacted residents the opportunity to relocate to the Lincoln Park neighborhood with no additional mortgage costs, and many potentially impacted residents have requested to be moved rather than to remain along the new connector after their neighbors have been relocated. The City has purchased vacant lots and is building new homes to create a vibrant residential neighborhood. The new neighborhood would be quieter than Farmville Boulevard with less traffic and many of the same neighbors. Vehicular access impacts are minor because of West Greenville's grid street network. Residents and businesses who remain on Farmville Boulevard would experience a change in access due to the new right-in / right-out cross streets, but it would be easier for them to enter and exit their driveways because of the median. Community cohesion and community stability impacts would be minor.

Businesses that are relocated as part of this project would be compensated under NCDOT's relocation policy. Alternative J-Modified has been redesigned to reduce impacts to businesses on Fourteenth Street and Evans Street. There would also be an impact to some businesses, especially those along Dickinson Avenue, resulting from the grade-separated crossing at the railroad. Since Dickinson Avenue will no longer connect directly with Tenth Street, a reduction in pass-by traffic is anticipated. New signs may be installed by the City which would direct drivers to retail areas such as Dickinson Avenue and the downtown.

Pedestrian and bicycle access would be improved in most areas adjacent to the new connector. The current route and adjacent neighborhoods do not have bike lanes, although bicyclists have been observed traveling along the corridor. Pedestrians in the project corridor use various existing sidewalks (described in **Section II.C.2**). The proposed cross-section would include sidewalks and bike lanes on the corridor, as well as additional sidewalks at ground level parallel to the bridge structure. These sidewalks would provide connectivity between the new connector and the adjacent neighborhoods. Transit service would likely be added along the connector, providing a more direct and shorter route between East and West Greenville and potentially providing a benefit to residents and businesses remaining on Farmville Boulevard if new stops are added along the route. Transit plans have not been finalized.

The proposed cross-section of the connector would improve the viewshed along Farmville Boulevard and Tenth Street for drivers and others traveling along the road. The western section anticipates the use of a tree-lined boulevard, various landscaping, a wide median, and other landscaping amenities. The eastern section would be designed in keeping with the historic district requirements. However, the

bridge between Fourteenth Street and Pitt Street would create a visual barrier for those living and working in the neighborhoods adjacent to the connector. Potential mitigation strategies such as streetscaping, enhanced green areas, and a decorative wall treatment may reduce the impact to aesthetics in these areas. These elements will be finalized during the design phase.

Final Determination of Adverse and Disproportionate Effects

After completing the environmental justice analysis, it has been determined that FHWA's environmental justice principles have been followed.

- With the avoidance, minimization, and mitigation actions described above, there are no disproportionately high and adverse effects on minority and low-income populations.
- As documented in **Section VI.**, the project's extensive public involvement program was developed to ensure the opportunity for full and fair participation of all potentially affected communities in the decision-making process.
- The construction of this project would result in improvements to vehicular, pedestrian, and bicycle access for minority and low-income populations, as well as for other residents in Greenville and surrounding communities. The City's Tenth Street Connector Supplemental Relocation Program has been designed to minimize or eliminate impacts to relocated residents by providing options for owners to stay in West Greenville without incurring additional mortgage costs. Residents on Farmville Boulevard have stated that they would prefer to live in a residential neighborhood rather than on a four-lane road with heavy traffic; the potential benefit to residents as part of the relocation program would only be provided to the community as a part of this project.

In the absence of avoidance, minimization, mitigation, and enhancement measures, this project would possibly result in disproportionately high or adverse impacts to the minority and low-income community. The intent of the avoidance, minimization, and mitigation measures is to mitigate the disproportionately high or adverse effects of this project on environmental justice populations. Although the impacts of the project would be borne primarily by minority and low-income communities, based on the feedback from citizens at the March, April and June 2009 small group meetings, the CAC meetings, and the community workshops these effects have been mitigated to an extent that the impacts to these communities are not considered disproportionately high and adverse.

Therefore, the Stantonsburg Road / Tenth Street Connector as currently planned does not have a disproportionately high and adverse effect on minority or low-income populations.

4. Bicycle and Pedestrian Facilities

Bicycle Routes

Currently, there are no bicycle lanes, designated bicycle routes, or greenways within the DCIA. Bicyclists were observed throughout the DCIA on both arterials and residential streets.

Pedestrian Routes and Sidewalks

Existing sidewalk locations are described in **Section II.C.2**. Residents have been observed using these sidewalks during the day, and also have been seen walking on streets or in the grass along streets without sidewalks. A high level of pedestrian activity was observed in the northeast Higgs Brothers neighborhood, which includes primarily residential streets interspersed with small businesses. A few pedestrians and bicyclists were observed along Farmville Boulevard, although residents have noted that those users typically come from east of Farmville Boulevard and use that route to access the stores on the west end of Farmville Boulevard or on Memorial Drive. According to the 2000 Census, 3.6% of residents in the DCIA walk to work.

5. Recreational Facilities

There are no recreational facilities along the project corridor.

6. Other Public Facilities and Services

Relocations are based on the NCDOT Relocation Report (October 2009, **Appendix C**). Alternative J-Modified would impact New Beginnings Christian Center, Way of the Cross, and Good Shepherd Apostolic Faith Church, all of which are small (10-25 member) minority churches registered as non-profits. It also would impact Daniel's Community Church, Divine Deliverance Church, and House of Prayer, small minority churches which are not registered as non-profits but offer worship services and other public assistance programs. Finally, it would impact Hope of Glory Church, a medium (100-150 members) non-minority congregation.

Sadie Saulter Elementary School is planned to be discontinued as a school beginning in the 2010-11 school year. Therefore, there are no impacts to schools. Alternative J-Modified would impact the property currently used by the elementary school but no buildings. No other long-term impacts to community facilities are anticipated as a result of this project. Temporary impacts during construction are likely, including access, noise, and air quality impacts.

The community and local officials have expressed several concerns related to safety and emergency response. No direct route exists from East Greenville to PCMH / Health Science Campus without an at-grade crossing of the north-south CSX Railroad track. The current route of Farmville Boulevard / Fourteenth Street / Dickinson Avenue / Tenth Street is used by local police and emergency responders traveling to or from Pitt County Memorial Hospital. The delays created by the railroad pose a critical problem for emergency and police vehicles, as well as for patients traveling to the hospital from central and East Greenville and other parts of eastern North Carolina. The unpredictability of the train movements further compounds this problem. After the connector is built, emergency response time is anticipated to decrease, and reliability would increase through this portion of West Greenville.

During construction, portions of this route may be temporarily closed or narrowed from four lanes to two lanes, which may lengthen travel time through the corridor. Emergency responders will have the choice to continue to use this route or to use a parallel route during construction. It is anticipated that

there may be increased emergency response times during construction, but there will be no long-term impacts.

F. Economic Effects

The proposed project would affect businesses through relocations, changes in access, and potential changes in pass-by travel patterns. Most negative impacts would be felt by businesses within the DCIA, and businesses outside of the DCIA would realize many of the benefits. Mitigation and minimization efforts (described in **Section V.E.3**) are expected to reduce negative impacts on businesses.

The concerns of local businesses largely depend upon their location. Businesses located in the potential path of the proposed project are concerned about moving to a new location, losing their customer base, and paying higher business overhead costs. During the 2009 small group meetings, business owners along Dickinson Avenue expressed concern that there would be no direct connection between Dickinson Avenue and Tenth Street. They felt that the loss of pass-by traffic of drivers would negatively affect their businesses. On the other hand, downtown businesses look forward to having better east-west access through the city uninterrupted by train traffic.

Alternative J-Modified would require approximately 24 commercial relocations (October 2009 relocation reports are in **Appendix C**), many of which are rentals. NCDOT will offer relocation assistance to businesses that will be directly impacted by this project as part of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970, as amended in 1987).

During the April 2009 small group meeting, business owners requested that the design team redesign the detailed study alternatives along Fourteenth Street and Evans Street to reduce the number of impacts. Following that meeting, the design team completed the requested redesign of all three (3) detailed study alternatives, which resulted in a reduction of impacts to businesses. This was possible because of recent news that Sadie Saulter Elementary School would no longer serve as a school by the 2010-11 school year. With this change of land use, the connector road is allowed to encroach onto the (former) school's property, providing more flexibility for design. The new designs were presented to business owners in June 2009, after which many of the business owners expressed their satisfaction with the changes.

During the April and June 2009 small group meetings, many business owners stated that they felt that NCDOT's relocation program for businesses would not provide adequate reimbursement, and several expressed concern that they would not be able to find a vacant property for a price similar to their current location. According to the US Department of Housing and Urban Development (HUD), there were a total of 70 vacant business addresses in the four Census tracts encompassing the study area (approximately 4% of businesses) as of March 2009. NCDOT and the City plan to assist businesses in finding new locations, within West Greenville if possible. The City of Greenville has several programs targeted to attracting businesses into the Center City-West Greenville Redevelopment Area, which is located to the north of the project corridor.

East Carolina University would benefit from the multimodal transportation link resulting from the Stantonsburg Road / Tenth Street Connector, which would connect the University's main campus with the Health Science Campus and Brody School of Medicine to the west. The connector also would serve as a gateway into the main campus, improving access for visitors.

Staff, patients, and visitors to PCMH would benefit from the direct route to the hospital from Greenville and other areas in eastern North Carolina. The grade-separated crossing over the railroad would eliminate railroad crossing delays, improve reliability, and decrease travel times for emergency responders and patients.

The proposed project would also decrease travel times for commuters through West Greenville. The direct connection would reduce the number of turns and stops, and the grade-separated crossing over the railroad would decrease delays, especially during the morning and afternoon rush hours.

G. Land Use

1. Existing Land Use and Zoning

The existing land use along Farmville Boulevard from Line Avenue / Bancroft Avenue to Fourteenth Street and through the Higgs Brothers neighborhood is primarily residential. Land uses west of Line Avenue / Bancroft Avenue and along Tenth Street are commercial with some institutional uses and vacancies. Current zoning is residential along Farmville Boulevard, commercial along the new location section of the Higgs Brothers neighborhood, and commercial / industrial along Tenth Street.

2. Future Land Use

The proposed land uses in the 2004 *Horizons* plan indicate that the parcels along Farmville Boulevard will be converted to commercial and office / institutional / multi-family, and the land uses along the new location portion of the corridor will become mixed use / office / institutional. The proposed land use changes are not a result of this project (since they were approved in 2004, before this project began); both the project and the land use changes are in compliance with the approved local plan. To follow the *Horizons* land use plan, zoning would need to be converted from residential to commercial along the West Greenville portion of the corridor. Existing industrial zones along Tenth Street, where ECU has recently purchased several warehouses, would be converted to mixed use / office / institutional.

3. Project Compatibility with Local Plans

The Stantonsburg Road / Tenth Street Connector is consistent with local land use and transportation plans. These references are described briefly below, and are explained in more detail in the *U-3315 Community Characteristics Report* (January 2007).

Horizons Comprehensive Plan (February 2004)

Objectives in the *Horizons* plan include creating gateway corridors into Greenville and coordinating transportation plans of the City, ECU, and ECU's Medical Campus. Implementation strategies identified in the plan include revitalizing West Greenville, linking Farmville Boulevard to Tenth Street, and adding

sidewalks and streetscaping throughout the city. The *Horizons* plan assumes the connector will be in place in the future. The new road would replace the existing four-lane undivided road with a four-lane median-divided corridor with sidewalks and bike lanes.

City of Greenville and Pitt County Home Consortium 2003-2007 Consolidated Plan (June 2003)

The *City of Greenville and Pitt County Home Consortium 2003-2007 Consolidated Plan* includes revitalization of the Lincoln Park neighborhood, which is within the DCIA. This plan established the 45-block Community Development Block Grant (CDBG) revitalization effort and initiated the bond funding that supports the *Center City-West Greenville Revitalization Plan*.

Center City-West Greenville Revitalization Plan (December 2005, March 2006)

The proposed Stantonsburg Road / Tenth Street Connector is addressed in several sections of this plan. Specifically, the connector is considered to become an important transportation link to Greenville's center city. Elements include a separated grade crossing at the railroad, maintenance of Dickinson Avenue as a through street to the downtown, a design that would minimize conflicts between pedestrians and vehicles, and additional landscaping and signage to enhance pedestrian safety. The connector would provide a gateway into Greenville with a planted median and sidewalks separated from vehicle traffic by a landscaped buffer. It would maintain Dickinson Avenue under the new grade-separated crossing over the railroad.

Greenville Urban Area Thoroughfare Plan (2005)

The primary purpose of the *Greenville Urban Area Thoroughfare Plan* is to ensure that individual transportation projects form a comprehensive, continuous, and coordinated system. Farmville Boulevard and Tenth Street both are shown as major thoroughfares within the DCIA. There is a proposed new location major thoroughfare shown connecting Farmville Boulevard and Tenth Street.

H. Indirect and Cumulative Effects

Indirect and cumulative effects are described in more detail in the *Screening Indirect and Cumulative Effects Report* (October 2009). This project is anticipated to have no short-term and minimal long-term indirect effects. No short-term or long-term cumulative effects are expected. Indirect and cumulative effects were considered for a 16-year time period, until 2025. This corresponds with the 2004 *Greenville Urban Area Thoroughfare Plan*. The following subsections summarize indirect and cumulative project effects.

Indirect Effects

The most commonly traveled route from West to East Greenville follows Farmville Boulevard, Fourteenth Street, Dickinson Avenue, and Tenth Street. All east-west routes require at least three (3) 90-degree turns, and there are no major arterials from East to West Greenville that have a grade-separated crossing at the railroad line. This project is anticipated to affect travel patterns in the area. Traffic analyses indicate that by 2030, the build scenario is anticipated to carry approximately 15% to 20% more traffic than the No Build scenario. These new trips are likely to be a combination of trips

diverted from other parallel routes and trips that are a result of an increased attraction to the area. Although approximately the same parcels will be exposed to traffic on the new connector as along the existing route, businesses along the route will gain exposure to a higher number of drivers. Traffic is expected to be diverted from Dickinson Avenue to the new connector, resulting in potentially fewer pass-by trips for businesses on Dickinson Avenue.

A few roads crossed by the connector will be closed at the overpass bridge, although this change in access is minor. This new link is anticipated to improve access to PCMH from the east and access to ECU and downtown Greenville from the west. The new road is expected to result in a travel time savings of approximately 50% (3 minutes) because of the elimination of the three (3) turns, two (2) traffic signals, and the at-grade railroad crossing. The new connector is anticipated to help facilitate a change in land use in West Greenville from residential and commercial to mixed use / office / institutional, which was identified as part of the City's approved comprehensive plan. Overall, this project is anticipated to have minor long-term indirect effects.

Cumulative Effects

There have been few recent projects and there are no projects on the horizon. This project is not anticipated to impact notable environmental resources. All developments would be required to follow local, state, and federal guidelines and permitting regulations. This project will not notably contribute to cumulative impacts to environmental resources in the Future Land Use Study Area (FLUSA).

I. Flood Hazard Evaluation

The Pitt County / City of Greenville Flood Insurance Study (FIS), effective January 2, 2004, established base flood elevations (BFEs) for the Tar River and Green Mill Run. Flood Insurance Rate Map (FIRM) Number 3720468800J, Panels 4677, 4678, 4687, and 4688 show the special flood hazard areas (SFHAs) and floodways associated with Tar River and Green Mill Run. Based on review of the FIRM Panels, it has been determined that the proposed connector road alignments would not encroach upon established SFHAs or floodways. The distance from the outer limits of the proposed project to the SFHAs associated with Tar River and Green Mill Run exceed 1/3 mile at closest proximity. To date, no Letter of Map Revision (LOMR) has been issued to revise BFEs, SFHAs, or floodways associated with Tar River or Green Mill Run in the project vicinity.

J. Traffic Noise Analysis

1. Noise Analysis

Noise characteristics for the project study area were summarized in the *Noise Analysis Report* (June 2007), available for public review in the NCDOT Transportation Building, Room 462, 1 South Wilmington Street, Raleigh. The Noise Control Act of 1972 authorized the USEPA to regulate major sources of noise, such as transportation vehicles and construction equipment. The Federal Aid Highway Act of 1970 mandated that the FHWA develop standards for mitigating highway noise. The Act's implementing regulations require that all traffic noise impacts be identified, all potential mitigation measures be examined, and all reasonable and feasible noise mitigation measures be incorporated into the planning

and design of highway projects. The regulations include criteria at which noise abatement must be considered.

Noise is typically defined as unwanted sound. It is emitted from many sources, including airplanes, factories, railroads, power generating plants, and highway vehicles. Traffic noise is composed of noise from the engine, the exhaust, the drive train, and tire-roadway interaction. The actual magnitude of sound is caused by short-duration fluctuations in atmospheric pressure. These fluctuations are called sound pressures. Since the range of sound pressure varies greatly, a logarithmic relationship is defined as the sound pressure level and is measured in decibels (dB). The decibel is often modified by frequency-weighting curves (A, B, C, D, and E). These curves were designed to approximate the loudness level sensitivity of the human ear while listening to pure tones.

Vehicle noise levels are commonly modified by the A-weighting curve. This curve correlates well with human response to noise, particularly in describing annoyances caused by traffic and aircraft noise. Sound levels utilizing the A-weighted curve are expressed in dBA.

Sound pressure levels in this document are expressed as dBA $L_{eq(h)}$. The hourly $L_{eq(h)}$, or equivalent sound level, is the level of constant sound that in an hour would contain the same acoustic energy as the time-varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of steady noise levels with the same energy content.

The FHWA has identified five (5) categories of activity for use in noise-level analyses. Maximum noise-level thresholds have been established for four of these activities. These maximum thresholds, or criteria levels, represent the upper limit of acceptable traffic noise-level conditions. The Noise Abatement Criteria (NAC) levels developed by the FHWA are presented in **Table 18** and apply only to noise-sensitive sites and areas of regular human use where lowered noise levels are desirable.

The NCDOT Noise Abatement Policy classifies noise impacts in two categories: substantial increases from existing noise conditions and noise levels approaching or exceeding the NAC for their respective land uses as described by the NCDOT *Traffic Noise Abatement Policy* (2004).

Table 18 – FHWA Noise Abatement Criteria – Hourly A-Weighted Sound Level-Decibels (dBA)

Category	Abatement Level (L^{Aeq})	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 (Exterior)	Developed lands, properties, or activities not included in Category A or B above
D	--	Undeveloped lands
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise Control and Construction Noise*

NCDOT defines “approach” to be within 1 dBA of the $L_{eq(h)}$ value for the respective land use activity category. The predicted design year noise levels substantially exceed existing noise levels as defined below:

<u>Existing Leq(h)</u>	<u>Increase</u>
50 or less dBA	15 or more dBA
51 dBA	14 or more dBA
52 dBA	13 or more dBA
53 dBA	12 or more dBA
54 dBA	11 or more dBA
55 or more dBA	10 or more dBA

If the analyzed facility is found to exceed either of the criteria stated above, noise abatement must be considered based on the feasibility and reasonability of the sound barriers. These factors weigh the benefits, cost, and overall social, economic, and environmental effects of the sound barriers. Feasibility deals with the design and construction of the barrier, effectively determining if the barrier can be built. Reasonability measures the cost effectiveness and the efficiency of the barrier. The reasonable cost effective amount for an impacted area is \$35,000 per benefited receptor plus an incremental increase of \$500 per dBA average increase in the predicted exterior noise levels of the impacted receptors of the area.

To assess impacts due to traffic noise, an existing conditions scenario was modeled for 74 identified receiver locations (representing 252 dwelling units, two (2) church receptors, two (2) school receptors, and three (3) historic property receptors). TNM 2.5 was used to predict the existing noise levels for all of the receivers. The TNM input parameters for the 2030 Alternative J-Modified and No Build conditions were the same as the 2005 Existing model, with the exception of future geometry and future traffic volumes.

- For the existing condition scenario, 13 receivers (representing 34 dwelling units and one (1) church) are predicted to exceed the NAC.
- Twenty-two (22) sensitive receivers (representing 68 dwelling units and one (1) church) are expected to exceed the NAC for the 2030 No Build condition. No substantial impacts are predicted for the 2030 No Build condition.
- The 2030 Alternative J-Modified condition predicted that 33 sensitive receivers (representing 104 dwelling units, one (1) church, and one (1) historic site) will exceed the NAC. Three (3) substantial impacts are predicted for this alternative, at locations that also exceed the NAC.

A similar increase in impacted receivers occurs between the Existing scenario and the 2030 No Build scenario as is seen in Alternative J-Modified. Some noise impacts within the analysis area can be attributed to growth in traffic along Stantonsburg Road, Memorial Drive, Farmville Boulevard, Fourteenth Street, Tenth Street, and Evans Street. Many of the impacted receivers are located several hundred feet from the study corridor, but are directly adjacent to heavily traveled cross streets, such as Memorial Drive and Evan Street. These impacts are not a direct result of the improvements associated with the Stantonsburg Road / Tenth Street Connector.

The sensitive receivers that exceed the NAC and are located on the corridor are primarily residential, with a few churches and historic areas. These potentially impacted receivers are located in clusters along the corridor which have multiple driveways to access the adjacent corridors. In order to utilize abatement walls, driveway access would have to be minimized or terminated altogether, which is not reasonable. In addition, noise abatement walls along the corridor would limit sight distance to vehicles entering from side streets and adjacent neighborhoods. Therefore, construction of noise barrier walls are not recommended in this location. Furthermore, it is not feasible to construct a dense vegetation buffer of adequate size due to limited available right of way.

2. Construction Noise

Although the equipment noise levels are expected to be the main contributor to the construction activity noise emissions, noise impacts during the project construction typically maintain a short duration. Peak noise levels from highway construction equipment, as measured at a distance of 50 feet, may vary from 70 dBA to 100dBA. General construction noise impacts that can be expected are temporary speech interference for passersby and those individuals working near the project. Such noise should be limited to daylight hours as much as possible.

K. Air Quality Analysis

1. Air Quality Analysis

Pursuant to the Clean Air Act, the USEPA established National Ambient Air Quality Standards (NAAQS) for six (6) atmospheric pollutants: carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, particulates, and lead. Currently, Pitt County is **in attainment** for all air pollutants regulated under the NAAQS. Neither a detailed microscale “hotspot” analysis nor a detailed PM_{2.5} microscale analysis is required. NCDOT confirmed that an air quality analysis for this project is not needed to satisfy the NEPA process (memorandum dated August 7, 2006).

In response to local concerns, the *U-3315 Air Quality Analysis* was prepared in January 2009 (available for public review at the City of Greenville Public Works Department) to assess the potential impacts of the proposed project at the intersection of Farmville Boulevard and Fourteenth Street near a local elementary school. A microscale air quality analysis for this intersection was completed. Although the Build alternative introduces a fourth approach to the Farmville Boulevard / Fourteenth Street intersection, the overall air quality emissions were marginally higher for the No Build alternative compared to the Build alternative. This can be attributed to a high level of “stop and go” traffic and turning movements associated with the existing geometry.

2. Mobile Source Air Toxic (MSAT) Analysis

In recent years, documents following the National Environmental Policy Act (NEPA) process have begun to include an analysis on Mobile Source Air Toxics (MSAT). MSAT analysis is a continuing area of research; while much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health impacts from MSATs are limited. These limitations impede FHWA's ability to evaluate how mobile source health risks should factor into project-level decision-making under the NEPA. Also, the USEPA has not

established regulatory concentration targets for the six relevant MSAT pollutants appropriate for use in the project development process. FHWA has several research projects underway to more clearly define potential risks from MSAT emissions associated with transportation projects. While this research is ongoing, FHWA requires certain NEPA documents to qualitatively address MSATs and their relationship to the specific highway project through a tiered approach.

The 2030 VMT estimated for the Alternative J-Modified is slightly greater than that for the No Build Alternative because the direct route would attract rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the Preferred Alternative along the corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The realignment and new construction of travel lanes contemplated as part of the project will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under Alternative J-Modified than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the proposed roadway connection north of the intersection of Fourteenth Avenue and Dickinson Avenue.

However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. A qualitative analysis of MSATs for this project appears in its entirety in **Appendix G**.

3. Construction Air Quality Effects

Temporary degradation of the air quality in the project area will likely result from construction of the Preferred Alternative. The contractor will be responsible for controlling dust at the project site and at areas affected by construction. Construction activity may generate a temporary increase in MSAT emissions. Construction mitigation options are available to reduce engine activity or reduce emissions.

L. Hazardous Material

According to a geotechnical report by NCDOT (October 9, 2009), 21 possible petroleum underground storage tank (UST) facilities, four (4) dry cleaners, two (2) body shops, and one (1) garage were identified within the proposed project corridor. It is anticipated that low monetary and scheduling impacts will result from these sites, which are shown on **Figure 19**. No hazardous waste sites or apparent landfills were identified within the project limits.

VI. Comments and Coordination

A wide-ranging public involvement program is part of this project and includes the following efforts:

- Holding Community Informational Workshops in January 2006, January 2007, and April 2009
- Holding informal walk-in sessions during the second day of the January 2006 workshop and for four days prior to the workshop in January 2007
- Meeting with public officials in January 2006, January 2007, and April 2009
- Meeting with the Citizen Advisory Committee in November 2005, February 2006, January 2007, January 2009, April 2009, and October 2009
- Holding small group meetings with the Black Ministries Council of Greenville in March 2006; residents, business owners, and property owners in March 2009; and business owners in April 2009, June 2009, and July 2009
- Interviewing community leaders during the January 2006 charrette and in March 2006
- Advertising meetings in newspapers, on the radio, on Greenville's local TV station, with placards, door hangers, newsletters, and postcards
- Expanding the mailing list of community contacts to include meeting attendees and concerned citizens
- Providing consistent responsiveness to citizens' requests for information

A full summary of public involvement activities in the appendix of the *U-3315 Community Impact Assessment* (October 2009).

Limited English Proficiency

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The US Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations was gathered in the 2000 Census.

The Census data indicate there are no language groups within the demographic study area in which more than 5% of the population of 1,000 persons speak English less than "Very Well." Therefore, demographic assessment does not indicate the presence of LEP language groups that exceed Department of Justice's Safe Harbor threshold. However, NCDOT will include notice of Right of Language Access for future meetings for this project. Thus, the requirements of Executive Order 13166 appear to be satisfied.

A. Community Informational Workshops

Three (3) Community Informational Workshops (CIWs) were held to explain the project to the public and to obtain public input. The workshops were advertised on local media and also were publicized in newsletters mailed to interested citizens.

A two-day charrette was held on January 30 and 31, 2006 at Sheppard Memorial Library. Fifty-two (52) citizens attended the first day of the charrette, and 42 citizens attended the second day. The first day's workshop began at 6:00 p.m., and a formal presentation was made at 6:30 p.m. Attendees were asked to identify values they feel are important and reflective of Greenville and to write their 20-year vision for Greenville. Participants were then asked to gather around tables and had an opportunity to sketch their ideas for connector road alignments. At the end of this activity one representative from each group gave a brief presentation to the entire audience, and later all ideas were transcribed onto preliminary alternates. During the second day of the charrette, the design team was available for informal discussions during the day, and the formal presentation began at 6:30 p.m. Citizens were presented with six (6) preliminary renderings based on ideas gathered the previous night, and had an opportunity to review and make comments on each.

A second community informational workshop was held in January 2007 at Sheppard Memorial Library from 6:30 p.m. to 9:00 p.m. Citizens were invited to review and comment on designs of the alignments they had proposed in 2006 as well as three (3) alignments proposed by the design team and the yellow study corridor (described in **Section III.A.4.**). Forty-three (43) citizens attended the 2007 workshop. A PowerPoint presentation with a voiceover was shown in a 15-minute continuous loop in one part of the room. The slide show provided citizens with a brief overview of the project's purpose and need, existing resources within the study area, alignment options, and public involvement opportunities. Maps of the nine (9) alignment options were posted throughout the room. Citizens were invited to speak with members of the project team and also were asked to fill out a comment sheet. Approximately 20 comment forms were received, as well as approximately 30 phone calls, emails, or letters. An additional 15 comments were made during the walk-in sessions prior to the January 2007 workshop.

A third community informational workshop was held in April 2009 from 5:00 p.m. to 8:00 p.m. at Sheppard Memorial Library. This workshop was attended by 35 citizens. Maps of the three (3) detailed study alternatives were posted for citizen review, and members of the project team were available to answer questions. Citizens were invited to fill out a comment sheet with additional questions or comments. No additional comment forms were received during the comment period.

B. Walk-In Sessions

Informal walk-in sessions were held during the second day of the January 2006 charrette, and for four days prior to the workshop in January 2007. These walk-in sessions took place at three (3) different locations, beginning at 9:00 a.m. and ending as late as 8:00 p.m. Six (6) citizens spent time talking with study team members during the second day of the January 2006 charrette, and ninety-nine (99) citizens

signed in at the walk-in session prior to the 2007 workshop. Members of the project team were available to answer questions.

C. Citizens Advisory Committee Meetings

The CAC comprises 18 citizens and key stakeholders. The majority of the project study area is in West Greenville; approximately 80% of the CAC members either live or own property in West Greenville. The CAC members reflect the demographics of the DCIA, and represent residents and business owners in the community. The role of the CAC is to provide input on the project, which has been used by City staff, NCDOT, the project team, the City Council, and others. Meetings with the CAC were held on November 11, 2005, February 13, 2006, January 4, 2007, January 29, 2009, April 21, 2009, October 13, 2009, and June 16, 2010. During each meeting, the project team provided the CAC with an update of the project and a summary of recent and upcoming public involvement activities.

D. Community Concerns

As a result of the public outreach activities, concerns voiced by citizens in the community came in the form of questions and discussions during the workshops and walk-in sessions, comments received via mail or email following the workshops, and phone calls to the City or project team during the course of the project. Below is a summary of concerns; a full list of comments appears in Appendix B of the *U-3315 Community Impact Assessment* (October 2009).

- **Proximity concerns.** Residents and business owners asked for information on specific impacts to their properties.
- **Preference of an alternative.** Several citizens voiced an opinion on which alternative should be selected. None of the alternatives were preferred by a majority of citizens. Concerns about particular alternatives or the project as a whole included residential and business relocations, noise, and loss of access.
- **Residential relocations.** Initially, residents on Farmville Boulevard favored alternatives that did not impact their street. However, when presented with the three (3) detailed study alternatives during the April 2009 small group meeting, those who gave an opinion preferred Alternative J-Modified, which takes the most number of houses on Farmville Boulevard. Several residents stated that they would prefer that the entire street be relocated instead of having a few houses remain along the new connector. Residents on Farmville Boulevard also were concerned that the fair market value of their property would not be enough to relocate to a comparable home. Many residents have paid for their homes, and are worried they would not be able to find something equitable without incurring a new mortgage. In addition, residents are concerned that their front yards will be purchased but their homes will remain and be devalued.
- **City of Greenville's Tenth Street Connector Supplemental Relocation Program.** As a result of the concerns (noted above) from Greenville residents about potential relocations, the City Council approved the Tenth Street Connector Supplemental Relocation Program on February 5, 2007. The Program was mentioned to the CAC and local citizens at public involvement activities in

January 2007, as it was pending approval.

- **Business impacts.** Business owners within the project right of way were concerned they would be relocated based on the preliminary designs. During an April 2009 small group meeting, the project team presented the designs and explained the impacts. Many business owners felt that NCDOT's relocation program for businesses would not provide adequate reimbursement, and several expressed concern that they would not be able to find a vacant property for a price similar to their current location. Following a redesign at Fourteenth Street and Evans Street, the number of business relocations was reduced, and many of the previous concerns were alleviated. Some businesses remain impacted by the preliminary design, and others may be impacted indirectly because of a change in traffic patterns.
- **Health and environmental concerns.** A citizen expressed concern about potential air quality impacts of the project on students at Sadie Saulter Elementary School. A large number of citizens supported adding sidewalks and bike lanes to the connector. Potential air quality impacts will no longer be a concern since Sadie Saulter Elementary School will not operate as a school after 2010.
- **Project process.** There has been some concern throughout the project that decisions would be made without sufficient public input, or would not take the community's input into consideration.
- **Safety.** There is a concern about current safety, especially for pedestrians and bicyclists. There are very little sidewalks and no bike lanes along Farmville Boulevard, which is a four-lane road with vehicles traveling at high speeds (often over the 35 mph speed limit) and few crosswalks. Many citizens stated they are uncomfortable crossing or traveling along Farmville Boulevard on foot or bicycle. Residents on Farmville Boulevard also said that it was difficult to get in and out of their driveways. Traffic volumes have increased over the years, and are projected to continue to increase (regardless of the construction of this project).
- **Railroad crossing.** The delay at the existing intersection of Tenth Street / Dickinson Street at the CSX Railroad is a concern of citizens and emergency responders. They agreed with the need for a grade-separated crossing, but were uncertain of the potential business impacts caused by a bridge and the safety implications of a tunnel.

E. Small Group Meetings

A small group meeting was held on March 11, 2006 with the Black Ministers Conference of Pitt County. Twelve people attended this meeting. The project team provided background information on the project, and described the public involvement process.

A small group meeting was held March 24, 2009 at Mt. Calvary Free Will Baptist Church with citizens within the alternative corridor. A total of 65 citizens, business owners, and property owners attended. The project team gave a short presentation on the project, and answered citizens' questions. The attendees formed four smaller groups based on their location for further discussion.

A meeting with businesses in the alternative corridor was held on April 29, 2009 at Sheppard Memorial Library, and was attended by 25 business representatives. The project team described potential impacts to businesses and addressed questions and concerns. Business owners at this meeting were concerned about potential relocations, and asked for a redesign along Fourteenth Street and Evans Street.

During a second small group meeting with businesses on June 17, 2009 at Sheppard Memorial Library, revised designs were presented and attendees expressed satisfaction at the reduction in impacts.

F. Community Leader Interviews

The design team conducted one-on-one interviews with community leaders during the project. During the January 2006 charrette, ten (10) interviews were held. An additional eight (8) interviews were held in March 2006. Community leaders included council members and representatives from police and rescue departments, PCMH, the ECU Student Government Association, the Black Ministers Conference, and the West Greenville-Pitt Community Development Corporation.

G. Public Officials' Meetings

City and project team representatives held three (3) public officials' meetings with local elected leaders. The first meeting was held on January 30, 2006, prior to the first Community Informational Workshop, and eighteen (18) public officials attended. The purpose of the meeting was to familiarize public officials with the project and provide a schedule of events for the two-day workshop. The public involvement plan and the project's next steps were also outlined.

The second public officials briefing session was held on January 4, 2007 at 10:00 a.m. at Sheppard Memorial Library. Eight (8) public officials attended this meeting. Topics included an overview of public involvement activities in 2006, a description of the pros and cons of the nine (9) options under consideration, and a summary of the preliminary purpose and need.

The third public officials briefing was held April 30, 2009 at 1:00 p.m. at Sheppard Memorial Library. Two (2) public officials attended this meeting. The project team presented preliminary designs for the three (3) detailed study alternatives and answered questions.

H. Steering Committee Meetings

The project Steering Committee was comprised of representatives from the City of Greenville staff, NCDOT, ECU, and PCMH. Meetings with the Steering Committee were held throughout the project to discuss public input and move through the alternatives development process. The Steering Committee met on September 5, 2005, November 18, 2005, February 14, 2006, August 28, 2006, October 17, 2006, January 5, 2007, March 22, 2007, November 29, 2007, October 21, 2008, and November 17, 2009. A public forum with the Steering Committee was requested by business owners during the April 29, 2009 small group meeting and held on July 22, 2009.

I. Public Hearing

A public hearing will be held following the distribution of this Environmental Assessment.

J. Other Community Coordination

Corridor Database

A mailing list was developed for the study area in February 2006, which included all property owners, renters, churches and businesses located within the study area. There were approximately 1,100 citizens' names on the initial mailing list. This mailing list was updated and expanded throughout the project to include workshop attendees and concerned citizens. Addresses that were determined to be undeliverable by the post office were removed.

A new mailing list was created in March 2009 to advertise the small group meetings in March, April, and June. This mailing list was focused on the alternative corridor, and included approximately 350 citizens.

Telephone, Email, and Website

A toll-free hotline (1-866-TENTH ST) was established to provide information to citizens and to enable them to leave contact information. In addition, phone numbers and e-mail addresses for project team members were available for citizens to contact project planners and engineers directly.

A project website (www.greenvillenc.go/departments/public_works_dept/) also was developed so that citizens could view updated information concerning the project.

Media Relations

Outreach to local media was affected through the City's office of public relations. Community informational workshops and small group meetings were advertised in newspapers, on the radio, and on Greenville's local TV station (GTV9). Local newspapers that have carried announcements about public workshops include *The Daily Reflector* and *The M Voice*.

Newsletters, Postcards, and Placards

The first newsletter was mailed in January 2006 to approximately 1,100 citizens. This newsletter included general information on the purpose of the project, the study area, the need for the project, the study process and schedule, and project contact information. The newsletter also announced the 2006 Community Informational Workshop. Copies of the newsletter were distributed each day of the January 2006 community workshop. Placards also were placed in local stores and churches announcing the first workshop.

The second newsletter was mailed in January 2007 to approximately 1,300 citizens. This newsletter provided information on the upcoming workshop and walk-in sessions. It also showed maps of the nine (9) options being considered and summarized the project purpose and need. Copies of the newsletter were available at the January 2007 community workshop.

The small group meetings in March, April, and June 2009 were advertised through direct-mailed postcards to approximately 350 citizens and with door hangers on approximately 300 buildings within the alternative corridor.

The third newsletter was mailed in April 2009 to approximately 1,300 citizens. This newsletter announced the upcoming workshop and provided a summary of past and future milestones. It presented the three (3) alternatives recommended for further study, and showed the proposed typical section. Copies of the newsletter also were available at the April 2009 community workshop.

The fourth newsletter was mailed in December 2009 to approximately 1,200 citizens. This newsletter described the Preferred Alternative that will be carried forward into the Environmental Assessment. It also summarized past and future milestones.

K. NEPA / 404 Merger Process

In a May 1992 agreement, the United States Department of Transportation (USDOT), the Office of the Assistant of the Army (Civil Works), and the USEPA developed a policy to improve interagency coordination and integrate policies of NEPA and Section 404 of the Clean Water Act (CWA). In 1997, the Wilmington District of the USACE, the North Carolina Division of the FHWA, and NCDOT signed an Interagency Agreement that provided procedures to integrate NEPA and Section 404 for transportation projects in North Carolina. This integrated approach (called the “Merger” process) was part of an effort to streamline the project development and permitting processes with the objective of incorporating the regulatory requirements of Section 404 into the NEPA decision-making process. The NEPA / 404 Merger Process was designed to apply to new location projects and other projects that would likely require an individual permit under Section 404 of the CWA.

There are no streams, wetlands, High Quality Waters, Outstanding Water Resources, rare or unique habitats as listed by the NCNHP, federally protected species, or potential habitats for federally protected species within the project study area. NCDOT, FHWA, and NCDWQ agreed on March 24, 2006 that this project would not need to follow the NEPA / 404 Merger Process and that formal agency coordination would be limited to the project scoping and permitting phases.

L. Other Agency Coordination

A start of study letter was mailed to agencies on December 28, 2005. Apart from departments within the City and NCDOT, comments were received from the following agencies:

- US Fish and Wildlife Service
- US Army Corps of Engineers
- NC Department of Environment and Natural Resources – Division of Coastal Management
- NC Department of Environment and Natural Resources – Regional Aquifer Protection

- NC Department of Environment and Natural Resources – Division of Water Quality
- NC Department of Environment and Natural Resources – Division of Environmental Health
- NC Department of Cultural Resources – State Historic Preservation Office
- Pitt County Schools

VII. Conclusions and Recommendations

This Environmental Assessment (EA) documents the purpose and need for NCDOT Project U-3315, the alternatives evaluated, and the potential impacts associated with the Preferred Alternative. This project proposes to connect Stantonsburg Road to Tenth Street by widening Farmville Boulevard beginning at Memorial Drive, connecting Farmville Boulevard on new location to Tenth Street, crossing Dickinson Avenue and the CSX Rail Line with a grade separation, and widening Tenth Street to Evans Street. The Preferred Alternative is consistent with the purpose and need since it:

- Provides a grade-separated connection at the CSX Rail Line from the eastern part of Greenville to PCMH / Health Science campus to improve emergency access.
- Increases direct connectivity between PCMH / Health Science campus, downtown Greenville, ECU's main campus, and areas to the east and west of these locations and creates a direct connection between Stantonsburg Road and Tenth Street to improve vehicular, pedestrian, and bicycle access, and to maintain acceptable traffic level of service in the future.
- Provides a "gateway" into the City of Greenville that welcomes drivers into the City and is an attractive corridor that conforms with currently approved transportation and comprehensive plans.

A. Human Environment Impact

The project will increase direct connectivity between PCMH / Health Science campus, downtown Greenville, ECU's main campus, and areas to the east and west of these locations; create a direct connection between Stantonsburg Road and Tenth Street to improve vehicular, pedestrian, and bicycle access; and will maintain acceptable traffic level of service in the future. The proposed project will provide a grade-separated connection over the CSX Rail Line from the eastern part of Greenville to PCMH / Health Science campus, which will eliminate railroad crossing delays, improve reliability, and decrease travel time for emergency responders and patients. The proposed project will provide a "gateway" into the City of Greenville. Selection of the Preferred Alternative also considered a petition signed by 36 residents along Farmville Boulevard in favor of a symmetrical widening (Alternative J-Modified).

Based on preliminary designs, Alternative J-Modified would require approximately 30 residential (5 of which are multi-family residences) and 24 commercial relocations. Alternative J-Modified would also require the relocation of seven (7) institutional organizations including one (1) medium-sized church, three (3) non-profit organizations, and three (3) other institutions that offer counseling, food services, and/or worship services. No schools or other community facilities would be impacted.

The State Historic Preservation Office determined that Alternative J-Modified will have No Effect on the Great Swamp Primitive Baptist Church, Jacob Higgs House, and Perkins Town – Cherry View Historic District. The following other determinations were issued for Alternative J-Modified:

- No Adverse Effect on the Tobacco Warehouse Historic District and Boundary Increase if the right of way is restricted to 120 feet wide and the design returns to existing grade before the Historic District boundary.
- No Adverse Effect on the Dickinson Avenue Historic District if landscaping treatment, a brick-façade retaining wall, bridge guardrail, and a pedestrian path are installed. NCDOT Historic Architecture Group and HPO requested consultation with the project team during final design.
- No Effect on the Pure Oil Station (located on the northwest corner of Tenth and Evans Streets), given that the roadway taper ends before the property boundary and ties into the existing curb. Final roadway design must require no permanent easement or property taken from this parcel.

B. Natural Environment Impact

The Preferred Alternative will not appreciably impact natural resources. The project study area is characterized as an urban landscape with variable maintained-disturbed vegetated areas. No distinct biotic communities were identified within the project study area. Native vegetation has been removed. The terrestrial species expected to be found within the project study area are those found in urban environments and are not likely to be negatively impacted as a result of project construction. No aquatic habitats or communities that occur in or around streams, wetlands, and waterbodies are located within the project study area. No habitats exist for federally-protected species. There is no farmland in the project study area. No jurisdictional streams or wetlands were identified in the project study area. Because there are no proposed impacts to “Waters of the United States” (including streams and wetlands), it is anticipated that Section 401 and 404 permits will not be necessary.

C. Indirect and Cumulative Effects

The Preferred Alternative is anticipated to have no short-term and minimal long-term indirect effects. No short-term or long-term cumulative effects are expected. Indirect and cumulative effects were considered for a 16-year time period, until 2025. This corresponds with the 2004 *Greenville Urban Area Thoroughfare Plan*. The following subsections summarize indirect and cumulative project effects.

Indirect Effects

The most commonly traveled route from West to East Greenville follows Farmville Boulevard, Fourteenth Street, Dickinson Avenue, and Tenth Street. All east-west routes require at least three (3) 90-degree turns, and there are no major arterials from East to West Greenville that have a grade-separated crossing at the railroad line. This project is anticipated to affect travel patterns in the area. Traffic analyses indicate that by 2030, the build scenario is anticipated to carry approximately 15% to 20% more traffic than the No Build scenario. These new trips are likely to be a combination of trips diverted from other parallel routes and trips that are a result of an increased attraction to the area. Although approximately the same parcels will be exposed to traffic on the proposed improvement as along the existing route, businesses along the route will gain exposure to a higher number of drivers. Traffic is expected to be diverted from Dickinson Avenue to the new connector, resulting in potentially fewer pass-by trips for businesses on Dickinson Avenue.

A direct connection is anticipated to improve access to PCMH from the east and access to ECU and downtown Greenville from the west. The new road is expected to result in a travel time savings of approximately 50% (3 minutes) because of the elimination of the three (3) turns, two (2) traffic signals, and the at-grade railroad crossing. The new connector is anticipated to help facilitate a change in land use in West Greenville from residential and commercial to mixed use / office / institutional, which was identified as part of the City's approved comprehensive plan. Overall, this project is anticipated to have minor long-term indirect effects. Several roads crossed by the connector will be closed and end in cul-de-sacs at the overpass bridge, although this change in access is minor.

Cumulative Effects

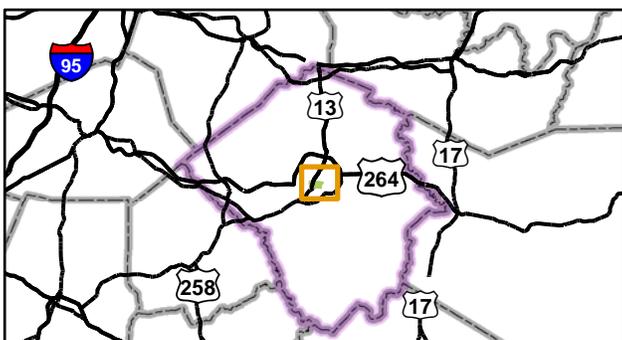
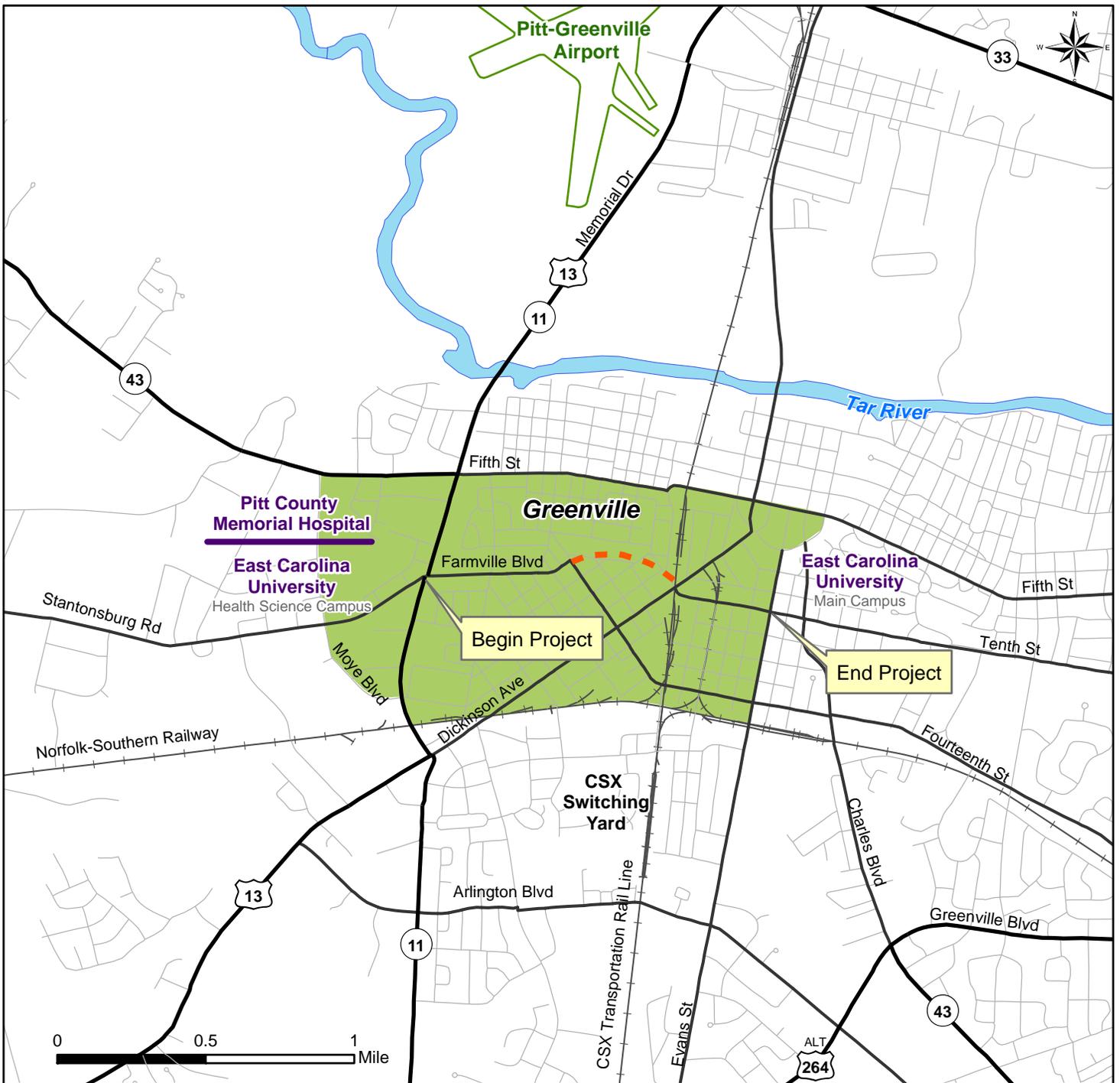
There have been few recent highway projects in this locality, and no other projects are currently programmed. This project is not anticipated to impact notable environmental resources. Any future developments would be required to follow local, state, and federal guidelines and permitting regulations. This project will not notably contribute to cumulative impacts to environmental resources in the Future Land Use Study Area (FLUSA).

D. Recommendations

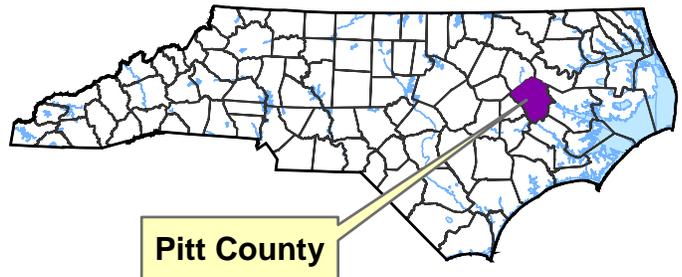
Based on the project technical studies and coordination with the public and regulatory agencies, there is no indication that implementing the proposed project would have a significant impact on the environment. The Preferred Alternative includes symmetrical widening and a reduced cross-section through the Tobacco Warehouse Historic District to avoid and minimize impacts. Measures to avoid and minimize impacts to the human and natural environment have been incorporated throughout the planning stages and the development of the preliminary design.

The Federal Highway Administration (FHWA) and the North Carolina Department of Transportation (NCDOT) are making this document available for a period of 30 days to provide resource agencies and the public an opportunity to review the document. A public hearing will be scheduled also to allow for additional public comment. Comments received will be reviewed and taken into account prior to the determination to prepare and approve a Finding of No Significant Impact (FONSI) or to prepare a Draft Environmental Impact Statement (EIS).

FIGURES



--- Project as shown in the Thoroughfare Plan (2005)



**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**
Greenville, Pitt County, NC

Legend

- Highways
- Major Roads
- Secondary Roads
- Study Area
- Railroad

Kimley-Horn and Associates, Inc.

Figure 1
Project Vicinity Map





Farmville Boulevard



Tenth Street



Fourteenth Street



Intersection of Dickinson Avenue, Grand Avenue, and Tenth Street, facing southwest. The CXS Rail Line crosses north/south through this intersection.



Line Avenue



Aerial of the project corridor from Dickinson Avenue/Tenth Street to Farmville Boulevard/Line Avenue, facing northwest.



Intersection of Farmville Boulevard and Fourteenth Street, facing east.

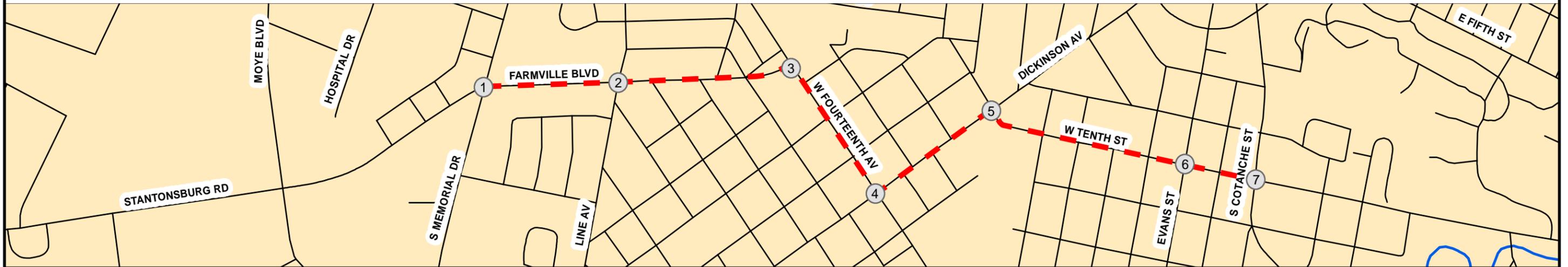
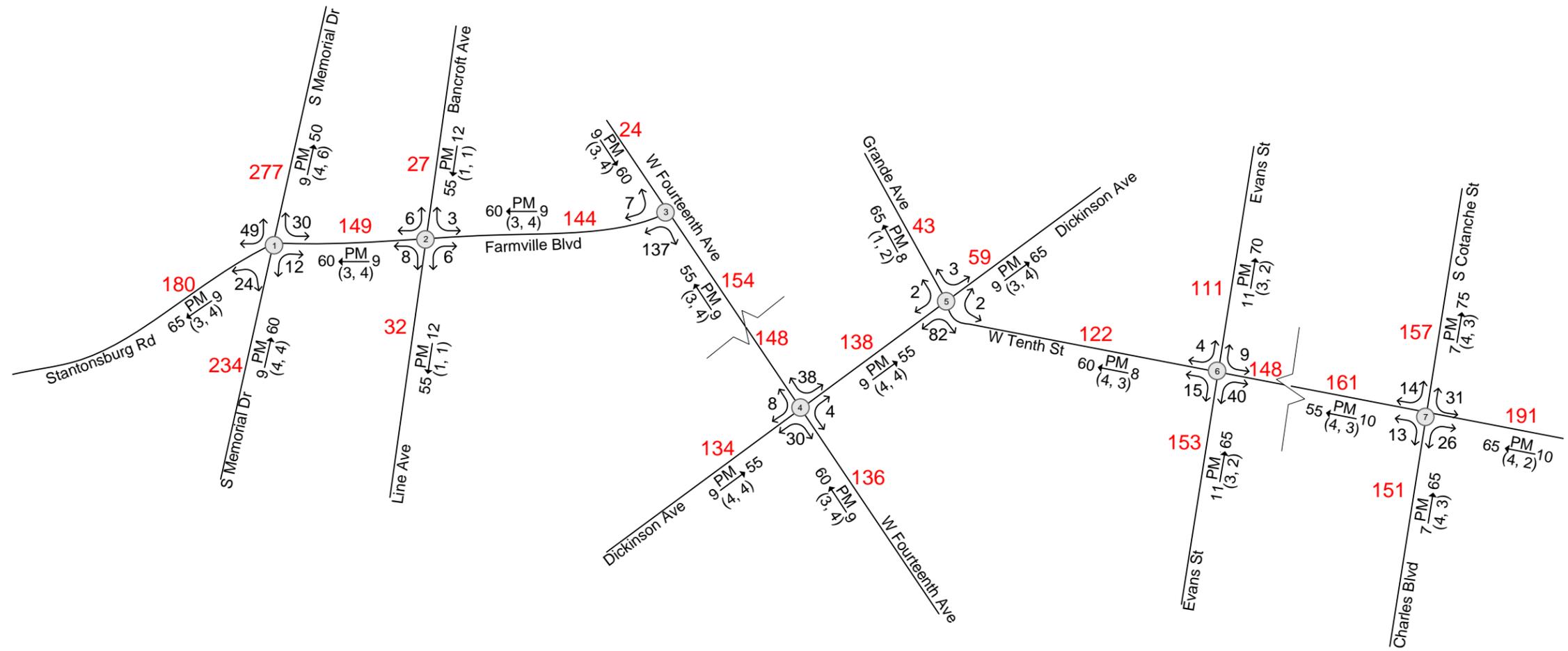


Dickinson Avenue



Beatrice Maye Garden Park on Farmville Boulevard

Stantonsburg Road/Tenth Street Connector
(Project U-3315)
Greenville, Pitt County, NC



Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC

Not to Scale



Source: 2005 Traffic Counts

- ### No. of Vehicles Per Day (VPD) in 100's
- ### Turning Volume (VPD) in 100's
- DHV Design Hourly Volume (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- (d, t) Duals, TT-STs (%)
- Indicates Direction of D

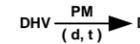
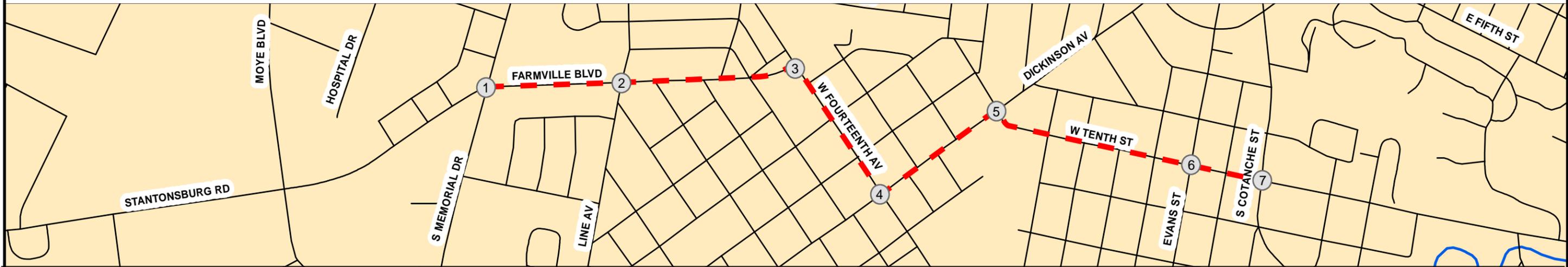
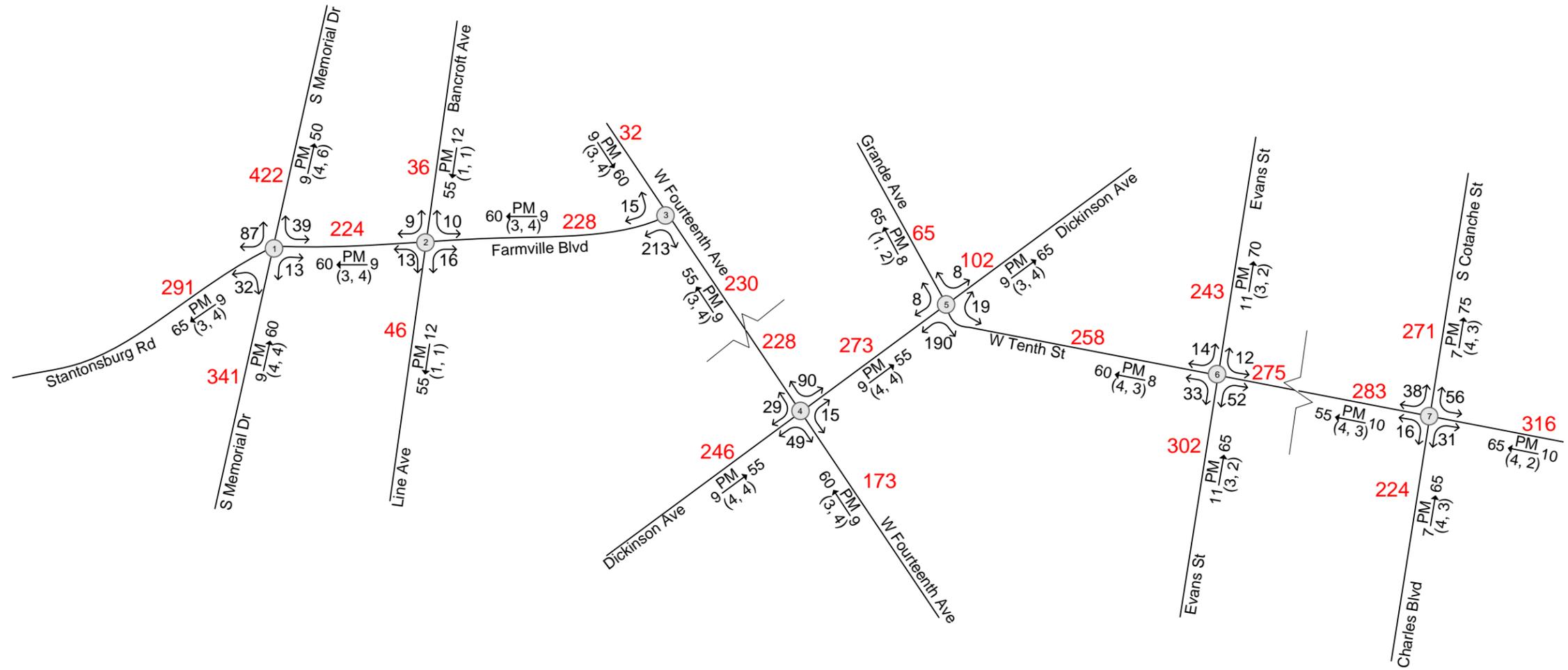


Figure 4
2005 Average Daily Traffic Volumes





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC

Not to Scale



- ### No. of Vehicles Per Day (VPD) in 100's
- ### Turning Volume (VPD) in 100's
- DHV Design Hourly Volume (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- (d, t) Duals, TT-STs (%)
- Indicates Direction of D

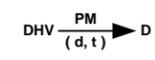


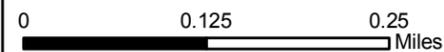
Figure 5
2030 Average Daily Traffic Volumes
No Build Alternative (Projected)





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Legend

- Major Thoroughfare
- Major Thoroughfare Proposed
- Study Area
- Railroad
- Minor Thoroughfare
- Stream

Source: Greenville Urban Area Thoroughfare Plan, Approved February 2005

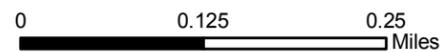
Figure 6
Greenville Urban Area
Thoroughfare Plan (2005)





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Option B
- Option A
- Option E
- Sadie Sautler Elementary School
- Beatrice Maye Park
- Historic District / Property
- Study Area
- Railroad

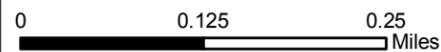
Figure 7
Options A, B, and E





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Option C
- Option D
- Option F
- Sadie Sautler Elementary School
- Beatrice Maye Park
- Historic District / Property
- Study Area
- Railroad

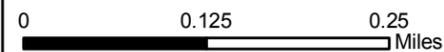
Figure 8
Options C, D, and F





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Sadie Sautter Elementary School
- Beatrice Maye Park
- Historic District / Property
- Option G
- Railroad

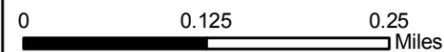
**Figure 9
Option G**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Sadie Sautter Elementary School
- Study Area
- Option H
- Beatrice Maye Park
- Railroad
- Historic District / Property

**Figure 10
Option H**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Sadie Sautler Elementary School
- Study Area
- Option J
- Beatrice Maye Park
- Railroad
- Historic District / Property

**Figure 11
Option J**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Alternative G-Modified
- Sadie Sautler Elementary School
- Beatrice Maye Park
- Historic District / Property
- Study Area
- Railroad

**Figure 12
Alternative G-Modified**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Sadie Sautter Elementary School
- Study Area
- Alternative H
- Beatrice Maye Park
- Railroad
- Historic District / Property

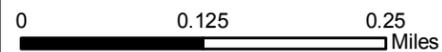
**Figure 13
Alternative H**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC



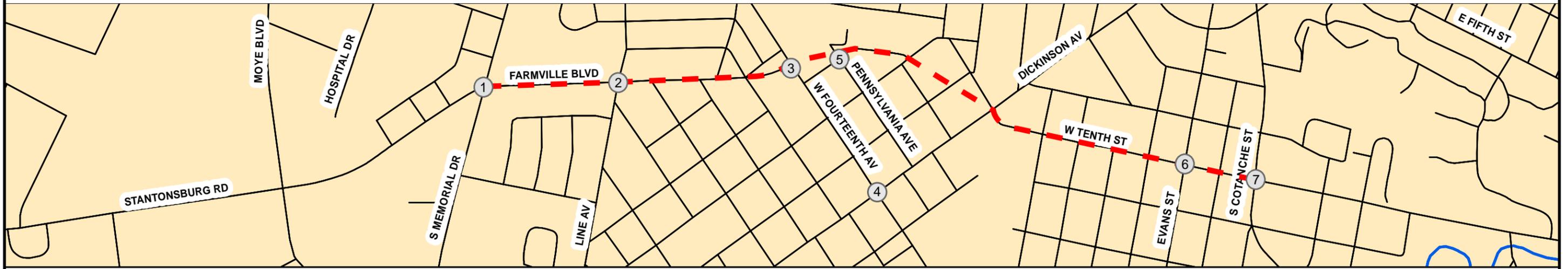
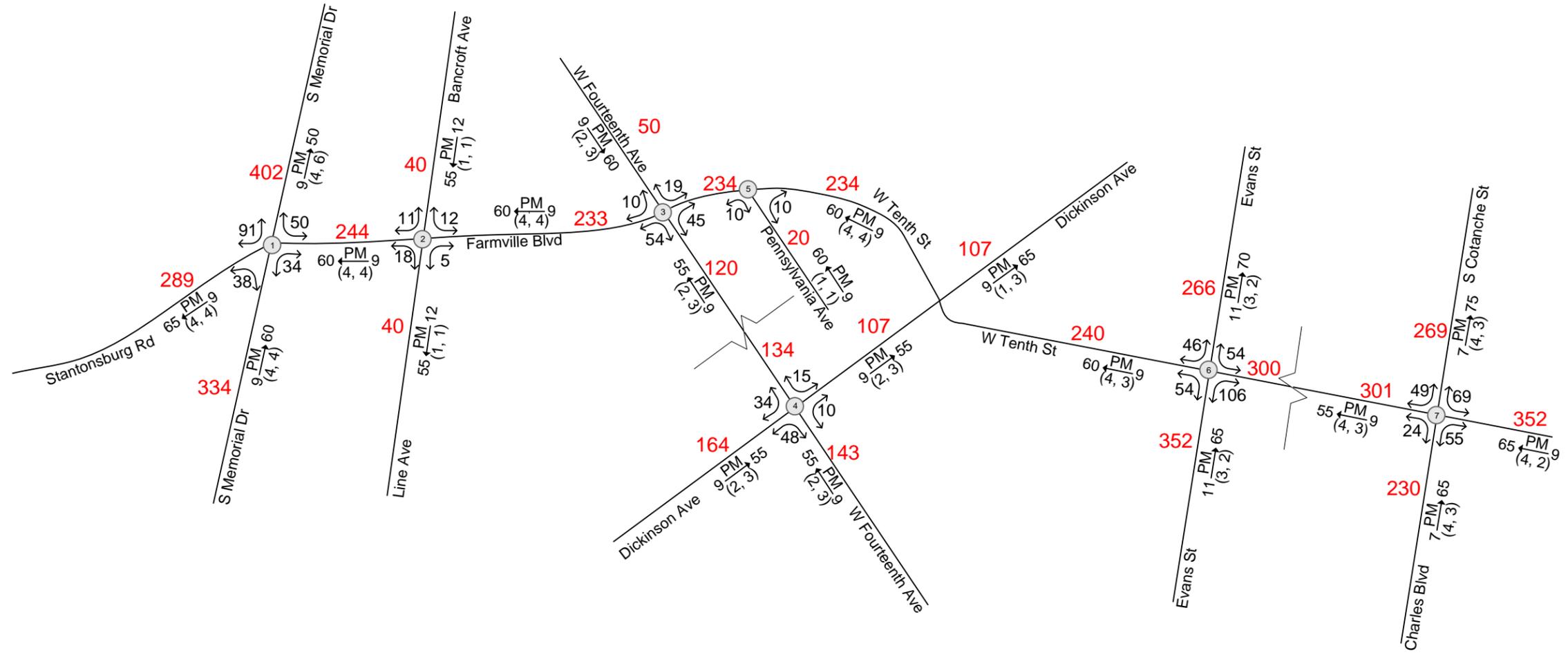
Kimley-Horn
and Associates, Inc.

Legend

- Study Corridor
- Alternative J-Modified
- Sadie Sautler Elementary School
- Beatrice Maye Park
- Historic District / Property
- Study Area
- Railroad

**Figure 14
Alternative J-Modified**





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC

Not to Scale



- ### No. of Vehicles Per Day (VPD) in 100's
- ### Turning Volume (VPD) in 100's
- DHV Design Hourly Volume (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- (d, t) Duals, TT-STs (%)
- Indicates Direction of D

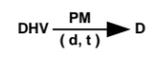


Figure 15
2030 Average Daily Traffic Volumes
Alternative J-Modified (Projected)





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC



Kimley-Horn
 and Associates, Inc.

Legend

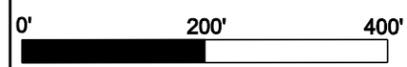
- Proposed Roadway
- Proposed Right-of-Way

Figure 16A
 Preliminary Roadway Design
 (Alternative J-Modified)





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC



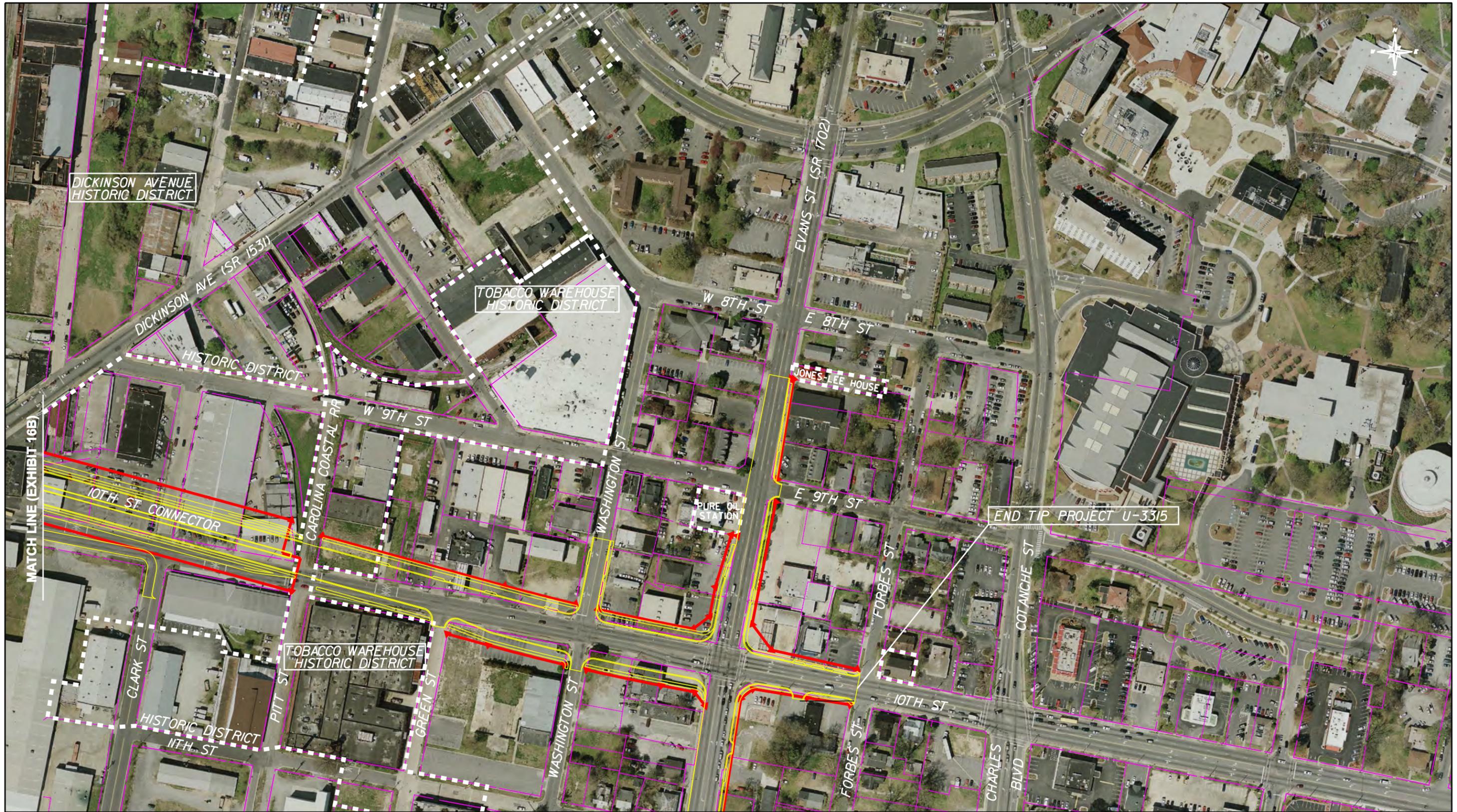
Kimley-Horn
 and Associates, Inc.

Legend

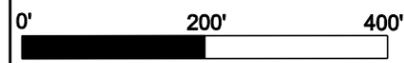
- Proposed Roadway
- Proposed Right-of-Way

Figure 16B
 Preliminary Roadway Design
 (Alternative J-Modified)





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC



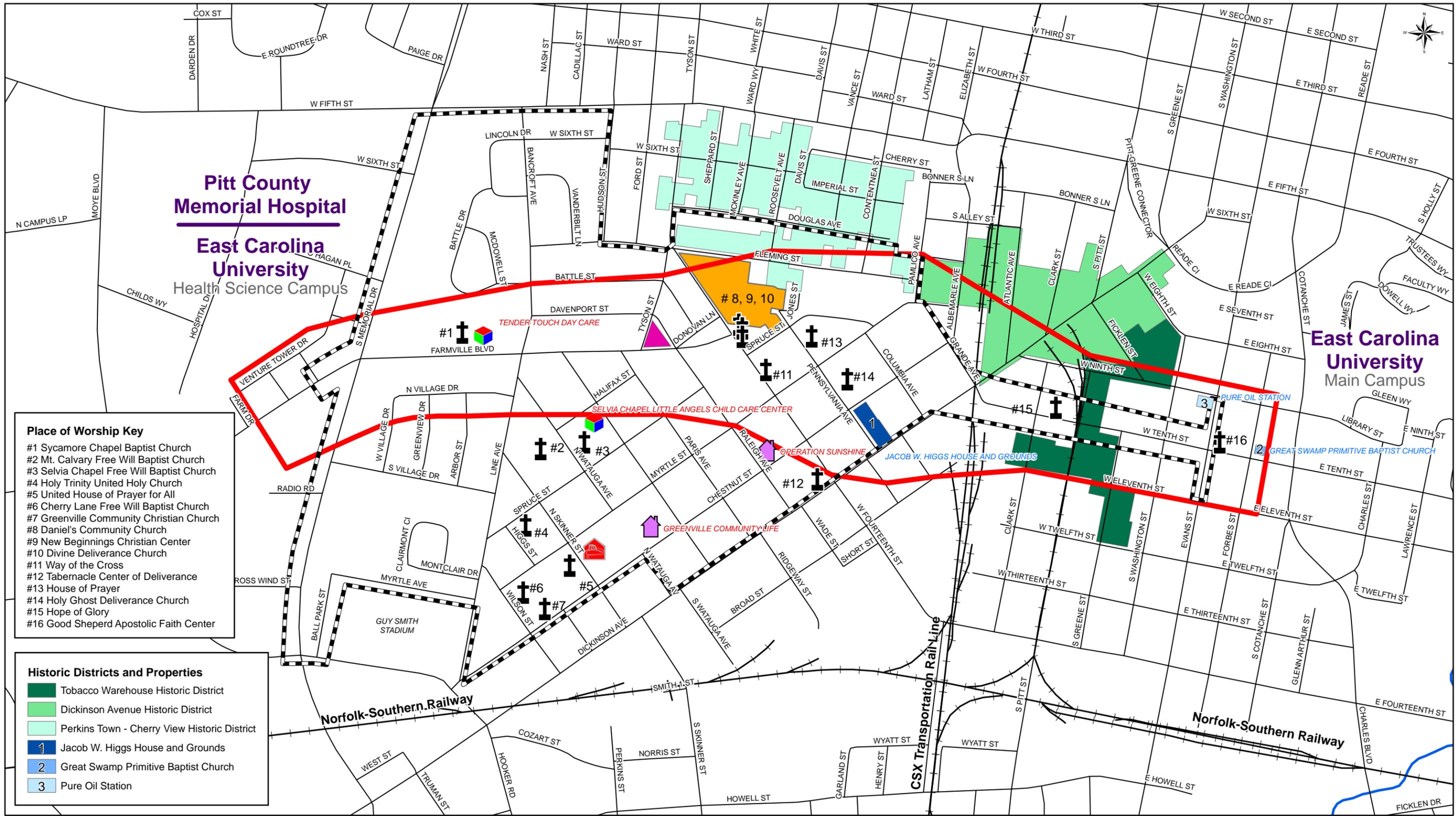
Kimley-Horn
 and Associates, Inc.

Legend

- Proposed Roadway
- Proposed Right-of-Way

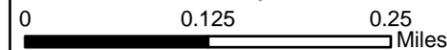
Figure 16C
 Preliminary Roadway Design
 (Alternative J-Modified)





**Stantonsburg Road/Tenth Street Connector
 (Project U-3315)**

Greenville, Pitt County, NC



Kimley-Horn
 and Associates, Inc.

Legend

- Direct Community Impact Area (DCIA)
- Area of Potential Effect (APE)
- Railroad

Community Facilities

- Fire Station
- Community Center

Day Care

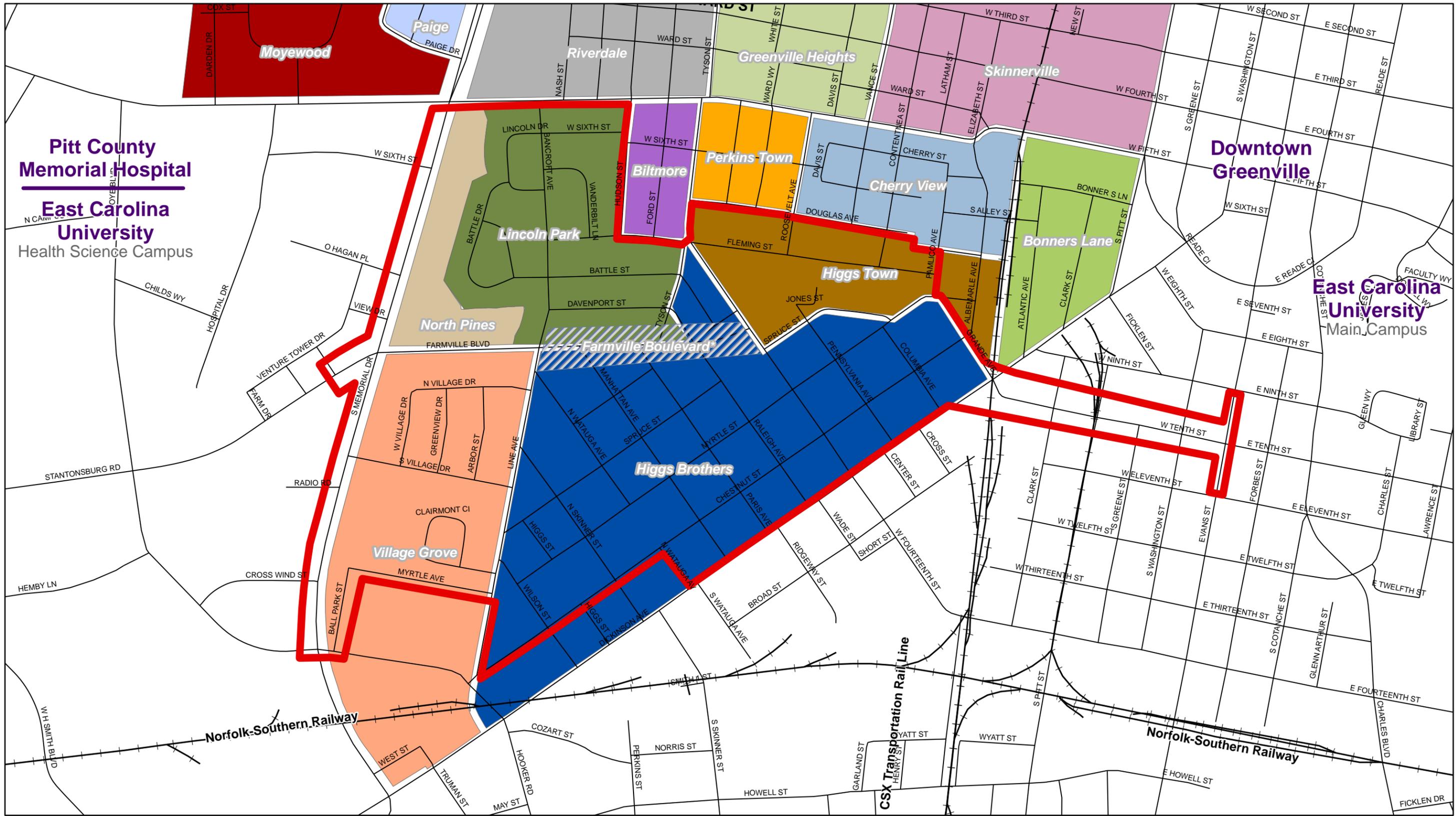
- Place of Worship

Sadie Sautler Elementary School

- Beatrice Maye Garden Park

Figure 17
**Historic Resources and
 Community Facilities**





**Stantonsburg Road/Tenth Street Connector
(Project U-3315)**

Greenville, Pitt County, NC

0 0.125 0.25 Miles



Kimley-Horn and Associates, Inc.

Legend

-  Direct Community Impact Area (DCIA)
-  Railroad
-  Farmville Boulevard*

**Figure 18
West Greenville Neighborhoods**

Source: City of Greenville GIS Department
*Farmville Boulevard is not a city-designated neighborhood





Stantonsburg Road/Tenth Street Connector
 (Project U-3315)
 Greenville, Pitt County, NC

Legend

- Environmental Sites
- Study Area

Source: NCDOT Geotechnical Report (October 5, 2009)

Figure 19
Hazardous Material Sites

APPENDICES

APPENDIX A

COMMENTS RECEIVED FROM FEDERAL AND STATE AGENCIES

United States Department of the Interior – Fish and Wildlife Service
January 4, 2006

United States Department of Defense – Army Corps of Engineers
January 9, 2006

North Carolina Department of Environment and Natural Resources – Division of Coastal Management
January 3, 2006

North Carolina Department of Environment and Natural Resources – Regional Aquifer Protection
January 12, 2006

North Carolina Department of Environment and Natural Resources – Division of Water Quality
January 20, 2006

North Carolina Department of Environment and Natural Resources – Division of Environmental Health
January 23, 2006

North Carolina Department of Environment and Natural Resources – Intergovernmental Affairs
February 8, 2006

North Carolina Department of Administration – State Clearinghouse
February 10, 2006

North Carolina Department of Cultural Resources – State Historic Preservation Office
February 14, 2006

North Carolina Department of Environment and Natural Resources – Intergovernmental Affairs
February 28, 2006

North Carolina Department of Administration – State Clearinghouse
March 2, 2006

Pitt County Schools
March 25, 2009

City of Greenville, North Carolina
January 30, 2006

City of Greenville, North Carolina – Recreation and Parks Department
November 2, 2009

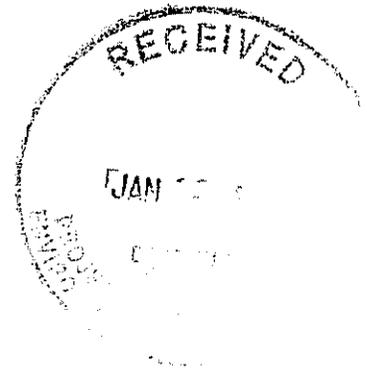
Federal Highway Administration
November 13, 2009



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

January 4, 2006



Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental effects of the proposed Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in the City of Greenville, Pitt County, North Carolina (TIP No. U-3315). These comments provide scoping information in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

Due to the urban nature of the project area and lack of natural habitat, the Service does not have any concerns for this project. It is unlikely that any federally threatened or endangered species will be affected. The Service appreciates the opportunity to comment on this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,

Pete Benjamin
Ecological Services Supervisor

cc: William Wescott, USACE, Washington, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

January 9, 2006



Planning Services Section

Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

This is in reply to your December 28, 2005, letter requesting our comments regarding environmental review issues relative to the proposed Stantonsburg Road/Tenth Street Connector, TIP Project No. U-3315, in Greenville, Pitt County, North Carolina. The specific improvements include an extension of Tenth Street from its intersection with Dickinson Avenue to the intersection of Stantonsburg Road and Memorial Drive. This information is to be used in an environmental review for potential effects of the improvements.

The proposed project area contains no identified 100-year flood plains. However, there may be other drainage structures that should be designed so as not to increase the flooding. Any questions related to flood plains for this response may be directed to Mr. Ray Batchelor at (910) 251-4729.

Based on your preliminary information, there may be waters or wetlands on the proposed work sites. Prior to beginning work, we strongly suggest you have the property inspected to determine the extent of Department of the Army (DA) jurisdiction. If there are questions related to jurisdictional waters or wetlands, please contact Mr. Bill Biddlecombe of our Washington Regulatory Field Office at (252) 975-1616, extension 31.

Sincerely,

Noel Clay, Chief
Planning Services Section



North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor

Charles S. Jones, Director

William G. Ross Jr., Secretary

MEMORANDUM

TO: Gregory J. Thorpe, Ph.D.

FROM: Steve Sollod *SS*

CC: Colista Freeman
Doug Huggett

DATE: January 3, 2006

SUBJECT: Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in Greenville, Pitt County, North Carolina. (TIP Project Number U-3315)

The North Carolina Division of Coastal Management (DCM) received your letter of December 28, 2005 regarding the proposed Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in Greenville, Pitt County, North Carolina.

The rules of the NC Coastal Area Management Act (CAMA) regulate development in Areas of Environmental Concern (AECs) within the 20 counties bordering the coast of North Carolina. The 20 coastal counties are as follows: Beaufort; Bertie; Brunswick; Camden; Carteret; Chowan; Craven; Currituck; Dare; Gates; Hertford; Hyde; New Hanover; Onslow; Pamlico; Pasquotank; Pender; Perquimans; Tyrrell; and Washington.

DCM has the authority to review a project that is not located within the 20 coastal counties for consistency with the North Carolina Coastal Management Program if the project has the potential to cause direct impacts or cumulative effects on coastal resources within the 20 coastal counties. Based on the information provided in the scoping letter for this project located in Pitt County, it appears that direct impacts or cumulative effects on coastal resources within the 20 coastal counties will not occur. At this time, a Consistency Determination does not appear necessary. However, if at some point during project development it appears as though there may be potential for direct or cumulative impacts on coastal resources within the CAMA regulated counties, then NCDOT should submit that information to DCM so that DCM can determine if a consistency review should be initiated.

If you have any questions or concerns, please contact me at (919) 733-2293 x 230, or via e-mail at steve.sollod@ncmail.net. Thank you for your consideration of the North Carolina Coastal Management Program.

1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: <http://dcm2.enr.state.nc.us>

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MEMORANDUM

TO: Melba McGee – Environmental Coordinator – Office of Legislative & Intergovernmental Affairs

FROM: David May – Regional Aquifer Protection Supervisor – Washington *DLM*

SUBJECT: Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street
Greenville, Pitt County
Project Number: 06-0208

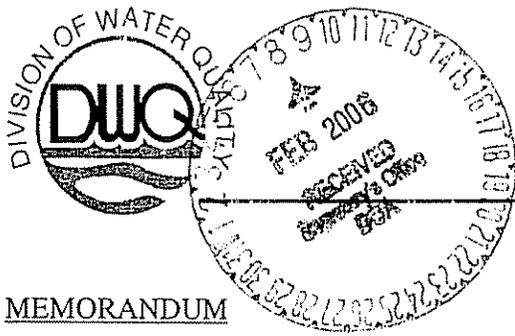
DATE: January 12, 2006

The above referenced project was reviewed and the following comments are offered:

1. The planned route for the road construction project may cross properties that are considered to be pollution incidents with the Department, where contaminated soil and/or groundwater is present. Any contaminated property identified during this project should be reported to the Washington Regional Office.

Please contact me at 252-948-3939 should you have any questions regarding this matter.





January 20, 2006

MEMORANDUM

To: Melba McGee, Environmental Coordinator, Office of Legislative and Intergovernmental Affairs

From: Brian L. Wrenn, Transportation Permitting Unit, NCDWQ *BLW*

Subject: Request for Scoping Comments for the Proposed Construction of the Stantonsburg/Tenth Street Connector in Pitt County, TIP Project No. U-3315, State Clearinghouse Project No. 06-0208.

This office has reviewed the referenced document. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. Based on a preliminary review of the project study area, it appears that there are no streams or wetlands in the project study area. Therefore, DWQ has no specific comments for this project.

General Comments:

1. DWQ prefers spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(b)(6)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506 (h)(3)}, the NC Ecosystem Enhancement Program may be available for use as stream mitigation. A discussion of potential mitigations strategies should be included in the EA.
3. Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to NCDOT Best Management Practices for the Protection of Surface Waters
4. Live concrete should not be allowed to contact the water in or entering into the stream. Concrete is mostly made up of lime (calcium carbonate) and when in a dry or wet state (not hardened) calcium carbonate is very soluble in water and has a pH of approximately 12. In an unhardened state concrete or cement will change the pH of fresh water to very basic and will cause fish and other macroinvertebrate kills.
5. Sedimentation and erosion control measures sufficient to protect water resources must be implemented prior to any ground disturbing activities. Structures should be *maintained regularly*, especially following rainfall events.

6. Bare soil should be stabilized through vegetation or other means as quickly as feasible to prevent sedimentation of water resources.
7. Sediment and erosion control measures should not be placed in wetlands.
8. Borrow/waste areas should avoid wetlands to the maximum extent practicable. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
9. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3027/Nationwide Permit No. 6 for Survey Activities.
10. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
11. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Brian Wrenn 919-733-5715.

pc: William Wescott, USACE Washington Field Office
Garcy Ward, NCDWQ, Washington Regional Office
Chris Militscher, USEPA
Travis Wilson, NCWRC
Gary Jordan, USFWS
File Copy

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number 06-0208
County Pitt

Inter-Agency Project Review Response

Project Name NC DOT Type of Project Proposed project is Stantonsburg Rd/Tenth St. Connector from Memorial Dr. to Evans Street in the City of Greenville.

- The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 15A NCAC 18C .0300et. seq.). For information, contact the Public Water Supply Section, (919) 733-2321.
- This project will be classified as a non-community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.
- If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Section at (252) 726-6827.
- The soil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 733-6407.
- The applicant should be advised that prior to the removal or demolition of dilapidated structures, a extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. For information concerning rodent control, contact the local health department or the Public Health Pest Management Section at (919) 733-6407.
- The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 15A NCAC 18A. 1900 et. sep.). For information concerning septic tank and other on-site waste disposal methods, contact the On-Site Wastewater Section at (919) 733-2895.
- The applicant should be advised to contact the local health department regarding the sanitary facilities required for this project.
- If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Technical Services Branch, 1634 Mail Service Center, Raleigh, North Carolina 27699-1634, (919) 733-2321.
- For Regional and Central Office comments, see the reverse side of this form.

Jim McRight	PWSS	01/23/06
Reviewer	Section/Branch	Date

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project # 06-0208
County Pitt

Inter-Agency Project Review Response

Project Name: NC DOT Type of Project: Proposed project is
Stantonsburg Rd/Tenth St. connector from Memorial Drive to Evans Street in the City of
Greenville.

Comments provided by:

- Regional Program Person
- Regional Supervisor for Public Water Supply Section
- Central Office program person

FEB 07 2006

Name: Fred Hill/ Harry Bailey Telephone #: (252) 946-6481

Date Rec'd: 1/25/06
Date Rev'd: 2/03/06

Program within Division of Environmental Health:

- Public Water Supply
- Other, Name of Program _____

Response (check all applicable):

- No objection to project as proposed
- No comment
- Insufficient information to complete review
- Comments attached
- See comments below

The project has the potential to impact Greenville Utilities Commission (PWS ID# 04-74-010) water systems distribution lines.

Plans and specifications must be submitted to the Public Water Supply Plan Review Section prior to construction if any modifications occur to the distribution systems.

Return to :
Public Water Supply Section
Environmental Review Coordinator for the Division of Environmental Health



North Carolina Department of Environment and Natural Resources

Michael F Easley, Governor

William G Ross Jr, Secretary

MEMORANDUM



TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *jm*
Environmental Review Coordinator

SUBJECT: 06-0208 Scoping for the Proposed Construction of the
Stantonsburg/Tenth Street Connector in Pitt County

DATE: February 8, 2006

The Department of Environment and Natural Resources has reviewed the proposed information. The attached comments are for the applicant's information.

Thank you for the opportunity to review.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/

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One
North Carolina
Naturally



North Carolina Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

February 10, 2006

Ms. Colista S. Freeman
NCDOT
Transportation Building
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Ms. Freeman:

Re: SCH File # 06-E-4220-0208; Scoping; Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in Greenville, North Carolina; TIP No. U-3315

The above referenced environmental impact information has been reviewed through the State Clearinghouse under the provisions of the North Carolina Environmental Policy Act.

Attached to this letter are comments made by agencies reviewing this document which identify issues to be addressed in the environmental review document. The appropriate document should be forwarded to the State Clearinghouse for compliance with State Environmental Policy Act. Should you have any questions, please do not hesitate to call me at 807-2425.

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett / SJC".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region Q

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina



INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

After review of this project it has been determined that the DENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of this form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
<input type="checkbox"/> Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/> NPDES-permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection preapplication conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES Reply time. 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90 - 120 days (N/A)
<input type="checkbox"/> Water Use Permit	Preapplication technical conference usually necessary	30 days (N/A)
<input type="checkbox"/> Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/> Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner On-site inspection Preapplication conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
<input checked="" type="checkbox"/> Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/> Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820	N/A	60 days (90 days)
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of \$50 for the first acre or any part of an acre		20 days (30 days)
<input checked="" type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		30 days
<input type="checkbox"/> Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets		
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with DENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued	30 days (60 days)
<input type="checkbox"/> North Carolina Burning permit	On-site inspection by N.C. Division of Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/> Special Ground Clearance Burning Permit-22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division of Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90 - 120 days (N/A)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Proces. (Statutory Time L.
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to DENR approved plans. May also require permit under mosquito control program, and a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Permit to drill 1 exploratory oil or gas well	File surety bond of \$5,000 with DENR running to State of N.C. conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DENR rules and regulations.	10 days (N/A)
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days (N/A)
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15 - 20 days (N/A)
<input type="checkbox"/>	401 Water Quality Certification	N/A	55 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, N.C. 27611		
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A Subchapter 2C.0100.		
<input type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required		45 days (N/A)
*	Other comments (attach additional pages as necessary, being certain to cite comment authority)		



REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
59 Woodfin Place
Asheville, N.C. 28801
(828) 251-6208

Mooresville Regional Office
919 North Main Street
Mooresville, N.C. 28115
(704) 663-1699

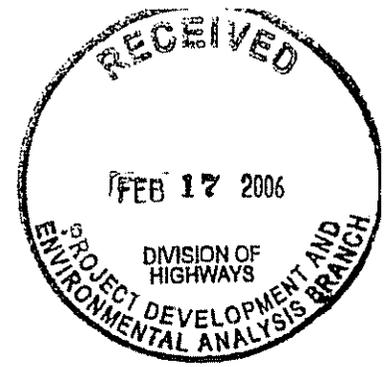
Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, N.C. 28405
(910) 395-3900

Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, N.C. 28301
(910) 486-1541

Raleigh Regional Office
3800 Barrett Drive, P.O. Box 27687
Raleigh, N.C. 27611
(919) 571-4700

Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, N.C. 27107
(336) 771-4600

Washington Regional Office
943 Washington Square Mall
Washington, N.C. 27889
(252) 945-6481



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

February 14, 2006

MEMORANDUM

TO: Gregory Thorpe
NCDOT – Project Development and Analysis

FROM: Peter Sandbeck *PS for Peter Sandbeck*

SUBJECT: Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street,
Greenville, U-3315, Pitt County, CH0 6-0019

Thank you for your notification January 1, 2006, concerning the above project.

We have conducted a search of our maps and files and located the following structure of historical or architectural importance within the general area of this project:

- Greenville Tobacco Warehouse Historic District, listed in the National Register of Historic Places.

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years of age within the project area, and report the findings to us.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for conclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *[Signature]*
Project Review Coordinator

SUBJECT: 06-0208 Stantonburg Road/Tenth Street Connector in the City of Greenville

DATE: February 28, 2006

The attached comments were received by this office after the response due date. These comments should be forwarded to the applicant and made a part of our previous comment package.

Thank you for the opportunity to respond.

Attachment





North Carolina Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

March 2, 2006

Ms. Colista S. Freeman
NCDOT
Transportation Building
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Ms. Freeman:

Re: SCH File # 06-E-4220-0208; Scoping; Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in Greenville, North Carolina; TIP No. U-3315

The above referenced environmental impact information has been reviewed through the State Clearinghouse under the provisions of the North Carolina Environmental Policy Act.

Attached to this letter are **additional** comments made by agencies reviewing this document which identify issues to be addressed in the environmental review document. The appropriate document should be forwarded to the State Clearinghouse for compliance with State Environmental Policy Act. Should you have any questions, please do not hesitate to call me at 807-2425.

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett / 526".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region Q

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina



March 25, 2009

David Brown, City of Greenville
Public Works Department/City Engineer
1500 Beatty Street
Greenville, NC 27834

Dear David:

I would like to inform you of the Board of Educations future plans for Sadie Saulter School as you continue to prepare and plan for the 10th Street Corridor project. The Board of Education at its March 16, 2009 board meeting approved the first phase of projects related to the Long Range Facility Plan and that included the reconfiguration of Sadie Saulter School to a Pre-K center and office building. This will be effective with the opening of school for the 2010-11 school year. The facility will not be operated as a regular K-5 elementary school after this coming year.

Thank you for all your cooperation and should you have any questions please feel free to give me a call.

Sincerely,

Aaron Beaulieu

Aaron Beaulieu,
Associate Superintendent for Operations



CITY OF GREENVILLE

NORTH CAROLINA

27835-7207

PUBLIC WORKS DEPARTMENT

January 30, 2006



Mr. Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Thorpe:

SUBJECT: Stantonsburg Road/Tenth Street Connector from Memorial Drive to Evans Street in the City of Greenville, Pitt County, State Project No. 35781.1.1, NCDOT TIP Project No. U-3315

On behalf of the City of Greenville, we have reviewed the information provided in conjunction with your letter dated December 28, 2005. We appreciate the opportunity to offer comments on this project.

First, we would like to emphasize the importance of this project to the City of Greenville both as a transportation improvement and as an economic stimulus for our City. As mentioned in your information, this project is the Greenville Urban Area's third highest transportation improvement priority. The project is obviously supported by the City of Greenville, East Carolina University, and by University Health Systems (Pitt County Memorial Hospital) as evidenced by their involvement in this project.

Of critical concern is the need for a grade separation of Tenth Street and CSX Railway. This is of vital importance as Tenth Street, once improved, will be the only major thoroughfare in Greenville by which motorist will have unimpeded access to the hospital area and emergency services providers.

This transportation improvement project is intended to address all modes of travel: pedestrians, bicyclists, and public transportation, including a look at future mass transit opportunities from ECU's main campus to the medical facilities.

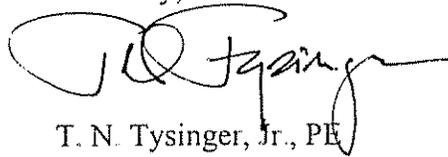
In conjunction with the City's effort to revitalize the uptown area and west Greenville, we are very sensitive to the needs of residents and business owners/operators who may be impacted by this project. It is for this reason an extensive public involvement plan has been developed and is currently underway. It is of utmost importance we find an alignment that will meet the purpose and need for this project while having the least impact on surrounding property owners, residents, and businesses.

Mr. Gregory J. Thorpe, Ph.D.
Page 2
January 30, 2006

To reiterate, this project is critical to the City of Greenville as we strive to meet the needs of this growing community. As a regional center, we provide services to all of eastern North Carolina. This transportation improvement is essential in our efforts to meet the needs of our community and eastern North Carolina.

We appreciate the opportunity to express our views on this project. Should you have any questions, do not hesitate to call at (252) 329-4520.

Sincerely,

A handwritten signature in black ink, appearing to read "T. N. Tysinger, Jr.", written in a cursive style.

T. N. Tysinger, Jr., PE
Director of Public Works

/wfr

cc: Wayne Bowers, City Manager
Bill Richardson, Deputy City Manager
Merrill Flood, Director of Planning & Community Development



Greenville Recreation & Parks Department

P.O. Box 7207
Greenville, NC 27835-7207

Phone (252) 329-4567
Fax (252) 329-4062

November 2, 2009

Mr. Clarence Coleman, Preconstruction and Environment Director
ATTN: Mr. Ron Lucas
Federal Highway Administration
North Carolina Division
310 New Bern Avenue, Suite 410
Raleigh, NC 27601

RE: Stantonsburg Road/Tenth Street Connector Project, TIP No. U-3315

Dear Mr. Coleman:

The City of Greenville, in partnership with the North Carolina Department of Transportation, is developing the referenced project that will extend Tenth Street to connect with Stantonsburg Road at its intersection with Memorial Drive. Through the project's development process, three alternatives are now being studied in detail for this project. It has been identified that the Beatrice Maye Garden is in the project study area and that the project may require the acquisition of land from the Beatrice Maye Garden for the project. The City understands that Section 4(f) of the US Department of Transportation Act of 1966 may apply to a publicly owned park. The purpose of this letter is to document the City's agreement with and support of the project, as well as to address the Department's concerns about the potential for a Section 4(f) issue.

The Recreation & Parks Department is responsible for the Beatrice Maye Garden and is aware of the referenced project's potential impacts to the park. The park area is a triangular piece of open space land approximately one-half acre in size and is bordered by Farmville Boulevard, Tyson Street, and Davenport Street. (Attached is a Vicinity Map and photos of the area.) The open space was dedicated in honor of Mrs. Maye for her support and dedication to the citizens of Greenville on October 20, 2002. There are currently no amenities available in the open space area, such as: parking, picnic tables, playgrounds, recreational fields, lighting, public buildings, or facilities on the property. Our department's plan for this park area includes the addition of future garden beds, landscaping, and gravel pathways.

The City understands that Section 4(f) applies to any significant publicly owned public park or recreation area. As defined by the Federal Highway Administration (*Section 4(f) Policy Paper*, March 1, 2005), "Significance" means "that in comparing the availability and function of a park or recreational area with the park or recreation objectives of the community or authority, the resource in question plays an important role in meeting those objectives."

COG-#844353-v2

*Working to positively impact the health, economy, natural environment & well being
of the Greenville Community.*

Stantonsburg Road/Tenth Street Connector Project
November 2, 2009
Page 2

By the above definition, the Beatrice Maye Garden does not fall under the term "significance" for the purposes of Section 4(f) as applied to publicly owned park or recreation area. The open space area primarily functions as an honorary tribute to Mrs. Maye. It does not function in the same capacity as the City's other parks or recreational areas that might be considered under Section 4(f). In reference to this Section, the open space area may be considered as an incidental, secondary, or occasional park.

In conclusion, the Recreation & Parks Department is aware of the referenced project's potential impacts to the Beatrice Maye Garden park area. In consideration of our department's planned improvements, it has determined that the potential impacts to the park area by the Stantonsburg Road/Tenth Street Connector Project will be acceptable.

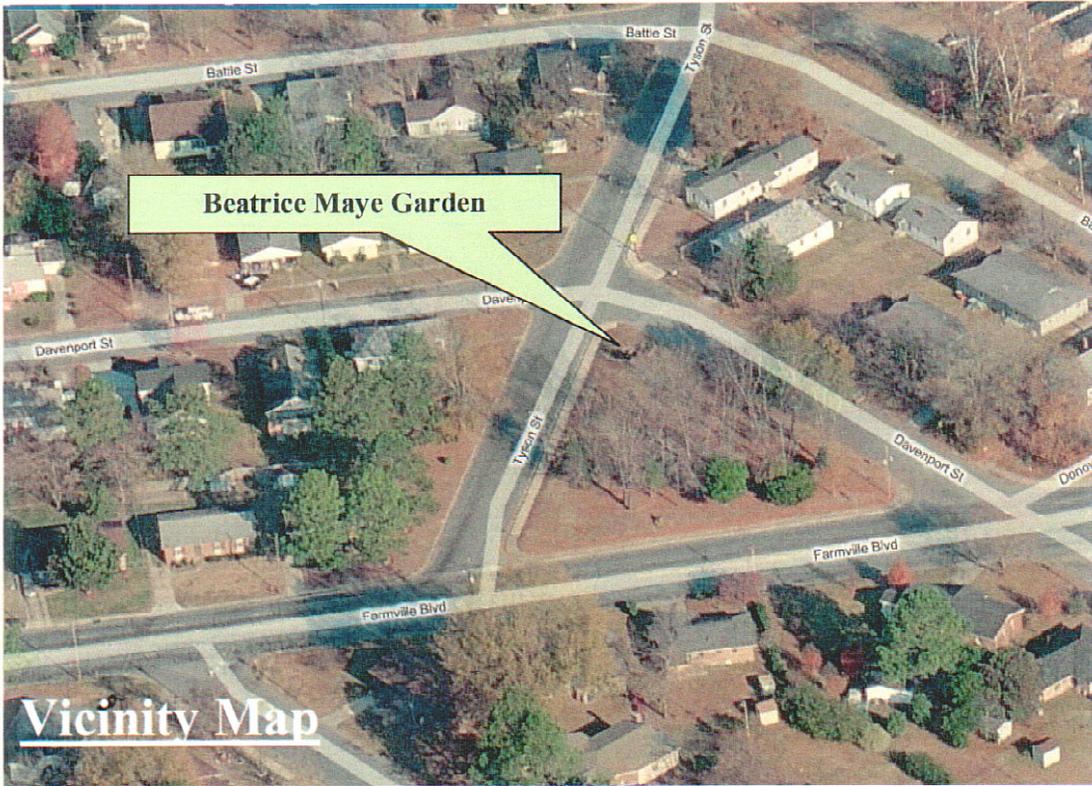
If you have any questions or require additional information, please contact the City's project manager, City Engineer David Brown at (252) 329-4525 or dbrown@greenvillenc.gov.

Sincerely,



Mr. Gary Fenton, Director
Department of Recreation and Parks

cc: Wayne Bowers, City Manager
David T. Brown, PE, City Engineer
Wes Anderson, Director of Public Works
Merrill Flood, Director of Community Development





Van Duyn, Meredith

Subject: FW: U-3315: Greenville is cleared to select and recommend a preferred alternative

From: Ron.Lucas@dot.gov [mailto:Ron.Lucas@dot.gov]

Sent: Friday, November 13, 2009 10:03 AM

To: Devens, Thomas E

Cc: Ron.Hairr@kimley-horn.com

Subject: U-3315, Greenville

Ted:

The FHWA North Carolina Division office has received a letter dated November 2, 2009 from the City of Greenville's Park and Recreation Department in regards to the Beatrice Maye Garden. After reviewing the letter and photographic attachments, the FHWA has determined that a section 4(f) evaluation for the use of the Beatrice Maye Garden is not required. This determination has been made consistent with 23 CFR 774 of the Code of Federal Regulations.

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

APPENDIX B
SECTION 106 EFFECTS CONCURRENCE FORM
AND SECTION 4(F) DE MINIMIS DOCUMENTATION

Federal Aid #: STP-0220(26)

TIP#: U-3315

County: Pitt

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: **Stantonsburg Road/Tenth Street Connector, Greenville**

On **June 30, 2009** representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (HPO)
- Other

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

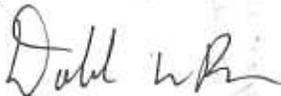
Signed:



Representative, NCDOT

6-30-09

Date



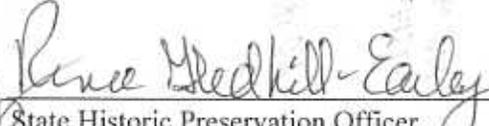
FHWA, for the Division Administrator, or other Federal Agency

6-30-09

Date

Representative, HPO

Date


State Historic Preservation Officer

6-30-09

Date

Federal Aid #: STP-0220(26)

TIP #: U-3315

County: Pitt

Property and Status	Alternative	Effect Finding	Reasons
GREAT SWAMP PRIMITIVE BAPTIST CHURCH (DOE)		NO EFFECT	No construction activity
JACOB HIGGS HOUSE (DOE & LD)		NO EFFECT	No construction activity
PERKINS TOWN - CHERRY VIEW HD (DOE)		NO EFFECT	No construction activity
TOBACCO WAREHOUSE HD & BOUNDARY INCREASE (NR)		NO ADVERSE EFFECT	Design returns restricted back to grade 120' ROW
DICKINSON AVENUE HD (NR)		NO ADVERSE EFFECT	landscape treatment, retaining wall, ^{bridge} guardrail, abutments pedestrian path CONSULT W/ Historic Archit. & HPO during final Design
PURE OIL STATION (DOE)		NO EFFECT	taper ends before prop. ties into existing curb no easement, ROW acquisition

Initialed: NCDOT VEP

FHWA DB

HPO Dye

FHWA intends to use SHPO's concurrence as a basis of a "de minimis" finding for the following properties, pursuant to Section 4(f): Tobacco Warehouse District

APPENDIX C
NCDOT RELOCATION REPORT

EIS RELOCATION REPORT

**North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM**

E.I.S. CORRIDOR DESIGN

WBS:	3578.1.1	COUNTY	Pitt	Alternate Gmod of	Alternate
I.D. NO.:	U-3315	F.A. PROJECT	N/A		
DESCRIPTION OF PROJECT:	Stantonsburg Road / Tenth Street Connector From Memorial Drive (US 13) to Evans Street				

ESTIMATED DISPLACED					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	15	8	23	23	4	17	1	1	0			
Businesses	19	7	26	3	VALUE OF DWELLING DSS DWELLING AVAILABLE							
Farms	0	0	0	0	Owners		Tenants		For Sale For Rent			
Non-Profit	3	4	7	6	0-20M	0	\$ 0-150	0	0-20M	3	\$ 0-150	0
					20-40M	0	150-250	0	20-40M	36	150-250	0
					40-70M	15	250-400	0	40-70M	51	250-400	48
					70-100M	0	400-600	8	70-100M	118	400-600	102
					100 UP	0	600 UP	0	100 UP	486	600 UP	168
					TOTAL	15		8		694		218

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 36 months

REMARKS (Respond by number)									
2. PLEASE SEE ADDENDUM OR FOLLOW LINK Alternative G-Modified Displaced Churches.xlw									
3. THERE ARE OTHER SIMILAR TYPE BUSINESSES NOT AFFECTED BY THIS ALTERNATIVE									
4. PLEASE SEE ADDENDUM OR FOLLOW LINK Alternative G-Modified Displaced Businesses.xlw									
6. MULTIPLE LISTING SERVICES, LOCAL REALTORS, ETC.									
8. AS MANDATED BY LAW									
14. SAME AS #6 ABOVE									

Christopher J. Coughlin _____ Right of Way Agent	07/13/2009 _____ Date	 _____ Relocation Coordinator	11/19/09 _____ Date
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EIS RELOCATION REPORT

**North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM**

E.I.S. CORRIDOR DESIGN

WBS:	3578.1.1	COUNTY	Pitt	Alternate	H	of	Alternate
I.D. NO.:	U-3315	F.A. PROJECT	N/A				
DESCRIPTION OF PROJECT:	Stantonsburg Road / Tenth Street Connector From Memorial Drive (US 13) to Evans Street						

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	16	11	27	27	2	22	2	1	0
Businesses	18	7	25	3	VALUE OF DWELLING			DSS DWELLING AVAILABLE	
Farms	0	0	0	0	Owners	Tenants	For Sale		For Rent
Non-Profit	4	4	8	7	0-20M	\$ 0-150	0-20M	\$ 0-150	

ANSWER ALL QUESTIONS										
Yes	No	Explain all "YES" answers.								
	X	1.	Will special relocation services be necessary?							
X		2.	Will schools or churches be affected by displacement?							
X		3.	Will business services still be available after project?							
X		4.	Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.							
	X	5.	Will relocation cause a housing shortage?							
		6.	Source for available housing (list).							
	X	7.	Will additional housing programs be needed?							
X		8.	Should Last Resort Housing be considered?							
	X	9.	Are there large, disabled, elderly, etc. families?							
		10.	Will public housing be needed for project?							
X		11.	Is public housing available?							
X		12.	Is it felt there will be adequate DSS housing available during relocation period?							
	X	13.	Will there be a problem of housing within financial means?							
X		14.	Are suitable business sites available (list source).							
		15.	Number months estimated to complete RELOCATION? 36 months							

Owners		Tenants		For Sale		For Rent	
0-20M	0	\$ 0-150	0	0-20M	3	\$ 0-150	0
20-40M	0	150-250	0	20-40M	36	150-250	0
40-70M	16	250-400	0	40-70M	51	250-400	48
70-100M	0	400-600	11	70-100M	118	400-600	102
100 UP	0	600 UP	0	100 UP	486	600 UP	168
TOTAL	16		11		694		218

REMARKS (Respond by number)

2. PLEASE SEE ADDENDUM OR FOLLOW LINK
[Alternative H Displaced Churches.xlw](#)

3. THERE ARE OTHER SIMILAR TYPE BUSINESSES NOT AFFECTED BY THIS ALTERNATIVE

4. PLEASE SEE ADDENDUM OR FOLLOW LINK
[Alternative H Displaced Businesses.xlw](#)

6. MULTIPLE LISTING SERVICES, LOCAL REALTORS, ETC.

8. AS MANDATED BY LAW

14. SAME AS #6 ABOVE

Christopher J. Coughlin _____ Right of Way Agent	07/13/2009 _____ Date	 _____ Relocation Coordinator	11/19/09 _____ Date
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EIS RELOCATION REPORT

**North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM**

E.I.S. CORRIDOR DESIGN

WBS:	3578.1.1	COUNTY	Pitt	Alternate Jmod of	Alternate
I.D. NO.:	U-3315	F.A. PROJECT	N/A		
DESCRIPTION OF PROJECT:	Stantonsburg Road / Tenth Street Connector From Memorial Drive (US 13) to Evans Street				

ESTIMATED DISPLACES					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	21	9	30	30	6	21	2	1	0	
Businesses	17	7	24	3	VALUE OF DWELLING				DSS DWELLING AVAILABLE	
Farms	0	0	0	0	Owners		Tenants		For Sale	
Non-Profit	3	4	7	6	0-20M	0	\$ 0-150	0	0-20M	3
					20-40M	0	150-250	0	20-40M	36
					40-70M	21	250-400	0	40-70M	51
					70-100M	0	400-600	9	70-100M	118
					100 UP	0	600 UP	0	100 UP	486
					TOTAL	21		9		694
										218

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 36 months

REMARKS (Respond by number)									
2. PLEASE SEE ADDENDUM OR FOLLOW LINK Alternative J-Modified Displaced Churches.xlw									
3. THERE ARE OTHER SIMILAR TYPE BUSINESSES NOT AFFECTED BY THIS ALTERNATIVE									
4. PLEASE SEE ADDENDUM OR FOLLOW LINK Alternative J-Modified Displaced Businesses.xlw									
6. MULTIPLE LISTING SERVICES, LOCAL REALTORS, ETC.									
8. AS MANDATED BY LAW									
14. SAME AS #6 ABOVE									

Christopher J. Coughlin _____ Right of Way Agent	07/13/2009 _____ Date	 _____ Relocation Coordinator	11/19/09 _____ Date
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APPENDIX D
NCDOT RELOCATION POLICY

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS RELOCATION PROGRAMS

It is the policy of NCDOT to ensure comparable replacement housing will be available prior to construction of state and federally-assisted projects. Furthermore, the North Carolina Board of Transportation has the following three programs to minimize the inconvenience of relocation:

- Relocation Assistance
- Relocation Moving Payments
- Relocation Replacement Housing Payments or Rent Supplement

As part of the Relocation Assistance Program, experienced NCDOT staff will be available to assist displacees with information such as availability and prices of homes, apartments, or businesses for sale or rent and financing or other housing programs. The Relocation Moving Payments Program provides for payment of actual moving expenses encountered in relocation. Where displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement (in case of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate up to \$22,500 to owners who are eligible and qualify and up to \$5,250 to tenants who are eligible and qualify.

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), and/or the North Carolina Relocation Assistance Act (FS-133-5 through 133-18). The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations for relocation assistance advisory services without regard to race, color, religion, sex, or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing which meets decent, safe, and sanitary standards. The displacees are given at least a 90-day written notice after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities. Rent and sale prices of replacement property will be within the financial means of the families and individuals displaced and will be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as (1) purchase of replacement housing, (2) rental of replacement housing, either private or public, or (3) moving existing owner-occupant housing to another site (if possible). The relocation officer will also supply information concerning other state and federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displacee for the cost of moving personal property from homes, businesses, non-profit organizations, and farm operations acquired for a highway project. Under the Replacement Program for Owners, NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisals, and other closing costs and, if applicable, make a payment for any increased interest expenses for replacement dwellings. Reimbursement to owner-occupants for replacement housing payments, increased interest payments and incidental purchase expenses may not exceed \$22,500 (combined total), except under the Last Resort Housing provision.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. The down payment is based upon what the state determines is required when the rent supplement exceeds \$5,250.

It is a policy of the State that no person will be displaced by NCDOT's state or federally-assisted construction projects unless and until comparable replacement housing has been offered or provided for each displacee within a reasonable period of time prior to displacement. No relocation payment received will be considered as income for the purposes of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law.

Last Resort Housing is a program used when comparable replacement housing is not available, or when it is unavailable within the displacee's financial means, and the replacement payment exceeds the federal/state legal limitation. The purpose of the program is to allow broad latitude in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. It is not believed this program will be necessary on the project, since there appear to be adequate opportunities for relocation within the area.

APPENDIX E
FARMVILLE BOULEVARD RESIDENTS' PETITION

June 18, 2009

David T. Brown, PE
City Engineer/Project Director
Greenville, NC 27835

Dear Mr. Brown:

In regards to the Stantonsburg Road/Tenth Street Connector project, we the residents of Farmville Blvd. are making a recommendation that our street be widen symmetrically. To get in and out of our driveways now is a challenge and to take one (1) side and leave the other side would be **detrimental** for the residents that are left behind.

See signatures of residents below.

Sincerely,

Farmville Blvd. Residents

<u>Aaron S. Shambley</u>	<u>Willow L. Edwards</u>
<u>Liam C. Shambley</u>	<u>James E. Ayson</u>
<u>Eda Williams</u>	<u>Jada Hendrix</u>
<u>Herbert Williams, Jr.</u>	<u>Kera Louise Payton</u>
<u>Lawrence Sutton</u>	<u>Kimberly Crandall</u>
<u>Alfred Baker</u>	<u>O Brooks</u>
<u>Bessie Baker</u>	<u>Core Cherry</u>
<u>Reginald Baker</u>	<u>MAM i E Cherry</u>

(Continuation of signatures)

Gary Tucker

Annie Dickson

Brian Keith Hinton

Alton S. Harsley

Angela B. Jones

Mary E. Grimmer

Thomas Sutton

Bill Sanders

Deborah Sanders

Helen Bryan

Franklin Bryan

Karen Monte

Shelia & Fannie Freeman

Alicia Fay Breunig

Billy Best

Walter G. Best

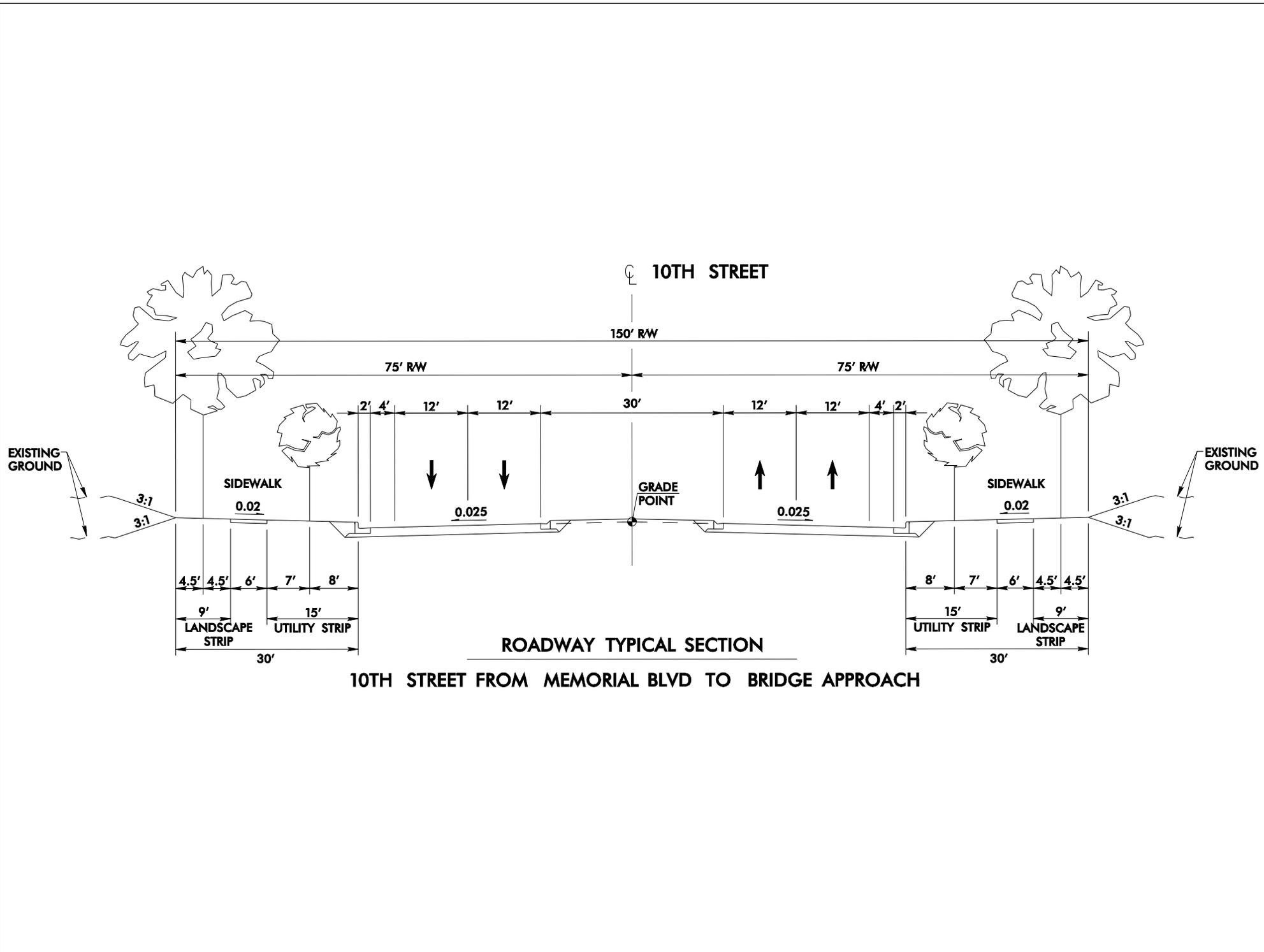
Jimmie Best

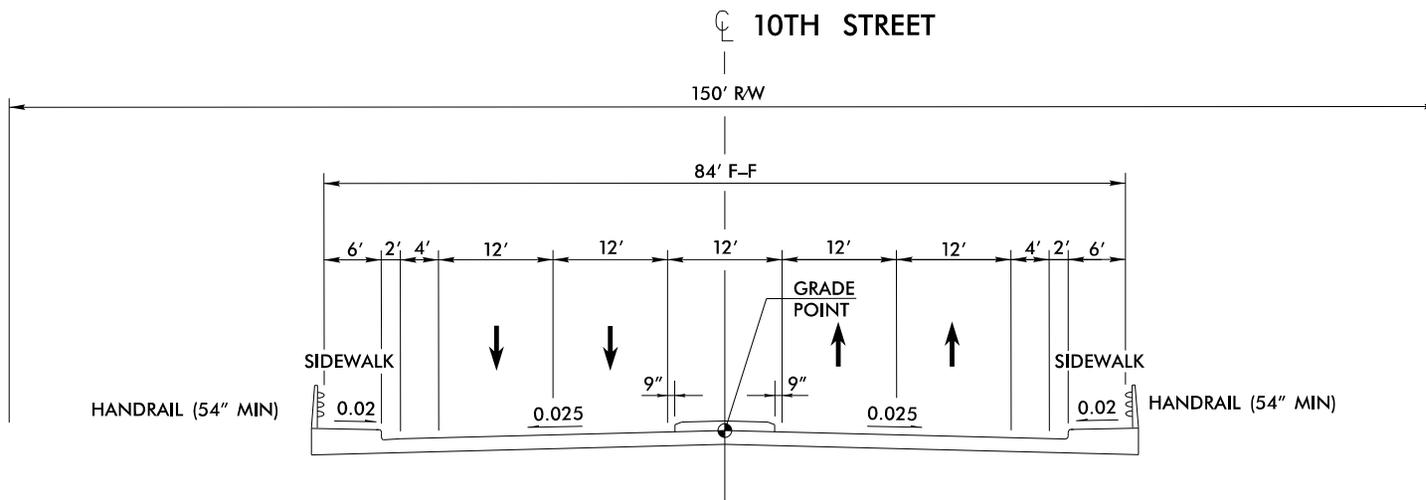
Antonio Harris

Jesse Yaman

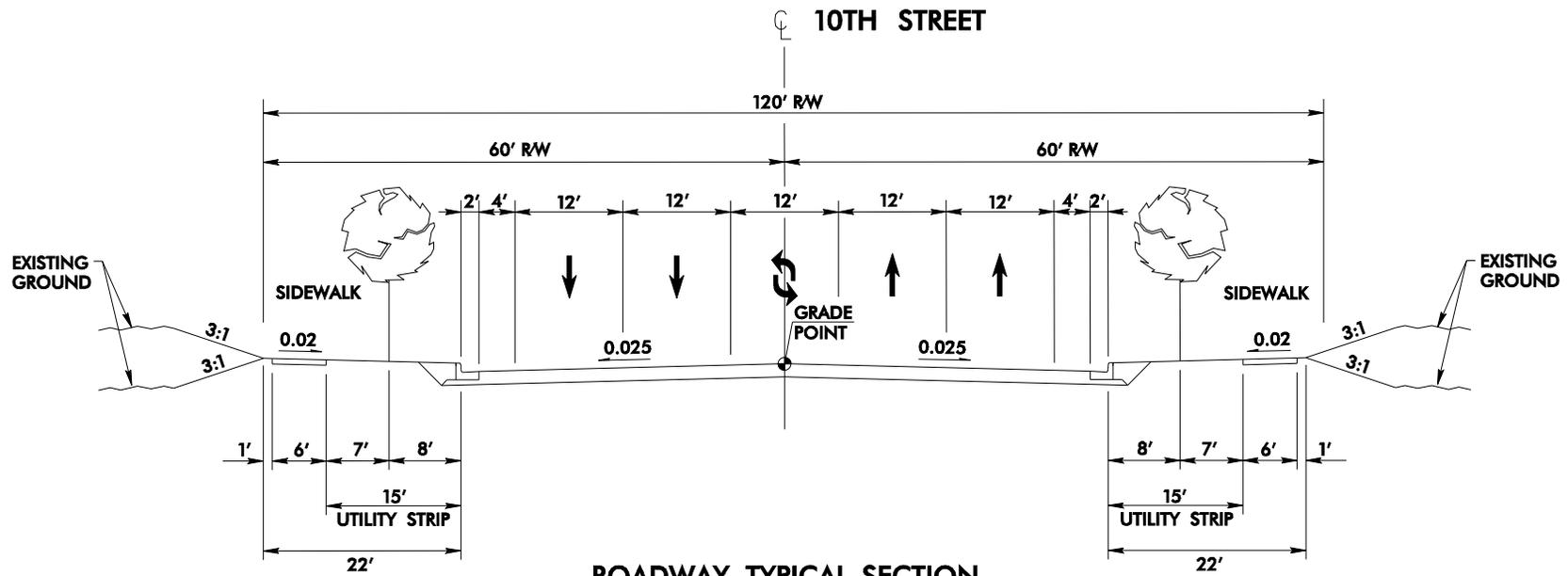
Gladys Best

APPENDIX F
TYPICAL SECTIONS





BRIDGE TYPICAL SECTION
10TH STREET OVER CSX RAILROAD



ROADWAY TYPICAL SECTION

10TH STREET FROM BRIDGE APPROACH TO EVANS STREET

APPENDIX G
MSAT QUALITATIVE ANALYSIS

Mobile Source Air Toxics

1. Introduction

The Stantonsburg Road / Tenth Street Connector project is listed as U-3315 in the *NCDOT 2009-2015 State Transportation Improvement Program (STIP)*. STIP Project U-3315 proposes the extension of and improvements to SR 1598 (Tenth Street) from Memorial Drive to SR 1702 (Evans Street), including a grade separation with the CSX railroad, in Greenville, Pitt County. The project location is shown in **Figure 1**. The typical cross-section for the project is anticipated to be a four-lane curb and gutter facility with a 30-foot landscaped median with a posted speed limit of 35 miles per hour (mph). Planning and design efforts are underway for this project, and right of way acquisition is programmed in the *2009-2015 STIP* to begin in Federal Fiscal Year (FFY) 2011. Construction is scheduled to begin in FFY 2013.

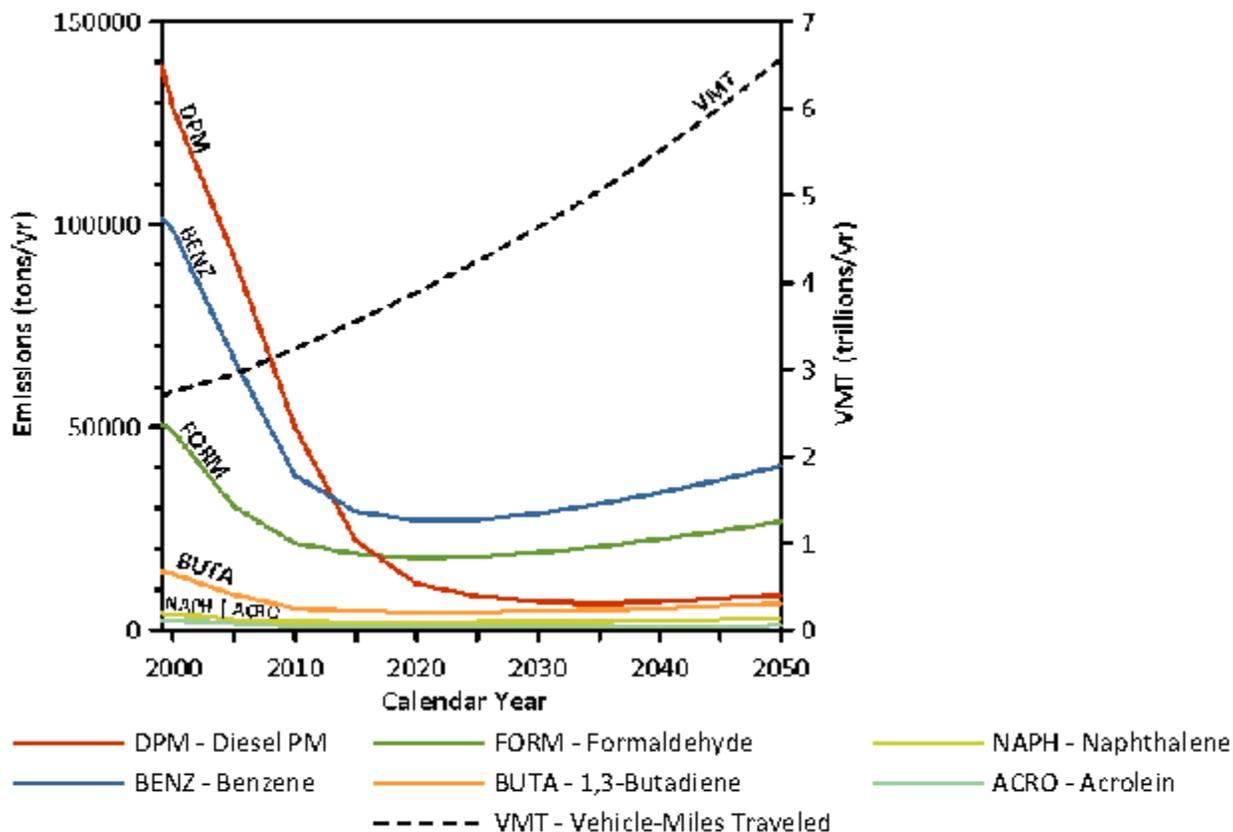
2. Mobile Source Air Toxics Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the US Environmental Protection Agency (USEPA) regulate 188 air toxics, also known as hazardous air pollutants. The USEPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/ncea/iris/index.html>). In addition, the USEPA identified seven (7) compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The 2007 USEPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using USEPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145% as assumed, a combined reduction of 72% in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in **Figure 2**.¹

¹ <http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.htm>.

Figure 2 - National MSAT Emission Trends, 1999-2050 for Vehicles Operating on Roadways (Using USEPA's MOBILE6.2 Model)



Notes:

- (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
- (2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: US Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the National Environmental Policy Act (NEPA).

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, USEPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

3. MSAT Analysis Guidance

According to revised interim guidance issued by FHWA (cited above) concerning Mobile Source Air Toxics (MSAT), the following criteria can be used to determine the level of MSAT analysis:

The FHWA developed a tiered approach for analyzing MSAT in NEPA documents, depending on specific project circumstances. The FHWA has identified three (3) levels of analysis:

- 1. No analysis for projects with no potential for meaningful MSAT effects;*
- 2. Qualitative analysis for projects with low potential MSAT effects; or*
- 3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.*

For projects warranting MSAT analysis, the seven priority MSATs should be analyzed.

(1) Projects with No Meaningful Potential MSAT Effects or Exempt Projects.

The types of projects included in this category are:

- Projects qualifying as a categorical exclusion under 23 CFR 771.117(c);*
- Projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or*
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.*

For projects that are categorically excluded under 23 CFR 771.117(c), or are exempt from conformity requirements under the Clean Air Act pursuant to 40 CFR 93.126, no analysis or discussion of MSAT is necessary. Documentation sufficient to demonstrate that the project qualifies as a categorical exclusion and/or exempt project will suffice. For other projects with no or negligible traffic impacts, regardless of the class of NEPA environmental document, no MSAT analysis is required². However, the project record should document the basis for the determination of "no meaningful potential impacts" with a brief description of the factors considered.

(2) Projects with Low Potential MSAT Effects

The types of projects included in this category are those that serve to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. This category covers a broad range of projects.

We anticipate that most highway projects that need an MSAT assessment will fall into this category. Any projects not meeting the criteria in subsection (1) or subsection (3) as follows should be included in this category. Examples of these types of projects are minor widening projects; new interchanges, such as those that replace a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT).

For these projects, a qualitative assessment of emissions projections should be conducted. This qualitative assessment would compare, in narrative form, the expected effect of the project on traffic

² The types of projects categorically excluded under 23 CFR 771.117(d) or exempt from certain conformity requirements under 40 CFR 93.127 does not warrant an automatic exemption from an MSAT analysis, but they usually will have no meaningful impact.

volumes, vehicle mix, or routing of traffic and the associated changes in MSAT for the project alternatives, based on VMT, vehicle mix, and speed. It would also discuss national trend data projecting substantial overall reductions in emissions due to stricter engine and fuel regulations issued by EPA. Because the emission effects of these projects are low, we expect there would be no appreciable difference in overall MSAT emissions among the various alternatives. In addition, quantitative analysis of these types of projects will not yield credible results that are useful to project-level decision-making due to the limited capabilities of the transportation and emissions forecasting tools.

Appendix B includes example language for a qualitative assessment, with specific examples for four types of projects: (1) a minor widening project; (2) a new interchange connecting an existing roadway with a new roadway; (3) a new interchange connecting new roadways; and (4) minor improvements or expansions to intermodal centers or other projects that affect truck traffic. The information provided in Appendix B must be modified to reflect the local and project-specific situation.

In addition to the qualitative assessment, a NEPA document for this category of projects must include a discussion of information that is incomplete or unavailable for a project specific assessment of MSAT impacts, in compliance with the Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)). This discussion should explain how air toxics analysis is an emerging field and current scientific techniques, tools, and data are not sufficient to accurately estimate human health impacts that would result from a transportation project in a way that would be useful to decision-makers. Also in compliance with 40 CFR 150.22(b), it should contain information regarding the health impacts of MSAT.

(3) Projects with Higher Potential MSAT Effects

This category includes projects that have the potential for meaningful differences in MSAT emissions among project alternatives. We expect a limited number of projects to meet this two-pronged test. To fall into this category, a project must:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000³ or greater by the design year;

And also

- Proposed to be located in proximity to populated areas.

³ Using EPA's MOBILE6.2 emissions model, FHWA staff determined that this range of AADT would be roughly equivalent to the Clean Air Act definition of a major hazardous air pollutant (HAP) source, i.e., 25 tons/yr for all HAPs or 10 tons/yr for any single HAP. Significant variations in conditions such as congestion or vehicle mix could warrant a different range for AADT; if this range does not seem appropriate for your project please consult with the contacts from HEPN and HEPE identified in this memorandum.

Projects falling within this category should be more rigorously assessed for impacts. If a project falls within this category, you should contact the Office of Natural and Human Environment (HEPN) and the Office of Project Development and Environmental Review (HEPE) in FHWA Headquarters for assistance in developing a specific approach for assessing impacts. This approach would include a quantitative analysis to forecast local-specific emission trends of the priority MSAT for each alternative, to use as a basis of comparison. This analysis also may address the potential for cumulative impacts, where appropriate, based on local conditions. How and when cumulative impacts should be considered would be addressed as part of the assistance outlined above. The NEPA document for this project should also include relevant language on unavailable information described in Appendix C.

The average daily traffic forecasted for the 2030 design year of U-3315 indicate that traffic levels during the design year will remain far below the 140,000 to 150,000 AADT threshold. Along the studied portion of this corridor, the greatest forecasted ADT is approximately 35,000 vehicles per day. However, this project does not qualify as an exempt project. Therefore, a qualitative MSAT analysis is required for this project.

4. Qualitative MSAT Analysis

The EA for project U-3315 has identified a Preferred Alternative. The VMT estimated for the Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The Traffic Capacity Analysis Report prepared as a part of this EA explores this in more detail. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to USEPA's MOBILE6.2 model, emissions of all of the priority MSAT except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models. For the selected alternative, emissions will likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The realignment and new construction of travel lanes contemplated as part of the project will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the proposed roadway connection north of the intersection of Fourteenth Avenue and Dickinson Avenue. However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to incomplete or unavailable

information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

5. Unavailable Information for Project Specific MSAT Impact Analysis

This report includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternative evaluated in the forthcoming EA. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22) regarding incomplete or unavailable information:

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis⁴

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The USEPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The USEPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (USEPA, <http://www.epa.gov/ncea/iris/index.html>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

⁴ <http://www.fhwa.dot.gov/environment/airtoxic/100109guidapc.htm>.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the USEPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the USEPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of USEPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten (10) sites across the country - three (3) where intensive monitoring was conducted plus an additional seven (7) with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The USEPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the USEPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires USEPA to determine a "safe" or "acceptable" level of risk due

to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the US Court of Appeals for the District of Columbia Circuit upheld USEPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

APPENDIX H
GLOSSARY

GLOSSARY

abatement	to lessen negative impacts on noise levels, air quality, etc.
access	level of connectivity provided by the transportation network
adverse impact	negative effect
alignment	a possible road location within a corridor
arterial	major road that is primarily intended to serve through traffic, although it may provide some access to adjacent land and therefore also serve local traffic
avoidance measures	revision of the alternative to avoid an impact
cohesion	connection between individuals or groups on the basis of similar attributes such as shared concerns, values, goals, history, or religious beliefs
conflict point	interaction point between two opposing movements, such as between a car turning into the flow of traffic from a driveway
constrained	land that cannot be developed because of the presence of water bodies, wetlands, required buffers, or other limitations
corridor	a general location within which a road might be located; a corridor usually defines the limits of environmental study
cumulative effects	impacts as a result of this project combined with the direct effects of past and future projects
displacement	process by which a business or residence is relocated because its existing location is needed for a transportation project
disproportionate effect	an impact that is predominately borne by a minority and/or low-income population
enhancement measures	reasonable expenditures of public funds to help a project fit harmoniously into the community
environmental justice	issues related to the prevention of discrimination against minority and low-income communities
exposure	the level that a business is able to be viewed by passing vehicles
floodplain	area that floods an average once during a 100-year period

freeway	multi-lane road designed for through movement with access limited to interchanges (fully-controlled access)
indirect effects	changes to land use and travel patterns that may occur as a result of the project
level-of-service	<p>Six levels-of-service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst. In general, the various levels-of-service are defined as follows for uninterrupted flow facilities:</p> <p><i>Level-of-service A</i> represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.</p> <p><i>Level-of-service B</i> is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.</p> <p><i>Level-of-service C</i> is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.</p> <p><i>Level-of-service D</i> represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.</p> <p><i>Level-of-service E</i> represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations</p>

at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

Level-of-service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level-of-service F is an appropriate designation for such points.

master plan	general long-range plan for growth in a certain area, developed by local government entities and covering land use, transportation needs, and other elements
minimization measures	revision of the alternative to reduce impacts
mitigation	measures taken to compensate for negative effects of construction and constructed facilities
multi-modal	combination of transportation types such as air, rail, bus, auto, etc.
Section 4(f)	a section of a Federal law (USDOT Act of 1966) requiring that land may be taken from public parks, recreation areas, refuges, or historic sites only if it can be shown that there is no feasible and prudent alternative to using that land; such lands are sometimes referred to as "4(f) lands"
terminus (termini)	end point(s)
thoroughfare plan	a comprehensive system of existing and needed roads designed to collectively meet the current and long-range future travel demands of an area in a safe and efficient manner
watershed	the entire area of land that drains runoff into a tributary or stream
wetlands	areas saturated with ground or surface water often enough and long enough to maintain certain vegetation which is adapted to saturated soil conditions (such as swamp, marsh, or bog)

ACRONYMS

AADT	Average annual daily traffic
ADA	Americans with Disabilities Act
CAC	Citizen Advisory Committee
CCR	Community Characteristics Report
CIA	Community Impact Assessment
DCIA	Direct community impact area
DSA	Demographic study area
ECU	East Carolina University
EMS	Emergency medical service
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FLUSA	Future land use study area
GIS	Geographic information system
LOS	Level of service
MPO	Metropolitan Planning Organization
NCDOT	North Carolina Department of Transportation
NCDWQ	North Carolina Division of Water Quality
PCMH	Pitt County Memorial Hospital
sICE	Screening Indirect and Cumulative Effects
TIP	Transportation Improvement Program
USACE	U.S. Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VPD	Vehicles per day