

Carpenter-Fire Station Road (SR 1624) Realignment and Railroad Grade Separation

From just west of NC 55  
To Morrisville-Carpenter Road (SR 3014), just east of Louis Stephens Drive

Wake County

ADMINISTRATIVE ACTION

State Environmental Assessment / Finding of No Significant Impact

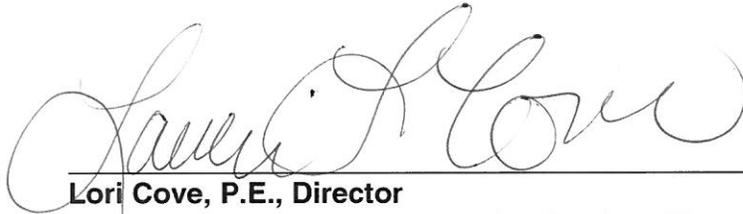
Town of Cary Project ST 1204

TIP Project U-5502

In Compliance with the North Carolina Environmental Policy Act

APPROVED:

10/23/14  
Date

  
\_\_\_\_\_  
**Lori Cove, P.E., Director**

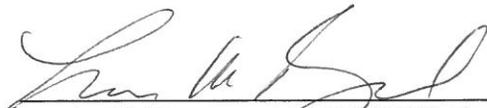
Facilities Design and Transportation Services, Town of Cary

11/7/14  
Date

*FOR*   
\_\_\_\_\_  
**Richard W. Hancock, P.E., Branch Manager**  
Project Development and Environmental Analysis Unit, NCDOT

Document Prepared for the Town of Cary by AECOM Technical Services of North Carolina, Inc.

10/13/14  
Date

  
\_\_\_\_\_  
**Louis M. Raymond, P.E., AICP, Project Engineer**  
AECOM Technical Services of North Carolina, Inc.



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**SUMMARY OF ENVIRONMENTAL COMMITMENTS**

1. The Town of Cary will mitigate impacts to the Phillips' pond located northeast of the existing Carpenter Fire Station Road railroad crossing. Details of mitigation will be further discussed during final design and incorporated into the right-of-way claim with the Phillips property. Mitigation alternatives to be considered are as follows:

- a. Maintain a smaller pond at the location with partial loss of storage. Provide a well or water service connection so that the water provided by the pond can be supplemented to accommodate irrigation and / or freeze protection needs;
- b. Completely remove the pond and substitute any irrigation and / or freeze protection needs with a well or water service connection.

The alternatives described above will require more detailed analysis during final design. Both options have been discussed in principle with the landowner.

2. The Town of Cary will coordinate with the USACE on the permit area for the project and whether or not issuance of the USACE permit will require consultation with the State Historic Preservation Office (SHPO) in accordance with Section 106 of the Historic Preservation Act. If consultation is required, a Memorandum of Agreement will be prepared to document measures to mitigate impacts to the Carpenter Historic District. The Town of Cary currently proposes to investigate the following measures during final design of the proposed project:

- a. The Town of Cary will minimize the use of curb and gutter along the outside lanes of the roadway in the vicinity of the Carpenter Historic District. However, it is anticipated that expressway gutter will be used between NC 55 and a point east of the CSX Railroad to minimize the footprint of the roadway that will be passing under the new railroad bridge as part of the Recommended Alternative 1. Due to the proposed grade of this section of the roadway being less than that of the surrounding land, this expressway curb and gutter is not anticipated to be visible to contributing homes and businesses in the district.
- b. The Town of Cary recommends that the new realigned Carpenter Fire Station Road be designed to pass under the CSX Railroad as part of Recommended Alternative 1. The grade of the railroad will not be changed substantially by the project.
- c. The Town of Cary will plan, develop, and install highway signage that identifies entry into the Carpenter Historic District. The Town of Cary will be responsible for funding and maintaining this signage.
- d. The Town of Cary will minimize the use of street lighting within the Carpenter Historic District. The Town of Cary will plan, develop, and install any necessary roadway and pedestrian lighting in consultation with NCDOT.

- e. The Recommended Alternative 1 will require the relocation of two barns at the Saunders House property (105 Saunders Grove Lane). The Saunders House is a non-contributing resource in the Carpenter Historic District; however, the two barns are contributing resources in the Carpenter Historic District (**Figure 4a**). The Town of Cary will coordinate with the property owner and SHPO, as appropriate to relocate the barns.
3. A US Fish and Wildlife Service proposal for listing the Northern long-eared bat (*Myotis septentrionalis*) as an Endangered species was published in the Federal Register in October 2013. The listing may become effective as soon as April 1, 2015. Furthermore, this species is included in USFWS's current list of protected species for Wake County. The Town of Cary will work with the USFWS to understand how this proposed listing may impact this transportation project. The Town of Cary will coordinate appropriately with the USFWS and USACE regarding the biological conclusion for this species by determining if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.
4. The Town of Cary will coordinate with CSX on the construction of a new highway underpass structure for the project to determine what would happen to the existing siding south of Carpenter Fire Station Road, and to determine if a future second track is justified on this new bridge based on the current and future rail traffic along this rail line.

# Carpenter-Fire Station Road (SR 1624) Realignment and Railroad Grade Separation

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Wake County

## SUMMARY

### 1. Type of Action –

This document is a State Environmental Assessment / Finding of No Significant Impact. The proposed project is funded with Town of Cary Community Investment Bonds and other Town of Cary funds.

### 2. Description of Action –

The subject project, Carpenter Fire Station Road Realignment and Grade Separation (TIP Project U-5502), proposes to construct a four-lane median divided facility from just west of NC 55 to Morrisville-Carpenter Road and along Morrisville Carpenter Road to a point just east of Louis Stephens Drive. The project includes construction of a grade separation enabling the road to pass under the CSX Railroad as part of Recommended Alternative 1. U-5502 is included in the Town of Cary *Comprehensive Transportation Plan* (CTP), the *CAMPO 2035 Long Range Transportation Plan*, the *Carpenter Community Plan*, and the NCDOT *State Transportation Improvement Program*. The realignment of Carpenter Fire Station Road would provide a direct west-east connection between NC 55 and Morrisville-Carpenter Road that passes through the Carpenter Historic District.

### 3. Alternatives Considered –

In addition to the No-Build Alternative, four Preliminary Alternatives (1A, 1B, 2, and 3) were considered for the proposed project. As a part of Alternatives 1A and 1B, the proposed Carpenter Fire Station Road vertical alignment would pass under the existing CSX Railroad track and tie into NC 55 at the existing grade. Alternative 1A is a more northern alignment and Alternative 1B is a southern alignment that ties to Alternative 1A at NC 55 and Morrisville Carpenter Road. The northern alignment impacts the two barns associated with the Saunders property. The southern alignment impacts the home on that property. As a part of Alternative 2, the proposed Carpenter Fire Station Road vertical alignment will pass over the existing CSX Railroad track and over NC 55 and tie back to existing grade at the intersection of Carpenter Fire Station Road and Howard Road. Due to the grade difference at NC 55, an interchange is included in this alternative. As a part of Alternative 3, the proposed Carpenter Fire Station Road vertical alignment would pass under the existing CSX Railroad track and NC 55 and tie back to existing grade at the intersection of Carpenter Fire Station Road and Howard Road. Again, due to grade differences, this alternative would require an interchange at NC 55.

All of the Preliminary Alternatives would have an adverse effect on the Carpenter Historic District due to impacts to the rural viewshed and character of the area. Alternative 2 was initially considered, but because it would have created a large area of fill to carry the roadway over the railroad, in direct sight of the historic district, it was eliminated from consideration. Alternative 3 goes under the railroad and under NC 55 with an interchange at NC 55. NC 55 would also need to be raised with this Preliminary Alternative 3, therefore, due to anticipated costs and challenges associated with developing an interchange with NC 55, it was eliminated from

consideration. Of the remaining Preliminary Alternatives (1A and 1B), it was determined that Alternative 1A, that relocating the barns, would be preferable to relocating the Saunders home.

Construction costs of Preliminary Alternatives 1A and 1B were estimated at \$18,000,000. Construction costs of Preliminary Alternatives 2 and 3 were estimated at \$40,000,000.

Prior to the second Public Meeting in March 2014, Alternatives 1A and 1B were renamed to Alternatives 1 and 2, respectively, to avoid confusion and were presented for public input and comments. After receiving public input and comments and based on the preliminary designs, Alternative 1 had the least adverse effects to the Carpenter Historic District and the least cost of all the alternatives. As a result, the Town of Cary has designated Alternative 1 as the Recommended Alternative.

#### 4. Summary of Environmental Effects –

The table below contains a summary of the impacts associated with Recommended Alternative 1 (formerly Alternative 1A). The environmental impacts associated with the proposed project are detailed in Section IV of this document.

### SUMMARY OF IMPACTS

#### Recommended Alternative 1

Environmental Feature	Impacts
Wetlands	0.25 acres
Streams	205 linear feet
Buffer Impacts in Jordan Lake Watershed	0.59 acres (includes buffer of pond)
Home or Business Relocations	0
Hazardous Material Sites	3
Noise Impacts (impacted receptors)	6
Endangered Species	0
National Register Properties/Districts	1 (Adverse Effect on Carpenter Historic District, see paragraph below)
Churches	Some impacts to Good Hope Baptist Church's lawn/property
Construction Cost	\$18,000,000

*Proposed impacts were calculated using proposed design construction limits plus a 25 foot buffer area.*

The proposed project will impact two barns at the Saunders House property (105 Saunders Grove Lane). The Saunders House is a non-contributing resource in the Carpenter Historic District; however, the two barns are contributing resources in the Carpenter Historic District. The Town of Cary will coordinate with the property owner and SHPO, as appropriate to relocate the barns.

## **5. Actions Required by Other Agencies –**

The proposed project is anticipated to require a U.S. Army Corps of Engineers Nationwide 14 Permit and a NC Division of Water Resources 401 Water Quality Certification. Dependent on the permit area, issuance of a U.S. Army Corps of Engineers permit may require consultation with the State Historic Preservation Office in accordance with Section 106 of the Historic Preservation Act and preparation of a Memorandum of Agreement (MOA).

## **6. Coordination –**

Federal, State, and local agencies were consulted during the preparation of this State Environmental Assessment / Finding of No Significant Impact. Comments from the following agencies were received and were considered during preparation of this assessment:

1. U.S. Fish and Wildlife Service
2. NC Natural Heritage Program
3. U.S. Environmental Protection Agency
4. NC Department of Transportation
5. NC Department of Administration
6. NC State Environmental Review Clearinghouse
7. NC Wildlife Resources Commission
8. NC Division of Water Resources (formerly NC Division of Water Quality)
9. NC Department of Agriculture and Consumer Services
10. NC Division of Emergency Management
11. State Historic Preservation Office (SHPO)
12. U.S. Army Corps of Engineers
13. NC Division of Parks and Recreation
14. Capital Area Preservation
15. Federal Highway Administration (FHWA)

It should be noted that the FHWA was consulted when the use of Federal funds was being considered. No Federal funds are proposed to be used on the project, only Town of Cary Community Investment Bonds and other Town of Cary funds. The Federal lead agency for the Section 106 process is the USACE due to the anticipated Federal permit.

## **7. Additional Information –**

Additional information concerning the proposed project and this State Environmental Assessment / Finding of No Significant Impact can be obtained by contacting one of the following:

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## I. General Description of Proposed Action

The subject project, Carpenter Fire Station Road Realignment and Grade Separation (TIP Project U-5502), proposes to construct a four-lane median divided facility from just west of NC 55 to Morrisville-Carpenter Road and along Morrisville Carpenter Road to a point just east of Louis Stephens Drive. A vicinity map is included as **Figure 1**. The project includes construction of a grade separation enabling the road to pass under the CSX Railroad as part of Recommended Alternative 1. U-5502 is included in the Town of Cary *Comprehensive Transportation Plan (CTP)*, the *CAMPO 2035 Long Range Transportation Plan*, the *Carpenter Community Plan*, and the NCDOT State Transportation Improvement Program.

## II. Purpose and Need

### A. Purpose of Project

The purpose of the proposed project is to realign Carpenter Fire Station Road for approximately 0.8 miles to improve west-east network connectivity in and around the Carpenter Community and the Town of Cary and to facilitate implementation of the *Carpenter Community Plan*. A secondary purpose of the project is to enhance highway and rail crossing safety by replacing an at-grade crossing with a grade separation.

**Network Connectivity** – The proposed project would create a continuous west-east facility to connect points along Carpenter Fire Station Road west of NC 55 with Louis Stephens Drive, Davis Drive, NC 54, and I-40. This network connection is included in Cary's *Comprehensive Transportation Plan* and the *CAMPO 2035 Long Range Transportation Plan*.

**Realignment to Reduce Through-Traffic in the core of the Carpenter Historic District** – The Town's *Comprehensive Transportation Plan (CTP)* and the *Carpenter Community Plan* include the realignment of Carpenter Fire Station Road and improvements to Morrisville Carpenter Road to provide an enhanced west-east network route in Cary and Morrisville (**Figure 1**). The proposed project would reduce through-traffic from the core of the Carpenter Historic District, enabling the bypassed segment of Morrisville Carpenter Road in the core of the Carpenter Historic District (between the CSX Railroad crossing and existing Carpenter Fire Station Road) to remain a two-lane road.

**Safety** – Replacing the at-grade railroad crossing on Carpenter Fire Station Road with a grade separation will eliminate the exposure of vehicles to the two trains that use the rail line daily. In addition, providing a realigned facility to accommodate through trips and limiting traffic on the existing two-lane segment of Morrisville Carpenter Road in the core area of the Carpenter Historic District (the segment between the CSX Railroad crossing to existing Carpenter Fire Station Road) to local trips could limit the need for road widening and other related improvements on that portion of the two-lane road.

## B. Need for Project

### 1. Functional Classification and System Linkage

The *Carpenter Community Plan* was developed and updated with a special consideration to protect the core area of the historic district from the impacts of increasing traffic volumes on Morrisville Carpenter Road. The Town of Cary developed the plan to reduce heavy through-traffic to protect the core area of the historic cross-roads from road improvements. It was believed that with increasing traffic volumes on NC 55 due to increased west-east movement through the area, upgrades to existing roads within the historic crossroads would be inevitable and could threaten historic structures that abut the right of way. If through-traffic is removed from the core of the district, the bypassed portion of Morrisville Carpenter Road could be maintained as a two-lane local route and the core of the Carpenter Historic District can be maintained.

The proposed project is included on the *Capital Area Metropolitan Planning Organization (CAMPO) Long Range Transportation Plan (LRTP) for 2035* as a four-lane roadway (Project ID A440b) for an estimated distance of 0.3 miles. The proposed typical sections for the realignment of Carpenter Fire Station Road are shown in **Figure 2**. Several other roadway improvements are included in the Town of Cary's *Comprehensive Transportation Plan*. These projects also are listed in the *CAMPO 2035 Long Range Transportation Plan* and the *Carpenter Community Plan*. In addition to the subject project, the planned improvements expected to affect the traffic in design year 2035 within the project study area include the following projects:

- a) Carpenter Fire Station Road – project to widen Carpenter Fire Station Road from NC 55 west to Green Level Church Road.
- b) McCrimmon Parkway – project to widen a 1.74-mile segment of existing roadway from two to four lanes from Louis Stephens Drive to NC 54.
- c) McCrimmon Parkway – project to extend a 1-mile segment of McCrimmon Parkway as a four-lane roadway on new location from NC 55 east to Louis Stephens Drive.
- d) Morrisville Parkway – project will extend existing Morrisville Parkway (only goes to NC 54 currently) in the near term (2020 horizon) as a two-lane roadway from Green Level Church Road in Cary eastward to NC 55 (approximately 1.83 miles on new location) and continuing through Louis Stephens Drive, Davis Drive, NC 54, I-40 and to RDU Airport . The roadway will be widened to four lanes in the mid-term (2030 horizon).
- e) NC 540 (Triangle Expressway) –NC 540 (Triangle Expressway) is completed and open to traffic from NC 54 in Morrisville to NC 55 in Holly Springs. The proposed “Complete 540” project, also known as the Southeast Extension, would extend the Triangle Expressway from the NC 55 Bypass in Holly Springs to the US 64/US 264 Bypass in Knightdale, completing the 540 Outer Loop around the greater Raleigh area.
- f) Good Hope Church Road – project will close the existing intersection with NC 55 and realign Good Hope Church Road to connect with McCrimmon Parkway Extension to the north and Carpenter Fire Station Road Extension to the south.

The proposed project is also needed to improve west-east connectivity in west Cary. Between the Town of Cary and the Town of Morrisville, a lack of direct connecting west-east roadways

between NC 55, NC 54, and I-40 makes travel circuitous and limits mobility. In the region, NC 55 is a north-south four-lane divided major arterial that provides local and regional connectivity and access throughout Cary and the Triangle Area. Additionally, though it is signed as a west-east route, in the vicinity of Morrisville and the western portion of Cary, NC 54 predominantly runs north-south.

Enhanced connections from points west of NC 540 and NC 55 to Davis Drive and NC 54 in Cary and Morrisville are needed. The Town of Cary's *Comprehensive Transportation Plan Map* and *CAMPO 2035 Long Range Transportation Plan* include the realignment of Carpenter Fire Station Road from NC 55 to Morrisville Carpenter Road to create a continuous west-east route from Carpenter Fire Station Road west of NC 55 to Morrisville Carpenter Road. The realignment would create a continuous west-east facility to connect points along Carpenter Fire Station Road west of NC 55 with Louis Stephens Drive, Davis Drive, NC 54, and I-40. In addition to the Carpenter Fire Station Road / Morrisville Carpenter Road route, these long-range plans include the eventual addition of west-east routes around the Carpenter Community including McCrimmon Parkway and Morrisville Parkway (completion of these routes will be contingent on funding as they are currently unfunded).

In and around the Carpenter Community, there are no continuous west-east routes between the three parallel routes (north to south) – NC 55, NC 54, and I-40. Morrisville-Carpenter Road / Aviation Parkway is the closest route to provide a complete west-east connection. Additionally, Morrisville-Carpenter Road connects these routes and residential areas to the commercial development node at its intersection with Davis Drive. Other nearby routes include McCrimmon Parkway and Morrisville Parkway. McCrimmon Parkway is a west-east arterial for local connectivity and access in Cary. Per the *CAMPO 2035 LRTP*, McCrimmon Parkway will be widened from two to four lanes from NC 54 to Louis Stephens Drive, and extended as a four-lane roadway on new location from Louis Stephens Drive to NC 55. However, without additional investment, McCrimmon Parkway will still not be completed to NC 55 and does not directly connect to I-40. Morrisville Parkway is a west-east arterial that provides local connectivity and access through Cary, Morrisville, and western Wake County. Phase III of Town of Cary Project ST-1123 proposes to connect portions of Morrisville Parkway sections west of NC 55 and east of Green Level Church Road. Without these projects, Morrisville Parkway connects NC 55 to NC 54, but it does not continue to provide a direct connection to I-40.

## **2. Crashes**

According to the NCDOT crash data for Carpenter Fire Station Road between NC 55 and Morrisville Carpenter Road (for the three year period from August 2009 to July 2012), Carpenter Fire Station Road has a much higher crash rate in comparison to other secondary roads in North Carolina and Wake County (2009-2012 crash rates used for State and County). The North Carolina crash rate for undivided secondary roads was 404.22 crashes per million vehicle miles traveled (MVMT) with a crash severity index of 4.11 and the Wake County crash rate was 328.68 crashes per MVMT with a crash severity index of 3.00. The crash rate on Carpenter Fire Station Road from NC 55 to Morrisville Carpenter Road was 1406.48 crashes per 100 MVMT with a crash severity index of 7.54 which makes the crash rate over three times higher than the North Carolina average and over four times higher than the Wake County average.

At the intersection of Carpenter Fire Station Road (SR 1624) and Morrisville Carpenter Road (SR 3014), there have been 35 reported crashes over a five year period from 2007 to 2012. Twenty-two of the 35 reported crashes were frontal impact crashes. Nineteen of those 22 reported crashes involved southbound Carpenter Fire Station Road vehicles turning left into the

paths of vehicles traveling along Morrisville Carpenter Road which results from drivers failing to yield the right of way or failure to stop for the stop sign.

### **3. Railroad Crossings**

It is estimated that there are currently two daily trains that cross at-grade with Carpenter Fire Station Road. This project includes the closure of the at-grade crossing at Carpenter Fire Station Road and installation of a new grade-separation along a realigned Carpenter Fire Station Road. Replacing the at-grade crossing with a grade separation would eliminate the exposure of crossing traffic to the two trains per day that currently use the track.

### **4. Transportation and Land Use Plans**

The need for the Carpenter Fire Station Road Grade Separation and Realignment project is demonstrated by its inclusion in and consistency with transportation and land use plans in the project area. These plans are described below.

#### **a) Transportation Plans**

The *Town of Cary Comprehensive Transportation Plan* was adopted by Town Council in September 2008. The multi-modal plan consists of four elements: roadway, bicycle, pedestrian and transit. A combination of proposed greenways and proposed street side trails are located throughout the Direct Community Impact Area (DCIA). A majority of the proposed greenways within the DCIA are located between Good Hope Church Road and NC 55, while the proposed street side trails are located along NC 55 and along Morrisville-Carpenter Road.

#### **b) Comprehensive Planning**

The *Town of Cary Comprehensive Plan* comprises eight volumes. Volume 2 is the Land Use Plan, which contains the initiatives and goals for growth in the areas impacted by the proposed project. Other volumes of the Comprehensive Plan include the Comprehensive Transportation Plan, Parks, Recreation, and Cultural Resources Master Plan, Growth Management, and Historic Preservation Master Plan.

#### **c) Zoning / Future Land Use**

The *Town of Cary Carpenter Community Plan*, which is an element of the Land Use Plan, establishes the Town of Cary's official long-range land-use vision and recommendations for the Carpenter Community. The Carpenter planning area is bordered roughly by four major thoroughfares: McCrimmon Parkway to the north, Morrisville Parkway to the south, NC 55 to the west, and Louis Stephens Drive to the east.

The *Carpenter Community Plan* was prepared in conjunction with the Transportation Plan. The Transportation Plan makes recommendations for the ultimate right-of-way. The plan recommends that Good Hope Church Road, Carpenter Upchurch Road, Carpenter Fire Station Road, and Morrisville-Carpenter Road be constructed without curb and gutter west of Louis Stephens Drive, and potentially without urban street lights.

A 100-foot wildflower buffer is proposed along Morrisville-Carpenter Road and Good Hope Church Road. This buffer is intended to create a more open visual experience. Multi-use paths and greenways are proposed to be located within the buffer.

The plan proposes meandering sidewalks be built along Morrisville-Carpenter Road within the recommended wildflower buffer.

The Carpenter Historic District, listed on the National Register of Historic Places, is partially located within the DCIA. The boundaries were drawn to incorporate the greatest possible number of contiguous and historically or architecturally significant structures and sufficient adjacent acreage to define the structure in their historic rural context.

The *Town of Cary Parks, Recreation, and Cultural Resources (PRCR) Master Plan* is intended to help guide the development of the parks, recreation, and cultural resources system in the Town of Cary for the next five to ten years. This plan update incorporates input from a statistically-valid survey, focus group meetings, a Greenway Summit meeting with adjacent jurisdictions, trail user counts, and close coordination with the Cary Greenway Committee. The PRCR plan was adopted by Town Council in November 2012.

According to the *Town of Cary Parks, Recreation, and Cultural Resources (PRCR) Master Plan Recommendations Map*, greenways are proposed along Morrisville-Carpenter Road within the project vicinity, as well as along the proposed and existing Carpenter Fire Station Road. The proposed Kit Creek Greenway is located east of the Good Hope Church Road / Morrisville-Carpenter Road intersection and runs north to south through the project study area. This greenway is part of the Research Triangle Park to Middle Creek Greenway corridor.

#### **d) Transit**

Public transportation in the project vicinity is provided by C-Tran, the Town of Cary's transit service. C-Tran has six (6) weekly fixed routes, operating between 6:00 AM and 8:00 PM Monday through Saturday and no service on Sundays or holidays. C-Tran provides the following services:

- *Fixed Routes.* C-Tran has bus stops throughout the Town. Bus stop locations are placed every few blocks along regular routes. C-Tran operates six (6) weekly fixed bus routes. All routes are wheelchair accessible, and all buses have bike racks.
- *ACCESS.* C-Tran provides curb-to-curb service for eligible disabled and elderly residents of Cary and Wake County.
- *Rack-N-Roll.* The C-Tran Rack-N-Roll Program makes riding fixed routes more convenient for bicyclists. Bike racks on each bus can accommodate two wheeled, single seat bicycles.

In the *2035 Long Range Transportation Plan*, no local bus service is anticipated to be provided along the realigned Carpenter Fire Station Road in the future.

### **5. Traffic Operations**

Annual Average Daily Traffic (AADT) for 2012 Base Year No-Build on Carpenter Fire Station Road west of NC 55 is 11,400 vehicles per day (vpd). The 2012 Base Year No-Build AADT on Morrisville Carpenter Road is 10,500 vpd, just west of Louis Stephens Drive.

2035 No-Build AADT on Carpenter Fire Station Road west of NC 55 is 20,200 vpd. The 2035 Base Year No-Build AADT on Morrisville Carpenter Road is 18,600 vpd, just west of Louis Stephens Drive.

2035 Build AADT on Carpenter Fire Station Road west of NC 55 is 20,200 vpd. The volume on Morrisville-Carpenter Road is 19,400 vpd just west of Louis Stephens Drive. The volume reflects the consolidation of Morrisville Carpenter Road and Carpenter Fire Station Road into one facility.

2012 No-Build AADT on Morrisville Parkway east of NC 55 is 6,000 vpd. 2035 No-Build AADT on Morrisville Parkway west of NC 55 is 10,000 vpd and 23,000 vpd on Morrisville Parkway east of NC 55. 2035 Build AADT on Morrisville Parkway west of NC 55 is 9,800 vpd and 22,800 east of NC 55.

2012 No-Build AADT on McCrimmon Parkway west of NC 55 is 7,400 vpd. 2035 No-Build AADT on McCrimmon Parkway west of NC 55 is 13,000 vpd and 9,600 vpd on McCrimmon Parkway east of NC 55. 2035 Build AADT on McCrimmon Parkway west of NC 55 is 13,000 vpd and 9,000 vpd east of NC 55.

Capacity analyses were performed for the AM and PM peak periods covering the 2012 No-Build Scenario (Existing), the 2035 No-Build Scenario, and the 2035 Build Scenario. The peak traffic volumes, levels of service, and delays for the intersections in these three scenarios are shown in **Figures 3a through 3f**.

Based on the 2035 No-Build capacity analysis, four signalized intersections (including Carpenter Fire Station Road) along NC 55 will operate at the worst level-of-service (LOS F). Additionally, the intersections of Carpenter Fire Station Road with Morrisville Carpenter Road (unsignalized), Morrisville Carpenter Road and Good Hope Church Road (unsignalized), and Morrisville Carpenter Road and Louis Stephens Drive (signalized) will operate at LOS F.

The future volumes on Carpenter Fire Station Road, west of NC 55 and Morrisville Carpenter Road, just west of Louis Stephens Drive necessitate a minimum of four-lanes from a traffic capacity standpoint. Additionally, it is not anticipated that CSX Railroad would allow the existing at-grade intersection of Carpenter Fire Station Road to be widened in the future.

### **C. Benefits of Proposed Project**

In general, the realignment of Carpenter Fire Station Road will ease congestion in the core of the Carpenter Historic District by rerouting increasing through-traffic created by growth in west Cary and beyond. If through-traffic volumes are reduced, the existing streets in the core of the Carpenter Historic District can be maintained as two-lane, local roads instead of being widened to improve traffic capacity.

This project includes the closure of the at-grade crossing at Carpenter Fire Station Road and installation of a new grade-separation along a realigned Carpenter Fire Station Road. Replacing the at-grade crossing with a grade separation would eliminate the exposure of crossing traffic to the two trains per day that currently use the track.

The proposed project is also needed to improve west-east connectivity in west Cary. Between Cary and Morrisville, a lack of continuous west-east roadways results in circuitous travel and limits mobility. Enhanced connections from points west of NC 540 and NC 55 to Davis Drive and NC 54 in Cary and Morrisville are needed. The Town of Cary's *Comprehensive Transportation Plan Map* and *CAMPO 2035 Long Range Transportation Plan* include the realignment of Carpenter Fire Station Road from NC 55 to Morrisville Carpenter Road to create a continuous west-east route from Carpenter Fire Station Road west of NC 55 to Morrisville Carpenter Road. The realignment would create a continuous west-east facility to connect points along Carpenter Fire Station Road west of NC 55 with Louis Stephens Drive, Davis Drive, NC

54, and I-40. In addition to the Carpenter Fire Station Road / Morrisville Carpenter Road route, these long-range plans include the eventual addition of west-east routes around the Carpenter Community including McCrimmon Parkway and Morrisville Parkway (completion of these routes will be contingent on funding as they are currently unfunded).

### **III. Proposed Improvements and Alternatives Studied**

#### **A. Recommended Improvements**

The Carpenter Fire Station Road Realignment and Grade Separation project is approximately 0.8 miles in length and consists of the realignment of Carpenter Fire Station Road (SR 1624) from west of NC 55 Highway to Morrisville-Carpenter Road (SR 3014), east of Louis Stephens Drive. The proposed project incorporates a new four-lane median divided roadway with paved shoulders for bicycles, as indicated in the Town of Cary *Comprehensive Transportation Plan* and the *Carpenter Community Plan*. The project also includes a grade-separated railroad crossing of the CSX Railroad. Realignment and connection of several existing side streets in the project path, such as existing Morrisville-Carpenter Road, Good Hope Church Road (SR 1633) and Saunders Grove Lane, will be included in the project to improve traffic circulation within the community. The realignment is needed to provide a strategically important west-east commuter thoroughfare. As part of the roadway realignment project, the existing at-grade railroad crossing at Carpenter Fire Station Road, just east of NC 55, will be permanently closed.

The proposed alignment is shown in **Figures 4a and 4b**. The recommended improvements are detailed below.

##### **1. Project Termini**

Carpenter Fire Station Road is currently a two-lane undivided roadway that provides an east/west connection between Yates Store Road and Morrisville-Carpenter Road. Carpenter Fire Station Road widens to three or more lanes (including turn lanes) at major cross streets (Yates Store Road, Howard Grove Parkway/Northlands Drive, Green Level Church Road, Cary Glen Boulevard, and NC 55). Carpenter Fire Station Road currently carries approximately 11,000 vehicles per day with a posted speed limit of 45 miles per hour. Existing Carpenter Fire Station Road has shoulder sections and no sidewalks and is located on an approximate 60 to 70-foot wide right of way.

Morrisville-Carpenter Road at the study intersection with Carpenter Fire Station Road is currently a two-lane undivided roadway that carries approximately 7,500 vehicles per day with a posted speed limit of 35 miles per hour. Existing Morrisville Carpenter Road has an approximate 60-foot right of way.

NC 55 at the study intersection with Carpenter Fire Station Road is currently a four-lane median divided highway. NC 55 is a major thoroughfare that carries approximately 29,000 vehicles per day with a posted speed limit of 50 miles per hour.

The proposed project ends just east of the existing intersection of Morrisville Carpenter Road and Louis Stephens Drive. East of this intersection, Morrisville Carpenter Road is a four-lane roadway on an approximate 60-foot wide right of way.

## **2. Proposed Alignment**

The proposed realignment (as described under the Recommended Alternative in Section B. 2. Below) is shown in **Figures 4a** and **4b**. The alignment connects existing Carpenter Fire Station Road at NC 55 (west side of the intersection) to Morrisville Carpenter Road north of existing Carpenter Fire Station Road. The alignment was developed in a manner to minimize impacts to streams, wetlands, and ponds to the extent practicable, while maintaining acceptable approach angles to intersecting routes.

## **3. Typical Section**

The proposed typical section will provide a four-lane, median-divided facility. The typical sections for the project are shown in **Figure 2**. From the west end of the project to NC 55, one 12-foot wide through lane and one 14-foot outside lane will be provided in each direction. A 21-foot wide raised median will be provided and curb and gutter will be used along the outside of the roadway. The 14-foot outside lane is provided for shared use with bicyclists. From NC 55 east to the end of the project, two 12-foot through lanes will be provided in each direction. A 27-foot raised median and 4-foot paved shoulders to accommodate bicyclists, and a ditch section will also be provided. Expressway gutter will be used to minimize the footprint of the roadway that must pass under the CSX Railroad.

## **4. Proposed Right of Way / Access Control**

The proposed project will generally require a right of way width ranging from 100 to 115 feet. Additional right of way will also be needed along intersecting roadways. In addition, some construction and drainage easements will be required. No control of access is proposed.

## **5. Intersections**

The proposed project will construct a four-lane median divided roadway from Howard Road to just east of the existing intersection of Morrisville Carpenter Road and Louis Stephens Drive. The existing portion of Carpenter Fire Station Road from NC 55 to just east of the CSX rail crossing and the associated at-grade rail crossing will be closed. From just east of the CSX rail crossing to the Morrisville-Carpenter Road intersection, the existing Carpenter Fire Station Road will remain open to traffic. Additionally, the proposed project will have three at-grade intersections: 1) NC 55, 2) Good Hope Church Road, and 3) Louis Stephens Drive. The existing NC 55 intersection is signalized and the proposed at-grade intersection is signalized. The Good Hope Church Road at-grade intersection is proposed as unsignalized and the proposed Louis Stephens Drive at-grade intersection is proposed as signalized.

## **6. Drainage Structures**

A preliminary hydraulics study was conducted to identify proposed drainage structures that would be required for the project. Additional, detailed hydraulic studies will be done during the final design phase of the project. Based on the initial study, the vertical alignment will pass under the existing CSX Railroad track and tie in to NC 55 at the existing grade. This alignment will create a low point where the new road goes under the CSX Railroad. The alignment will undercut a jurisdictional stream which will require rerouting approximately 25 acres that feeds into the existing farm pond that is just north of the proposed alignment. The farm pond has a total watershed area of approximately 37 acres, so the rerouting of over sixty-seven percent of the watershed will likely create viability issues for the pond in the future.

AECOM met with the NCDOT Hydraulics Unit on April 5, 2013 to discuss the proposed project. NCDOT is in general concurrence with the preliminary drainage design concept under the existing CSX Railroad track and will provide reviews as the final design progresses. The proposed roadway storm drainage system will be designed for the 50-year storm to prevent flooding in the roadway sag. The storm drainage system will require piping up to a 42-inch diameter to handle the 50-year design. The system will require cuts of up to 23 feet to install the pipe and a bore and jack of approximately 200 feet of 42-inch welded steel pipe across NC 55 to outfall the pipe system. Expressway gutter is proposed along the main line in lieu of roadside ditches to reduce the amount of cut required to install the storm drainage pipe.

## **7. Design Speed**

The proposed design speed for the Carpenter Fire Station Road realignment and grade separation is 50 mph. It is anticipated that the roadway would be signed at 45 mph.

## **8. Bicycle Accommodations**

Fourteen-foot wide outside lanes for shared bicycle use will be provided along both sides of the proposed roadway.

## **9. Railroad Crossings**

A CSX Railroad runs north-south parallel to NC 55 and intersects existing Carpenter-Fire Station Road. Existing at-grade railroad crossings are currently located on both Carpenter Fire Station Road and Morrisville-Carpenter Road. Based on information from the NCDOT Rail Division, there are two trains per day that utilize this section of railroad in the project area.

## **10. Construction Costs**

A preliminary construction cost estimate was prepared during the development of this environmental assessment. Construction costs for the Recommended Alternative 1 are estimated at \$18,000,000.

# **B. Alternatives Considered**

The following alternatives were considered in addition to the Recommended Alternative 1:

## **1. "No-Build" Alternative**

The "No-Build" alternative serves as the baseline condition for comparison with the recommended improvements. The No-Build alternative would not require acquisition of property for right-of-way, alter any biotic communities or affect water resources. However, the No-Build Alternative would not provide the network connectivity or railroad grade separation provided by the recommended improvements.

## **2. Preliminary Alternatives**

A total of four (4) Preliminary Alternatives were developed, designed, and evaluated based on environmental impacts and estimated costs. The four Preliminary Alternatives were 1A, 1B, 2, and 3. These alternatives are described below.

### Alternatives 1A and 1B

The proposed Carpenter Fire Station Road vertical alignment will pass under the existing CSX Railroad track and tie into NC 55 at the existing grade.

Alternative 1A is a more northern alignment and Alternative 1B is a southern alignment that ties to Alternative 1A at NC 55 and Morrisville Carpenter Road. The northern alignment impacts the two barns associated with the Saunders property. The southern alignment impacts the home on that property.

Construction costs for Alternatives 1A and 1B were estimated at \$18,000,000.

### Alternative 2

The proposed Carpenter Fire Station Road vertical alignment will pass over the existing CSX Railroad track and NC 55 and tie back to existing grade at the intersection of Carpenter Fire Station Road and Howard Road. The grade separation of proposed realigned Carpenter Fire Station Road over NC 55 would require an interchange.

Construction costs for Alternative 2 were estimated at \$40,000,000.

### Alternative 3

The proposed Carpenter Fire Station Road vertical alignment will pass under the existing CSX Railroad track and NC 55 and tie back to existing grade at the intersection of Carpenter Fire Station Road and Howard Road. The grade separation of proposed realigned Carpenter Fire Station Road under NC 55 would require an interchange.

Construction costs for Alternative 3 were estimated at \$40,000,000.

### Recommended Alternative

All of the Preliminary Alternatives would have an adverse effect on the Carpenter Historic District due to impacts to the rural viewshed and character of the area. Alternative 2 was initially considered, but because it would have created a large area of fill to carry the roadway over the railroad, in direct sight of the historic district, it was eliminated from consideration. Alternative 3 goes under the railroad and under NC 55 with an interchange at NC 55. NC 55 would also need to be raised with this Preliminary Alternative 3. Therefore, due to the need to construct an interchange and associated costs, Alternative 3 was eliminated from consideration. Alternatives 1A and 1B were carried forward for study along with the No-Build. Of the remaining Preliminary Alternatives, it was determined that Alternative 1A that relocated the barns would be preferable to relocating the Saunders home.

Construction costs of Preliminary Alternatives 1A and 1B were estimated at \$18,000,000. Construction costs of Preliminary Alternatives 2 and 3 were estimated at \$40,000,000.

Prior to the second Public Meeting in March 2014, Alternatives 1A and 1B were renamed to Alternatives 1 and 2, respectively, to avoid confusion and were presented for public input and comments. After receiving public input and comments and based on the preliminary designs, Alternative 1 had the least adverse effects to the Carpenter Historic District and the least cost of all the alternatives. As a result, the Town of Cary decided that Alternative 1 was the

Recommended Alternative. The alignment and construction limits of the Recommended Alternative are displayed on **Figures 4a, 4b, and 5**.

## **IV. Environmental Effects of Proposed Action**

### **A. Natural Resources**

Natural resources investigations were conducted to inventory, catalog, and describe the various natural resources present along the proposed corridor and quantify potential impacts. Published information and resources were collected prior to a field investigation. Information sources used to prepare for the field investigation and this portion of the environmental assessment included the following:

- USGS quadrangle maps (Green Level, NC, Cary, NC).
- Aerial photography of project area
- Soil Survey of Wake County Area (USDA Soil Conservation Service, 1970)
- USFWS list of protected and candidate species (Updated January 22, 2014)
- NC Natural Heritage Program (NHP) files of rare species and unique habitats

A general field survey was conducted along the proposed project route by AECOM biologists on October 10, 11, and 18, 2012. Water resources were identified and their physical characteristics were recorded. Plant communities and their associated wildlife were identified using a variety of observation techniques, including active searching, visual observations, and identifying characteristic signs of wildlife (sounds, tracks, scats, and burrows). Terrestrial community classifications generally follow Schafale and Weakley (1990) where appropriate and plant taxonomy follows Radford *et al.* (1968).

Jurisdictional wetlands were evaluated and delineated based on criteria established in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual Eastern Mountains and Piedmont Region, Version 2.0 (USACE, 2012). Wetlands were classified based on Cowardin *et al.* (1979).

#### **1. Physical Resources**

The project study area is in east-central North Carolina within the Piedmont physiographic province straddling the Neuse and Cape Fear River drainage basins. The general topography in the vicinity of the project is characterized by gently rolling hills divided by small drainages having a general slope upward towards the eastern end of the study area. Elevations in the project study area range from approximately 320 to 400 feet.

The project is located in northwest Wake County in a fast growing area located near Research Triangle Park that receives heavy commuter traffic. The proposed project study area is a combination of rural residential, agriculture, and encroaching suburban development combined

with scattered commercial areas. Much of the area in or adjacent to the project study area is characterized by residential communities with large developments to the east and west of the project study area.

## 2. Soils

The Wake County Soil Survey identifies eight soil types within the project study area (**Table 1**).

**Table 1. Soils in the project study area**

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Creedmoor sandy loam	CrB2	Moderately well drained	No
Creedmoor sandy loam	CrC2	Moderately well drained	No
Granville sandy loam	GrB2	Well drained	No
Mayodan sandy loam	MfB2	Well drained	No
White Store sandy loam	WsB2	Moderately well drained	No
White Store sandy loam	WsC2	Moderately well drained	No
White Store sandy loam	WsE	Moderately well drained	No
Worsham sandy loam	WyA	Poorly drained	Yes

## 3. Water Resources

Water resources in the project study area are located in both the Cape Fear (US Geologic Survey Hydrologic Unit Code 03030002) and Neuse River basin (US Geologic Survey Hydrologic Unit Code 03020201). Seven streams were identified in the project study area (**Table 2**). The location of each water resource is shown in **Figures 4a and 4b**. The physical characteristics of these streams are provided in **Table 3**. The project study area is bisected by the watershed divide separating the Neuse and Cape Fear rivers.

**Table 2. Water resources in the project study area.**

Stream Name	Map ID	NCDWQ Index Number	Best Usage Classification
UT Panther Creek	SB	16-41-1-17-3	WS-IV;NSW
Morris Branch	SC/SF/SPA	16-41-1-17-3-1	WS-IV;NSW
UT Morris Branch	SD	16-41-1-17-3-1	WS-IV;NSW
UT Morris Branch	SE/SPB	16-41-1-17-3-1	WS-IV;NSW
UT Crabtree Creek	SG	27-33-(1)	C; NSW
UT Morris Branch	SH	16-41-1-17-3-1	WS-IV;NSW
UT Morris Branch	SJ	16-41-1-17-3-1	WS-IV;NSW

**Table 3. Physical characteristics of water resources in the project study area.**

Map ID	Bank Height (ft.)	Bankfull width (ft.)	Water Depth (in)	Channel Substrate	Velocity	Clarity
SB	4-5	1-2	2-4"	Sand	Moderate	Clear
SC/SF/SPA	3-4	1-2	6-8"	Sand, silt	Moderate	Turbid
SD	3-5	1-2	6"	Sand, silt	Moderate	Clear
SE/SPB	4-6	2-3	2-10"	Sand, silt, gravel	Moderate	Clear
SG	6"	6-12"	3-6"	Sand	Moderate	Clear
SH	8"-12"	1	0"	Sand, silt, gravel	None	N/A
SJ	6"-12"	1-2	0-3"	Sand, silt	Moderate	Slightly turbid

Four ponds occur in the project study area. These ponds are 1.6 acres, 1.3 acres, 1.6 acres, and 1.8 acres in size. All are impoundments of surface waters and have surface water connections to streams in the project study area.

There are no designated trout waters, anadromous fish waters or Primary Nursery Areas present in the project study area. There are no designated High Quality Waters or water supply watersheds (WS-I or WS-II) within 1.0 mile downstream of the project study area. The western portion of the project study area that occurs in the Cape Fear basin is within a WS-IV water supply watershed. There are no waters in the project study area listed on the North Carolina 2012 Final 303(d) list of impaired waters, although Crabtree Creek is listed on the 2012 303(d) list and receives waters from the project study area. Crabtree Creek is approximately 2 miles downstream of the project study area and is impaired due to poor benthic ecological integrity.

There are no benthic macroinvertebrate or fish monitoring stations within one mile of the project study area. One benthic macroinvertebrate monitoring station is located in the Neuse River basin on Crabtree Creek approximately 2.3 miles east of the project study area (JB36). This benthic macroinvertebrate sampling site on Crabtree Creek received a rating of Poor in 1995, 2000, and 2009.

#### **4. Biotic Resources**

Seven terrestrial communities were identified within the project study area; maintained/disturbed areas, agricultural fields, pastures, early successional areas, pine forest/planted pine, mixed pine-hardwood forest, and hardwood forest.

Information on community types is included in a technical report. A copy of the full technical report entitled Natural Resources Technical Report which can be viewed at the Town of Cary, Facilities Design and Transportation Services, Cary Town Hall, 316 North Academy Street, Cary, NC 27513.

## **B. Clean Water Act-Waters of the United States**

### **1. Streams and Wetlands**

A delineation of waters of the United States was performed within the project study area on October 10, 11 and 18, 2012. Five intermittent streams, two perennial streams, and one intermittent/perennial stream were located within the project corridor (**Table 4**) and shown on **Figures 4a and 4b**. All streams in the study area have been designated as warm water streams for the purposes of mitigation.

**Table 4. Jurisdictional characteristics of water resources in the project study area.**

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Hydrologic Unit
SB	559	Perennial	Yes	Subject	03030002
SPA	52	Intermittent	Undetermined	Subject	03030002
SC/SF	1041	Perennial	Yes	Subject	03030002
SD	250	Intermittent	Undetermined	Subject	03030002
SE/SPB	783	Perennial	Yes	Subject	03030002
SG	155	Intermittent	Undetermined	Subject	03020201
SH	182	Intermittent	Undetermined	Not subject	03030002
SJ	432	Intermittent	Undetermined	Subject	03030002
<b>Total</b>	<b>3,454</b>				

Eleven wetland areas, encompassing 1.26 acres, were identified within the project study area (**Table 5**). The study area is located along the watershed divide between the Cape Fear and Neuse River basins (USGS Hydrologic Units 03030002 and 03020201 respectively). Wetlands WC, WD, WE, WF, WG, and WH are in mixed-pine hardwood forest. Wetland WK and WL are in hardwood forest. WI is in a disturbed/maintained community.

A field verification with David Shaeffer (U.S. Army Corps of Engineers) occurred on August 27, 2013 to verify the jurisdictional status of the wetland and stream features in the project study area. Landowners did not grant access to all features in the project study area so only a portion of the project features were observed but enough were observed for the US Army Corps of Engineers to issue a Preliminary Jurisdictional Determination for the project on November 19, 2013. Rob Ridings (NC Division of Water Resources) reviewed project ponds and streams on March 6, 2014 and determined all but stream SH are subject to either Jordan Lake or Neuse River buffer regulations since the project occurs in both basins.

**Table 5. Jurisdictional characteristics of wetlands in the project study area.**

Map ID	NCWAM Classification	Hydrologic Classification	Hydrologic Unit	NCDWQ Rating	Area (ac.)
WC	Headwater Forest	Riparian	03030002	22	0.03
WD	Headwater Forest	Riparian	03030002	19	0.09
WE	Headwater Forest	Riparian	03030002	13	0.14
WF	Headwater Forest	Riparian	03030002	13	0.04
WG	Headwater Forest	Riparian	03030002	17	0.20
WH	Headwater Forest	Riparian	03030002	27	0.02
WI	Headwater Forest	Riparian	03020201	21	0.01
WJ	Headwater Forest	Riparian	03030002	11	0.02
WK	Headwater Forest	Riparian	03030002	9	0.03
WL	Headwater Forest	Riparian	03030002	38	0.62
WM	Headwater Forest	Riparian	03020201	26	0.06
<b>Total</b>					<b>1.26</b>

It is anticipated that the proposed project (Recommended Alternative 1) will impact 0.25 acre of wetlands and 205 linear feet of streams. Wetlands in the project area are shown on **Figures 4a and 4b**.

### **C. Clean Water Act-Permits**

Based on the preliminary design, wetland impacts are approximately 0.25 acres and stream impacts are approximately 205 linear feet. It is anticipated that a Nationwide 14 Permit may be applicable. The USACE holds the final discretion as to what permit will be required to authorize project construction. A Section 401 Water Quality Certification (WQC) from the NCDWR will also be needed.

### **D. Coastal Area Management Act Areas of Environmental Concern**

The project does not occur in a coastal county and is therefore not under the jurisdiction of the Coastal Area Management Act (CAMA). No permit will be required from the North Carolina Division of Coastal Management for this project.

### **E. Construction Moratoria**

No construction moratoria were identified by the North Carolina Wildlife Resources Commission in a memorandum dated August 2, 2012, and the project does not occur in anadromous fish or Essential Fish Habitat designated by the National Marine Fisheries Service.

### **F. North Carolina River Basin Buffer Rules**

The project occurs in the Neuse River basin and the Jordan Lake watershed of the Cape Fear River basin. Both watersheds are subject to riparian buffer protection regulations designed to reduce pollution within these watersheds. Riparian buffer impacts in the Jordan Lake and Neuse River basins shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233 and 15A NCAC 2B.0267 respectively. New development activities located in the protected 50-foot wide riparian areas within the basins shall be limited to “uses” identified within and constructed in accordance with 15A NCAC 2B.0233 and 2B.0267 respectively. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWR prior to approval of the Water Quality Certification. Buffer impacts of 0.59 acres are anticipated to occur along a pond and stream in the Jordan Lake watershed as a result of this project and may require mitigation.

### **G. Rivers and Harbors Act Section 10 Navigable Waters**

No streams in the project study area have been designated by the USACE as a Navigable Water under Section 10 of the Rivers and Harbor Act.

## H. Wetland and Stream Mitigation

### 1. Avoidance and Minimization of Impacts

The Town of Cary and NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable in developing preliminary design alternatives during project design. This project occurs in two buffered river basins and Design Standards in Sensitive Watersheds will be applied to reduce impacts to the riparian buffers. At this time, no final decisions have been made with regard to the design of the preferred alternative. However it is anticipated that the project will impact 0.25 acre wetlands and 205 linear feet of streams.

### 2. Compensatory Mitigation of Impacts

The Town of Cary and NCDOT will investigate potential on-site stream and wetland mitigation opportunities once a final decision has been rendered on the location of the preferred alternative. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP).

## I. Endangered Species Act Protected Species

The USFWS lists three species (as of January 22, 2014) under federal protection for Wake County: dwarf wedgemussel, Michaux's sumac, and red-cockaded woodpecker. A brief description of each species' habitat requirements follows, along with the Biological Conclusion rendered based on survey results in the project study area. Habitat requirements for each species are based on the current best available information from referenced literature and/or USFWS. Information for these species is contained in **Table 6**.

A US Fish and Wildlife Service proposal for listing the Northern long-eared bat (*Myotis septentrionalis*) as an Endangered species was published in the Federal Register in October 2013. The listing may become effective as soon as April 1, 2015. Furthermore, this species is included in USFWS's current list of protected species for Wake County. The Town of Cary will work with the USFWS to understand how this proposed listing may impact this transportation project. The Town of Cary will coordinate appropriately with the USFWS and USACE regarding the biological conclusion for this species by determining if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary. Potential effects could include potential habitat removed during construction. Based on calculations of terrestrial communities, the total estimated hardwood forest acreage is approximately 1.85 acres in the project study area.

**Table 6. Federally protected species listed for Wake County**

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	No	No Effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	Yes	No Effect
Michaux's sumac	<i>Rhus michauxii</i>	E	Yes	No effect

E – Endangered

**Dwarf wedgemussel (*Alasmidonta heterodon*)**

**USFWS optimal survey window: year round**

Habitat Description: In North Carolina, the dwarf wedge mussel is found in the Neuse and Tar River basins. The dwarf wedgemussel is a generalist in its preference for stream size, substrate, and flow conditions. It is known to inhabit streams less than five meters wide to large rivers over 100 meters wide. It can be found in a variety of substrates from silt depositional areas to clay, sand, pebble, and gravel. It is usually found in hydrologically stable areas and often has a patchy distribution (USFWS 2011).

**Biological Conclusion: No Effect**

Based on a review of GIS and NHP data, it appears that the dwarf wedgemussel does not exist in the project vicinity. The streams on this project are headwater streams and are too small for dwarf wedgemussel. The streams on the western side of the project flow into the Cape Fear River Basin that has no known records of dwarf wedgemussel. The streams on the eastern portion of the project flow into Crabtree Creek and Crabtree Lake, both of which are on NCDWR 2012 list of 303d streams because of biological impairment for benthos, turbidity and PCB's. The Lake Crabtree dam prevents mussels downstream from being reestablished in the project study area. The Cary Waste Water Treatment Plant (WWTP) downstream discharge on Crabtree Creek is likely creating inhospitable conditions for the dwarf wedgemussel or any mussels. The closest record of dwarf wedgemussel in the Neuse River is 27 stream miles downstream, but this record is historic. The closest viable population of dwarf wedgemussel is over 30 miles downstream of the project crossing in Swift Creek. The proposed Carpenter-Fire Station Road realignment and grade separation project will have No Effect on the dwarf wedgemussel.

### **Red-cockaded woodpecker (*Picoides borealis*)**

#### **USFWS optimal survey window: year-round**

Habitat Description: Red-cockaded woodpeckers require open stands of pines with a minimum age of 80 to 120 years provide suitable nesting habitat. Longleaf pines are most commonly used, but other species of southern pine are also acceptable. Dense stands of pines or stands that have a dense hardwood under story are avoided. Foraging habitat consists of pine and pine hardwood stands 30 years or older with foraging preference for pine trees 10 inches (25 cm) or larger in diameter. The woodpecker's diet consists mainly of insects that include ants, beetles, wood-boring insects, and caterpillars.

#### **Biological Conclusion: No Effect**

Small isolated stands of large open loblolly pine were present in the study area but no signs of red-cockaded woodpecker cavity tree construction were present in any of these stands. Furthermore, these stands were quite small (1-2 acres) and surrounded by forests with greater stand density, higher concentration of hardwoods, and/or dense shrub growth making the stand unsuitable for red-cockaded woodpecker foraging or nesting. A field survey of the project study area and a ½ mile wide buffer surrounding the project area was performed in November 2014 for the presence of red-cockaded woodpecker cavity trees. No active or relict red-cockaded woodpecker cavity trees were observed in any of the stands within the project study area or the ½ mile wide buffer. This project will have No Effect on the red-cockaded woodpecker.

### **Michaux's sumac (*Rhus michauxii*)**

#### **USFWS optimal survey window: May - October**

Habitat Description: Michaux's sumac grows in sandy or rocky open woods in association with basic soils. Apparently, this plant survives best in areas where some form of disturbance has provided an open area. Most of the plant's remaining populations are on highway rights-of-way, roadsides, or on the edges of artificially maintained clearings. Other populations are in areas with periodic fires, or on sites undergoing natural succession. One population is situated in a natural opening on the rim of a Carolina bay. Currently, the plant survives in the following North Carolina Counties: Cumberland, Davie, Franklin, Hoke, Moore, Richmond, Scotland, and Wake.

#### **Biological Conclusion: No Effect**

AECOM biologists surveyed the project study area for the presence of Michaux's sumac on October 10, 11, and 18, 2012. Suitable habitat was encountered in the project study area in the form of woodlot edges, agricultural field edges, roadsides and railroad rights-of-way. Sumac species were encountered in suitable habitat during the surveys and include smooth sumac and winged sumac; however, no populations of endangered Michaux's sumac were encountered. This project will have No Effect on Michaux's sumac.

## **J. Bald Eagle and Golden Eagle Protection Act**

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (1 mile plus 660 feet) of the project limits, was performed on July 24, 2012 using 2010 aerial photography. Carpenter Village Lake is located approximately 2,500 feet south southeast of the eastern edge of the project study area and is large enough that bald eagles could forage on it occasionally. High density residential development encompasses much of the perimeter around Carpenter Village Lake and it is unlikely to support nesting eagles and there are no Natural Heritage Program records of bald eagles from this lake. No other water bodies large enough or sufficiently open to be considered potential foraging sources were identified. Since there was only marginal foraging habitat within the review area, a survey of the project study area and the area within 660 feet of the project limits was not conducted. The project is approximately 3.0 miles east of Jordan Lake which has a healthy breeding population of bald eagles. Lake Crabtree, approximately 3.5 miles east of the project, is also suitable habitat for bald eagles and Natural Heritage Program records indicate an eagle was observed at this lake in 2009. Due to the lack of habitat within the project study area and surrounding it, high current levels of development in the vicinity of the project study area, minimal impact anticipated from the project, it has been determined that this project will not affect this species.

## **K. Endangered Species Act Candidate Species**

As of January 22, 2014 the USFWS list no Candidate species for Wake County.

## **L. National Marine Fisheries Service Essential Fish Habitat**

Wake County is not an Essential Fish Habitat identified coastal county and does not border the ocean or estuarine waters; therefore; there will be no EFH impacts associated with this project.

## **M. Cultural Resources**

Section 106 of the National Historic Preservation Act requires that the properties and sites listed in or eligible for listing in the National Register of Historic Places be considered in the planning of federal undertakings. Federal undertakings include not only federally funded projects, but also locally and state funded projects that are federally licensed, permitted, or approved by the federal government. The proposed project is anticipated to require a Corps of Engineers Nationwide 14 permit, so Section 106 process applies. As part of the Section 106 process, it is anticipated that a Memorandum of Agreement (MOA) will be a condition of the permit.

Coastal Carolina Research (CCR), a wholly owned subsidiary of Commonwealth Cultural Resources Group, Inc., completed an architectural review and survey for the proposed Carpenter Fire Station Road realignment and grade separation project in the Town of Cary, Wake County, North Carolina in November 2012. The investigation was conducted according to the Secretary of the Interior's *Standards and Guidelines for Historic Preservation Projects* (Federal Register, Vol. 48, No. 190, September 1983, P. 44716-44742, et seq.), and the current cultural resources report was prepared according to project review guidelines issued by the

State Historic Preservation Office (SHPO). CCR recommended that seven historic resources documented within the Project Study Area but outside the Carpenter Historic District were not eligible for the NRHP. Therefore, it was noted that the proposed project will have no effect beyond those effects that may be determined for the NRHP-listed Carpenter Historic District. The SHPO concurred with this recommendation on February 7, 2013 and a copy of this correspondence is included in **Appendix A**. Also per consultation with the SHPO on August 7, 2012, an archaeological investigation has not been recommended in connection with the proposed project.

A State Historic Preservation Office (SHPO) Effects meeting was held on March 19, 2013 at 10:00 AM at the NCDOT Century Center (Building B) in Raleigh, North Carolina. The purpose of the meeting was to determine effects of three project alternatives through the Carpenter Historic District within the Town of Cary. Alternatives 1A, 1B, and 2 would have a direct effect on a contributing resource of the Carpenter Historic District (CHD) – Saunders House Wellhouse. Alternatives 2 and 3 would have a much greater visual impact as it would go over the railroad line. It appeared that Alternative 1A may have the least adverse effects to the CHD. After discussion of the current project alternatives, the project team consulted on each of the three alternative designs with SHPO. For each alternative the project team proposed an “adverse effect” determination. SHPO concurred with each ‘adverse effect’ recommendation by the project team.

A meeting with the State Historic Preservation Office (SHPO) was held on August 6, 2013 at 10:15 AM at the NCDOT Century Center (Building B) in Raleigh, North Carolina. The purpose of the meeting was to continue discussions of the subject project (Carpenter Fire Station Road Realignment and Grade Separation) and its potential effects to the Carpenter Historic District and potential mitigation relative to the Section 106 process.

Subsequent to meeting with SHPO, NCDOT, and FHWA, the Town of Cary decided not to pursue federal funds on the proposed project. The proposed project will be funded with Town of Cary Community Investment Bonds as well as other Town of Cary funds, and follow the Section 106 process by developing a Memorandum of Agreement (MOA) to address potential effects to the Carpenter Historic District and potential mitigation relative to the Section 106 process. A MOA will be developed with the Corps of Engineers as the lead federal agency (due to the requirement of a Federal Nationwide 14 permit for the proposed project), SHPO, NCDOT, the NC Division of Water Resources (DWR), and others as necessary.

A Pre-Application meeting was held on March 12, 2014 at 1:00 PM at the Cary Town Hall in Cary, N. C. The purpose of the meeting was to bring the Corps of Engineers and DWR up to speed on the project history and to review the first draft of the Memorandum of Agreement (MOA) with USACE, SHPO, DWR, and NCDOT as part of the Section 106 process for the subject project. The Corps of Engineers had general comments on some language in the draft MOA and the SHPO indicated that there were no fatal flaws with the project given Town funding and the Town should proceed with developing more detailed design for more definitive descriptions of what they will do. The final meeting minutes are included in **Appendix A** as a summary of this meeting.

## **N. Section 6(f)**

Section 6(f) of the Land and Water Conservation Act of 1965 prohibits the conversion of any recreation area developed with assistance from the Land and Water Conservation Fund (LWCF) to other uses without the approval of the U.S. Department of the Interior. The Department of the

Interior can only approve such conversions if “the substitution of other recreation properties of at least equal fair market value and or reasonable equivalent usefulness and location” can be ensured. The Natural Heritage Program is the designated administering agency for the LWCF in North Carolina. No properties where Section 6(f) funds have been used will be impacted by the project.

## **O. Social Effects / Community Impacts**

### **1. Demographics/Socio-Economics**

The proposed project is located in western Wake County, within the Carpenter Community in the Town of Cary. The Demographic Study Area (DSA) represents the total land area covered by the smallest number of Block Groups that contain the proposed project. The DSA for the proposed project include Census Tract 534.11, Block Group 1; Census Tract 536.01, Block Group 3; Census Tract 536.02, Block Group 1; and Census Tract 536.03, Block Group 1.

According to the US Census, the population of the DSA increased between 2000 and 2010 from 7,318 people to 12,443 people, although the block group geography and names changed between 2000 and 2010. Similarly, Wake County also experienced an increase in population from 627,846 in 2000 to 900,993 people in 2010. The Town of Cary also grew from 94,536 people in 2000 to 135,234 people in 2010. The US Census Bureau recently reported the Town of Cary as the fastest growing city in North Carolina and the 9th fastest growing city in the country. Of the more than 40,000 residents who moved to the Town of Cary between 2000 and 2010, approximately half relocated to western Cary.

According to the North Carolina Office of State Budget and Management, the population of Wake County is expected to increase to 1,325,950 by July 2030, an average annualized increase of approximately 2.0 percent per year for twenty years. In the Town of Cary 2011/2012 Demographic Analysis, the town’s population is projected to increase to 206,813 in 2030 (2.2 percent per year for twenty years).

The 2010 US Census shows the racial diversity within the DSA as being similarly diverse as that of Wake County. In 2010, the racial populations within the DSA included 62 percent White, 9.7 percent Black or African American, 0.2 percent American Indian and Alaska Native Alone, 25.3 percent Asian, 0.02 percent Native Hawaiian/Pacific Islander, 1.1 percent who identified as being another Race, and 1.6 percent who identified with two or more races. In 2010, the racial populations within Wake County included 68.7 percent White, 20.0 percent Black or African American, 4.6 percent American Indian and Alaska Native Alone, 5.3 percent Asian, 0.04 percent Native Hawaiian/Pacific Islander, 3.9 percent who identified as being another Race, and 1.7 percent who identified with two or more races. Additionally, the 2010 US Census shows the Hispanic or Latino population within the DSA as being significantly lower than that of Wake County (4.6 percent and 9.8 percent, respectively).

The percent of the population of Wake County below poverty is significantly higher than that of the DSA (9.7 percent and 4.0 percent, respectively), while the percentage of the population classified as very poor (under 50 percent of the poverty level) in Wake County is slightly higher than that of the DSA (4.2 percent and 1.9 percent, respectively).

According to the North Carolina Department of Commerce – Division of Employment Security, Wake County experienced a 6.6 percent unemployment rate in August 2013, slightly lower than

the Wake County August 2012 unemployment rate of 8.3 percent. These rates are significantly lower than the August 2013 and August 2012 statewide unemployment rate of 8.3 percent and 9.7 percent, respectively.

The outlook for employment growth within the Capital Area Workforce Development Board (WDB) region from 2008 to 2018 is 16.8 percent (1.6 percent annualized growth rate). According to the Town of Cary Population and Housing Trends Report (Spring 2010), the top five employers in Cary include the following: SAS Institute, Inc.; Verizon Wireless; Affiliated Computer Services; Town of Cary; and American Airlines.

## **2. Neighborhoods/Communities**

The proposed project is located within the Carpenter community in the Town of Cary. According to the *Town of Cary Carpenter Community Plan*, Carpenter has been a distinctive crossroads community since the 19<sup>th</sup> century. The 1996 *Town of Cary Land Use Plan* designated the Carpenter crossroads area as a *Special Opportunity Site*, an area with significant historic structures capable of serving as focal points for creative re-use.

The proposed project will not relocate any homes, businesses, or schools. Some impacts are anticipated to Good Hope Baptist Church's lawn/property for Alternative 1A.

## **3. Environmental Justice**

Under Title VI of the Civil Rights Act of 1964, there are requirements that protect special populations from any type of discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Along with Title VI of the Civil Rights Act of 1964, Executive Order 12898 (Environmental Justice) states that federal programs cannot have a disproportionately high adverse human health and environmental effect on minority and low-income populations. Environmental Justice states the equitable treatment of people of all races, cultures, ages, and incomes during development, implement and enforcement of environmental laws, regulations and policies. Other special populations may include the elderly, children, the disabled, low-income people, and minority groups.

Although the project is not federally funded, potential impacts to special populations identified by the Executive Order were considered in this assessment of impacts. Census data does not indicate a notable presence of populations meeting the criteria for Environmental Justice within the Demographic Study Area (DSA) nor were minority or low income communities observed within the Direct Community Impacts Area (DCIA) during the site visit. Therefore, no notably adverse community impacts are anticipated with this project and no Environmental Justice populations appear to be affected; thus, impacts to minority and low income populations do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community, and no denial of benefit is expected. The project is predominantly on new location, through undeveloped farmland, and no homes or businesses are anticipated to be relocated.

## **4. Recreational Facilities**

Carpenter Ruritan Park is an existing park located just north of the existing Carpenter Fire Station Road. The project will not impact the existing park. The *Carpenter Community Plan* recommends retaining and expanding the existing Carpenter Ruritan Park to create a 'Village

Park', which would connect to a trailhead park that would serve as the junction of several major greenway corridors.

Several planned parks are located within the DCIA. The A.M. Howard Farm Park will be located on the north side of Morrisville-Carpenter Road in the eastern quadrant of the DCIA. The Carpenter Neighborhood Park will be located on the south side of Morrisville-Carpenter Road in the eastern quadrant of the DCIA. The C.F. Ferrell Store Park will be located adjacent to the existing Carpenter Fire Station Road and Morrisville-Carpenter Road intersection. The Cameron Pond Park will be located on the south side of Carpenter Fire Station Road in the western quadrant of the DCIA. The proposed project is not impacting existing or future/planned parks.

According to the *Town of Cary Parks, Recreation, and Cultural Resources (PRCR) Master Plan Recommendations Map*, greenways are proposed along Morrisville-Carpenter Road within the project vicinity, as well as along the proposed and existing Carpenter Fire Station Road.

## 5. Railroad Crossings

A CSX Railroad runs north-south parallel to NC 55 and intersects existing Carpenter-Fire Station Road. Existing at-grade railroad crossings are currently located on both Carpenter Fire Station Road and Morrisville-Carpenter Road. Based on coordination with the NCDOT Rail Division, there are two trains per day that utilize this section of railroad in the project area.

## 6. Utilities

According to January 2012 GIS data from the Town of Cary, water and sewer utility lines run throughout the project study area, including along the existing Carpenter Fire Station Road, NC 55, Saunders Grove Road, and Morrisville-Carpenter Road.

The proposed project is expected to have sewer impacts of approximately 3000 feet within the construction limits and waterline impacts of approximately 6300 feet for Recommended Alternative 1 (formerly Alternative 1A).

## P. Land Use and Zoning

The proposed project study area is a combination of rural residential, agriculture, and encroaching suburban development combined with scattered commercial areas. Surrounding land uses are characterized by residential areas, some commercial and industrial uses, and a designated commercial center. The proposed alignment lies either within the city limits or the unincorporated urban growth area of the Town of Cary. **Figure 5** displays the existing land uses and the proposed alignment.

The *Town of Cary Carpenter Community Plan*, an element of the Land Use Plan, establishes the Town of Cary's official long-range land-use vision and recommendations for the Carpenter Community. The Carpenter planning area is bordered roughly by four major thoroughfares: McCrimmon Parkway to the north, Morrisville Parkway to the south, NC 55 to the west, and Louis Stephens Drive to the east. According to the map included in the plan, the land use for the area around the proposed realigned portion of Carpenter Fire Station Road is 'Rural Village'. This recommended land use includes a mix of retail, services, office, and housing in a contextually sensitive design that complements and expands on the historic Carpenter

Crossroads community. The objective of the Rural Village designation is to preserve the existing, contributing buildings of the Carpenter Historic District while integrating a limited number of new structures.

The *Carpenter Community Plan* recommends that Good Hope Church Road, Carpenter Upchurch Road, Carpenter Fire Station Road, and Morrisville Carpenter Road be constructed without curb and gutter west of Louis Stephens Drive, and potentially without urban street lights.

The western portion of the Carpenter National Register Historic District (NRHD) falls within the project study area. The NRHD is approximately 126 acres and the boundary encompasses the commercial core area at the intersection of Carpenter Upchurch Road and Morrisville Carpenter Road. It extends eastward to the C.F. Ferrell House and Farmstead and includes several farmhouses along the north side of Morrisville Carpenter Road.

The NRHD was listed on the National Register of Historic Places (NRHP) in 2000 as an intact example of a late nineteenth- to early twentieth- century farm crossroads district with significance under architecture, agriculture, and community planning. The 1996 *Town of Cary Land Use Plan* designated the Carpenter crossroads area as a special opportunity site, an area with significant historic structures capable of serving as focal points for creative re-use. According to the *Carpenter Community Plan* map, the land use for the area around the proposed realigned portion of Carpenter Fire Station Road is 'Rural Village'. This designation is intended to be the focus of non-residential land uses within the *Carpenter Community Plan*.

The *Carpenter Community Plan* also proposes a 100-foot wildflower buffer along Morrisville Carpenter Road and Good Hope Church Road. This buffer is intended to create a larger road setback and a more open visual experience. Multi-use paths and greenways are proposed to be located within this buffer. It is also recommended that Carpenter Ruritan Park, an existing park north of the existing Carpenter Fire Station Road, be retained and expanded to create a 'Village Park'.

The *Town of Cary Parks, Recreation, and Cultural Resources (PRCR) Master Plan* is intended to help guide the development of the parks, recreation, and cultural resources system in the Town of Cary for the next five to ten years. This plan update incorporates input from a statistically-valid survey, focus group meetings, a Greenway Summit meeting with adjacent jurisdictions, trail user counts, and close coordination with the Cary Greenway Committee. The PRCR plan was adopted by Town Council in November 2012.

According to the *PRCR Master Plan Recommendations Map*, greenways are proposed along Morrisville Carpenter Road within the project vicinity, as well as along the proposed and existing Carpenter Fire Station Road. The proposed Kit Creek Greenway is located east of the Good Hope Church Road / Morrisville Carpenter Road intersection and runs north to south through the project study area. This greenway is part of the Research Triangle Park to Middle Creek Greenway corridor.

## **Q. Farmland**

The project is located primarily within the city limits or the unincorporated urban growth area of the Town of Cary. Because the project lies within areas that are designated for future

development, and the project is not federally funded, the provisions of the Farmland Protection Policy Act do not apply.

Phillips Family Farm is a farm that offers seasonal activities to its visitors. The farm produces hay, straw, corn, and strawberry crops at various seasons throughout the year and sells Christmas trees each December. The farm's main attractions are the family Corn Maze and Haunted Farm in the Fall. There is an existing pond used for irrigation on the Phillips Family Farm and it is anticipated that a portion of this pond would be partially taken but that most of the pond would remain intact for irrigation of the farm.

## **R. Indirect and Cumulative Effects**

The analysis of the potential indirect and cumulative effects of this project suggests that development activities in the area are not anticipated to be altered by project construction. Analysis of State and local development regulations suggest that those regulations currently in place will mitigate any potential impacts of the new development related to the project. Residential and commercial development in the area outside of the DCIA is expected to increase with the completion of the proposed project.

Comprehensive planning efforts by the Town over the past decade have put the policies and procedures in place that show the vision and intent to develop in western Cary, to provide the adequate infrastructure to support this growth, and to protect the natural and human environment during the growth.

In order to address indirect and cumulative effects for this project as well as the overall effects of all infrastructure improvements and planned land use changes, the Town of Cary has developed a Secondary and Cumulative Impacts (SCI) Master Mitigation Plan in cooperation with the N.C. Department of Environment and Natural Resources (NC DENR). The purpose of the SCI Master Mitigation Plan is to provide a holistic review of the environmental impacts associated with planned land use changes and infrastructure projects deemed necessary by the Town Council. The SCI Master Mitigation Plan identifies the environmental impacts associated with the Town's plans for creating, expanding, and/or changing water, sewer, and transportation facilities and the programs in place that mitigate identified impacts.

The Town of Cary entered into a Memorandum of Agreement (MOA) with NCDENR, effective July 26, 2005, about the use of the documents. The MOA describes the background of the SCI Master Mitigation Plan process, reporting requirements, period of applicability for the Plan (10 years), and the circumstances under which it must be updated earlier than 10 years. Amendment No. 1 to the Memorandum of Agreement clarifies reporting dates. Every two years, the Town of Cary submits an update to NC DENR for its SCI Master Mitigation Plan.

These Biennial Reports document any changes made by the Town during the previous two years and whether those changes significantly change the impacts of the planned growth and development in the planning area.

## **S. Flood Hazard Evaluation**

Wake County is a participant in the National Flood Insurance Regular Program. The Town of Cary will coordinate with the Federal Emergency Management agency and local authorities to

ensure compliance with applicable floodplain ordinances. The project does not involve any construction within a designated 100-year floodplain.

## T. Traffic Noise Analysis

Traffic noise analysis was conducted to determine the effect the proposed project will have on noise levels in the immediate project area. This analysis includes an inventory of existing noise-sensitive land uses and a comparison of the predicted noise levels and existing noise levels to determine if traffic noise impacts would occur as a result of the project.

The level of highway traffic noise depends on three things: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of the traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater numbers of trucks. Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The loudness of traffic noise can also be increased by defective mufflers or other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines will also increase traffic noise levels. In addition, there are other, more complicated factors that affect the loudness of traffic noise. For example, as a person moves away from a highway, traffic noise levels are reduced by distance, terrain, vegetation, and natural and manmade obstacles. Traffic noise is not usually a serious problem for people who live more than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads.

Although the proposed project is not funded by the Federal Highway Administration or the North Carolina Department of Transportation, Federal Highway Administration Noise Abatement Criteria and NCDOT's Noise Abatement Policy (July 13, 2011) were used to assess whether or not residences and / or businesses will be impacted by traffic noise. According to those criteria traffic noise impacts occur if the predicted design year noise levels approach or exceed levels shown for each land use activity category in **Table 7**. The North Carolina Department of Transportation defines "approach" as within 1 dBA of the Leq(h) value for the activity category.

Traffic noise impacts also occur when predicted noise levels substantially exceed existing noise levels. The North Carolina Department of Transportation defines substantial noise increases as shown in **Table 8**.

The Federal Highway Administration's Traffic Noise Model (TNM 2.5) was used in conjunction with existing and 2035 traffic data to determine existing and future noise levels at homes along the project. Ambient noise levels were observed at several locations within the project vicinity.

Existing noise measurements were taken along the south side of Carpenter Fire Station Road, west of NC 55, just east of the Crosspointe Church, approximately 50 and 100 feet from the existing edge of pavement. Ambient noise levels ranged from 60-64 dBA.

Measurements were taken north of Morrisville Carpenter Road, east of NC 55, at Carpenter Park within the historic area, approximately 50 and 100 feet from the existing edge of pavement. Ambient noise level ranged from 59-63 dBA.

**Table 7. Noise Abatement Criteria**

Hourly A-Weighted Sound Level in Decibels (dBA)			
Activity Category	Activity Criteria Leq(h)	Evaluation Location	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	Residential
C	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditorium, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	Undeveloped lands that are not permitted.

**Table 8. Defined Substantial Noise Increase**

Existing Leq(h)	Increase
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

Representative of residential areas within the vicinity, a measurement was taken just north of the Carpenter Village Subdivision, approximately 425 feet south of Morrisville Carpenter Road, between Good Hope Church Road and Louis Stephens Drive. The noise level was 53 dBA.

TNM 2.5 was used to determine the existing and future noise levels at noise receptors surrounding the proposed project. All of the noise receptors fall under activity category B. For Alternative 1A (Recommended Alternative 1), there are six noise receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria (NAC). There are five anticipated future noise impacts for the proposed project under Alternative 1B (Alternative 2). All of the noise receptors for Alternatives 1A and 1B were not considered for substantial noise level increase impacts.

The majority of the adjacent developed land is designated for a mix of retail, services, office, and housing in a contextually sensitive design that complements and expands on the historic Carpenter Crossroads community. In order to assist in the proper planning of this future development, so new development is not built where they may be impacted by traffic noise, efforts were made to establish the location of the 66 dBA noise contour. However, due to the relatively low traffic volumes and speeds (45 mph), the proposed roadway is not anticipated to create noise levels of 66 dBA or more outside the proposed 50 to 80-foot right-of-way.

Information on noise analysis for this project can be viewed at the Town of Cary, Facilities Design and Transportation Services, Cary Town Hall, 316 North Academy Street, Cary, NC 27513.

## **U. Air Quality**

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving ambient air quality.

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and prevailing meteorological conditions. The major factors affecting pollutant dispersion are wind speed, and direction, atmospheric stability, temperature, the presence or absence of inversions and the topographical and geographical features of the regions.

### **1. Project Air Quality Effects and Transportation Conformity**

The project is located in Wake County, which complies with the National Ambient Air Quality Standards (NAAQS). Wake County is within an area identified as the Southern Coastal Plain Intrastate Air Quality Control Region (as defined in section 302(f) of the Clean Air Act, 42 U.S.C. 1857h(f)).

#### **a) Ozone**

The project is located in Wake County, which is within the Raleigh-Durham maintenance area for carbon monoxide (CO) as defined by the EPA. The Raleigh Durham area was redesignated for CO on September 18, 1995 and due to improved monitoring data was placed under a limited maintenance plan (conformity is required without a regional emissions analysis) on July 22, 2013. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Wake County. The Capital Area Metropolitan Planning Organization 2040 Long Range Transportation Plan (LRTP) and the 2012-2018 Transportation Improvement Program (TIP) conform to the intent of the SIP. The USDOT made

a conformity determination on the LRTP on April 2, 2013 and the TIP on April 2, 2013. The current conformity determination is consistent with the final conformity rule found in 40 CFR

**b) Carbon Monoxide**

The proposed project lies within a maintenance area for Carbon Monoxide (CO). Air quality impacts are not anticipated since proposed project developments will improve traffic operations. Therefore, a CO hot-spot analysis is not required according to FHWA guidelines.

**c) Fine Particulate Matter**

The proposed project lies within an attainment area for PM2.5. A PM2.5 hot-spot analysis is only required if the proposed project was in a non-attainment area for PM2.5. As a result, a PM2.5 hot-spot analysis is not required according to FHWA guidelines.

This project will not add substantial new capacity or create any adverse effects on the air quality of this attainment area, and therefore, 40 CFR Parts 51 and 94 are not applicable.

**2. Mobile Source Air Toxics**

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 U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA 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/iris/>). In addition, EPA identified seven 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 EPA rules. The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines.

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).

**a) Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis**

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 U.S. Environmental Protection Agency (EPA) 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 EPA 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" (EPA, <http://www.epa.gov/iris/>). 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>).

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.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

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 EPA (<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 EPA 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 EPA to determine an "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 U.S. Court of Appeals for the District of Columbia Circuit upheld EPA'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 deemed 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.

What we know about mobile source air toxics is still evolving. As the science progresses FHWA will continue to revise and update this guidance. FHWA is working with Stakeholders, EPA and others to better understand the strengths and weaknesses of developing analysis tools and the applicability on the project level decision documentation process.

Information on air quality analysis for this project can be viewed at the Town of Cary, Facilities Design and Transportation Services, Cary Town Hall, 316 North Academy Street, Cary, NC 27513.

### **3. Construction Air Quality Effects**

Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads, and smoke from open burning. These impacts will be minimized by adherence to all state and local regulations. Construction equipment and associated work practices and procedures will have to meet the NCDOT Standard Specifications and the Division of Air Quality's emissions standards that govern activities such as open burning.

## **V. Hazardous Materials Evaluation**

As a part of preparation of this Environmental Assessment, a government database search for potential hazardous materials sites was conducted via a GIS based commercial service (EDR® (Environmental Data Resources, Inc.) has represented that its procedures conform to, or exceed, the requirements of ASTM Standard Practice E1527-05).

This assessment has revealed the following "recognized environmental conditions" (as that term is defined in ASTM Standard Practice E1527-00) in connection with the study area and shown on **Figures 4a and 4b**. By definition, "recognized environmental conditions" indicate the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a

release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.

**Edwards Grocery, 4307 NC Highway 55** - is located at the southwest corner of the intersection of NC Highway 55 and Carpenter Fire Station Road. The property is currently abandoned (building is unoccupied) but was once an active service station/convenience store. According to the EDR<sup>®</sup> records, groundwater and soil contamination was detected on the property in 1995. The owner/operator of the tanks at that time was the Erwin Oil Company. Based on the information in the EDR<sup>®</sup> records and that no site closure information is indicated, it is likely that soil and groundwater contamination is still present at this site.

**Joel Carpenter Texaco, 4101 NC Highway 55**– This is an active gas station (Marathon station) located on the northwest corner of the intersection of NC 55 and Carpenter Fire Station Road. Groundwater contamination was reported at this site in 1990. According to the records, a kerosene tank tightness test failed and soil samples showed signs of contamination. A Notice of Violation (NOV) was issued in 1991. No additional information is available. The incident has not been closed in the state records. Four USTs are currently active on the property, two 10,000-gallon gasoline tanks, a 20,000-gallon diesel fuel and a 2,000-gallon kerosene tank.

Because this is an active service station it is likely that any adverse environmental impacts from the former release have been addressed by the past or current owners and operators of this site. While the existing tanks are considered a “recognized environmental condition”, the fact that they are currently registered and operating means that they pose little environmental risk to the study area as a release should be detected and clean up would have to be performed by the current owner/operator.

**Cary Fire Station 7, 6900 Carpenter Fire Station Road**– This property is an active fire station. A 2,000-gallon diesel fuel UST was installed in 2006. While the existing tank is considered a “recognized environmental condition”, the fact that it is currently registered and operating means that it poses little environmental risk to the study area as a release should be detected and clean up would have to be performed by the current owner/operator.

## **V. Comments and Coordination**

### **A. Agency Coordination and Comments Received**

Federal, State, and local agencies were consulted during the preparation of this State Environmental Assessment / Finding of No Significant Impact. Comments from the following agencies were received and were considered during preparation of this assessment:

1. U.S. Fish and Wildlife Service
2. NC Natural Heritage Program
3. U.S. Environmental Protection Agency

4. NC Department of Transportation
5. NC Department of Administration
6. NC State Environmental Review Clearinghouse
7. NC Wildlife Resources Commission
8. NC Division of Water Resources (formerly NC Division of Water Quality)
9. NC Department of Agriculture and Consumer Services
10. NC Division of Emergency Management
11. State Historic Preservation Office (SHPO)
12. U.S. Army Corps of Engineers
13. NC Division of Parks and Recreation
14. Capital Area Preservation
15. Federal Highway Administration (FHWA)

Copies of these agency comments are in **Appendix A**.

The NC Division of Water Quality had several project specific comments in a letter dated July 27, 2012 and they were as follows:

1. Kit Creek is class WS-V; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Kit Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. Crabtree Creek is class C; NSW; 303(d) impaired waters of the State and NCDWQ is very concerned with sediment and erosion control impacts that could result from this project. NCDWQ recommends that the most protective sediment and erosion control BMPs be implemented in accordance with Design Standards in Sensitive Watersheds (15A NCAC 04B 0124) to reduce the risk of further impairment to Crabtree Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ *Stormwater Best Management Practices*.
3. Kit Creek is within the Jordan Lake Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0267. Crabtree Creek is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233. New development activities located in the protect 50-foot wide riparian areas with the basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B.0267 and 2B.0233, respectively. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

The Town of Cary will provide storm water runoff treatment on this proposed project through best management practices as detailed in the latest NCDWQ *Stormwater Best Management Practices*. Section IV.F. of this document covers the NC River Basin Buffer Rules.

A field meeting was held with the U.S. Army Corps of Engineers on August 27, 2013 to discuss the jurisdictional status of wetlands and streams in the project area. Based on the field meeting, the Corps of Engineers provided a Preliminary Jurisdictional Determination, dated November 19, 2013, indicating which waters in the project area are subject to Section 404 of the Clean Water Act.

Copies of the Corps of Engineers' Preliminary Jurisdictional Determinations are included in **Appendix B**.

## **B. Public Meetings**

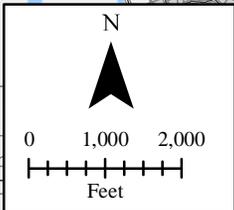
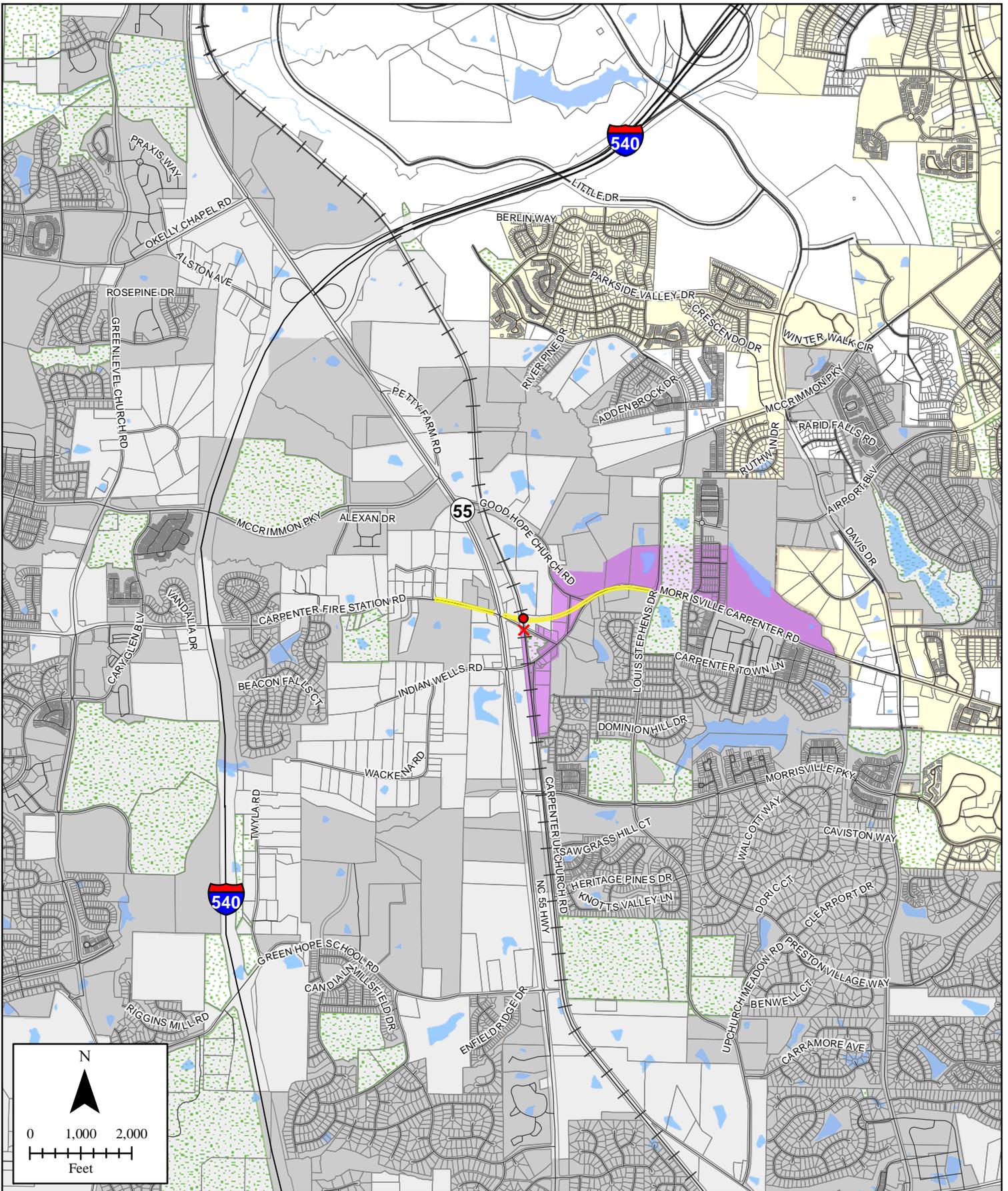
Two public meetings were held to solicit public input on the proposed project. The first public meeting was held on Tuesday, October 16, 2012, from 5:00 PM to 7:00 PM at the Good Hope Baptist Church, located at 6628 Good Hope Church Road. The date and time of the meeting were posted on the Town of Cary's web page, and flyers were distributed to homes and churches in the project area. A copy of the flyer distributed for the meeting is included in **Appendix C**. Information presented at the meeting included displays showing the proposed typical roadway cross-section and project study area. A handout was distributed to meeting attendees that included a project description, contact information, a vicinity map, and a comment sheet. Thirty-one citizens attended the meeting and five written comments were received (one from the Phillips family). Three of the five comments were positive in favor of the project and two of the three preferred that the proposed project go under the CSX Railroad line. The two of the remaining five comments did not state any preference, but noted concerns. One comment expressed concern about future access to Good Hope Baptist Church from Carpenter Fire Station Road.

The second public meeting was held on March 24, 2014 from 5:00 PM to 7:00 PM. The date and time of the meeting were posted on the Town of Cary's webpage, and flyers were distributed. In addition, the meeting was advertised in *The Cary News* on Tuesday, March 18, and Sunday, March 23 in the Metro Section. Information presented at the meeting included displays showing the proposed typical roadway cross-section and preliminary designs of Alternatives 1 and 2 (formerly Alternatives 1A and 1B). A handout was distributed to meeting attendees that included a project description, contact information, a vicinity map, and a comment sheet. Approximately 60 citizens attended the meeting and seven written comments were received. Four comments were positive in favor of the project and did not express a preference for either alternative, two comments expressed concern about future access to Good Hope Baptist Church, and one comment requested the Town to consider a greenway crossing across Morrisville Carpenter Road and a roundabout at the intersection of Good Hope Church Road and Morrisville Carpenter Road. The second public meeting took the place of a design public hearing during the project's development.

## **VI. Basis for State Environmental Assessment / Finding of No Significant Impact**

Based upon a study of the impacts of the proposed project as documented in this State Environmental Assessment and comments received from federal, state, and local agencies, it is the finding of the Town of Cary that this project will not have a significant impact upon the quality of the human or natural environment. With proposed mitigation for impacts to the Carpenter Historic District, the project is not anticipated to have any significant impacts to natural, social, ecological, cultural, or scenic resources. The proposed project is consistent with local plans and will not disrupt any communities. The project has been extensively coordinated with state and local agencies. Therefore, neither an Environmental Impact Statement nor further environmental analysis will be required.

# FIGURES



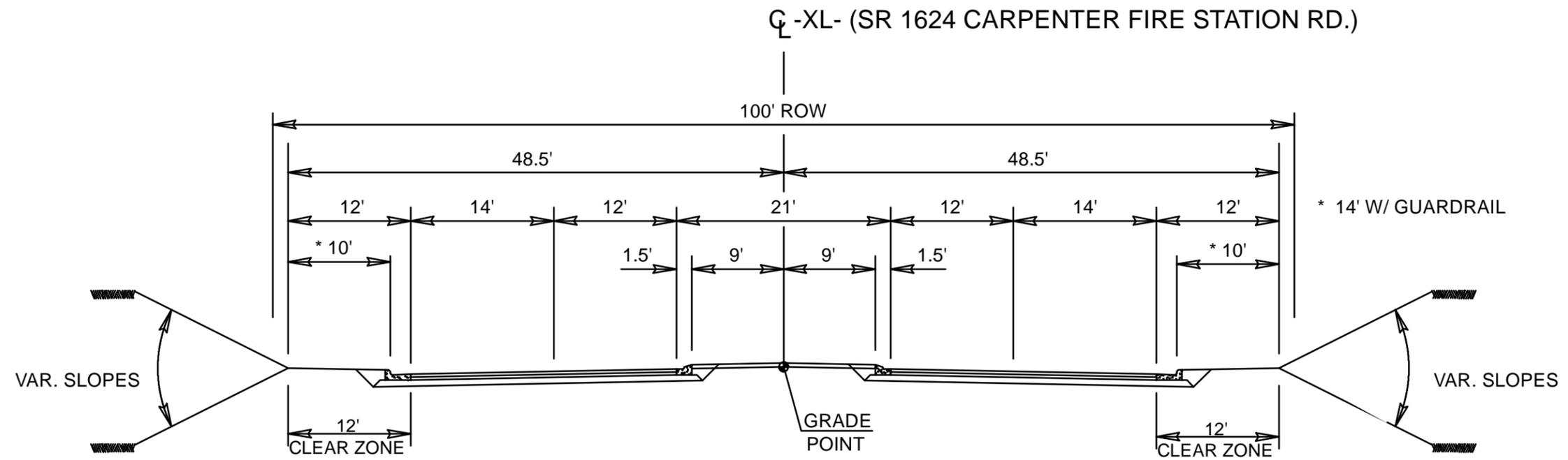
**LEGEND**

- Proposed Project
- Public Parks or Open Space
- Carpenter Historic District
- Cary Town Limits
- Cary ETJ
- Morrisville Town Limits
- Lakes/Ponds
- X Proposed closure of at-grade crossing
- Proposed grade separated crossing

**Vicinity Map**  
 Carpenter Fire Station Road  
 Realignment and Grade Separation  
 Town of Cary, Wake County

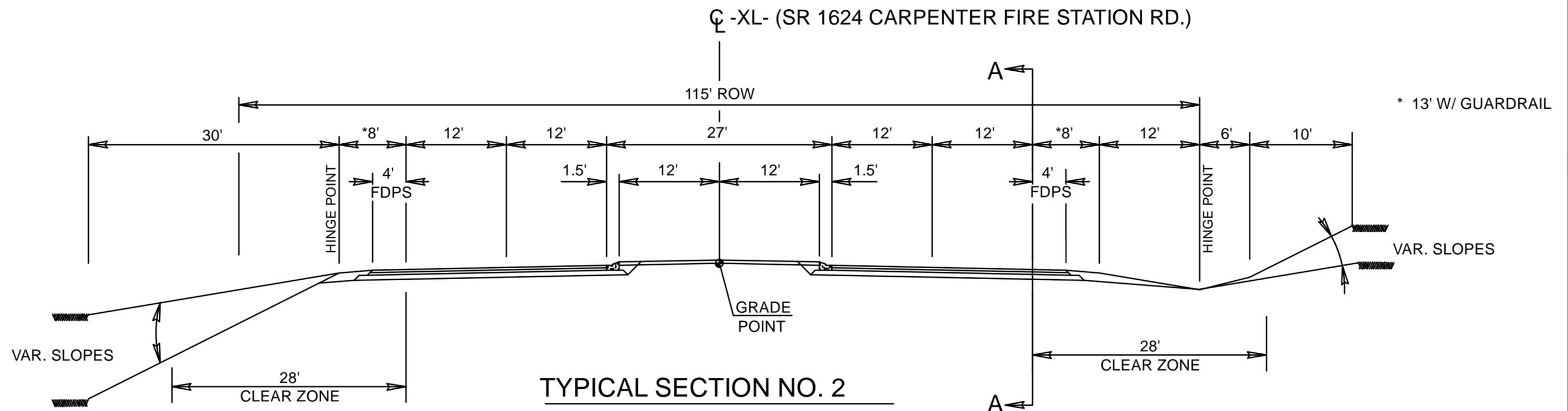
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**Figure 1** **AECOM**



**TYPICAL SECTION NO. 1**

FROM HOWARD RD. TO NC 55



**TYPICAL SECTION NO. 2**

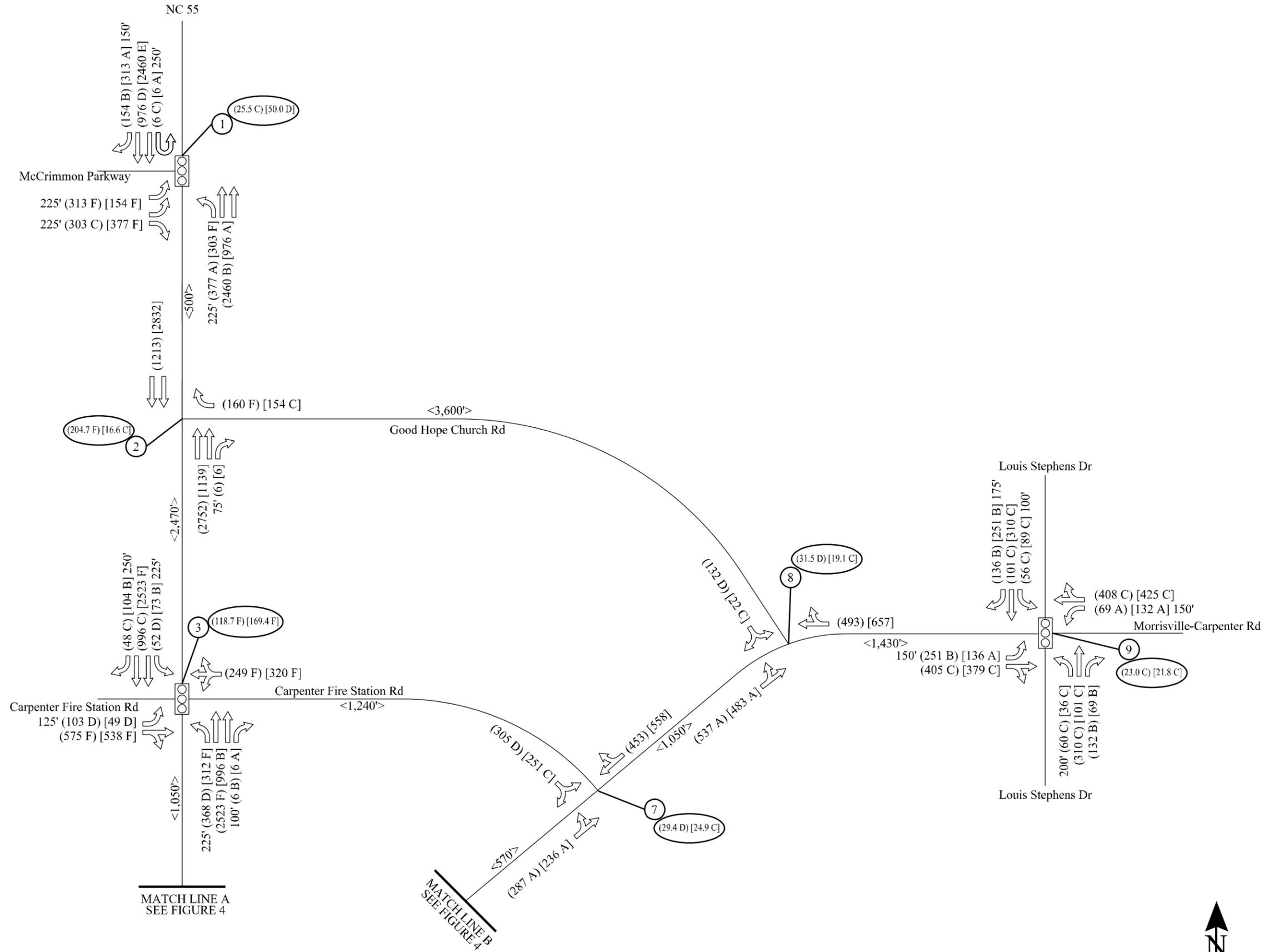
FROM NC 55 EAST TO THE END OF THE PROJECT

**Typical Sections**  
Carpenter Fire Station Road  
Realignment and Grade Separation

Town of Cary, Wake County

Figure 2





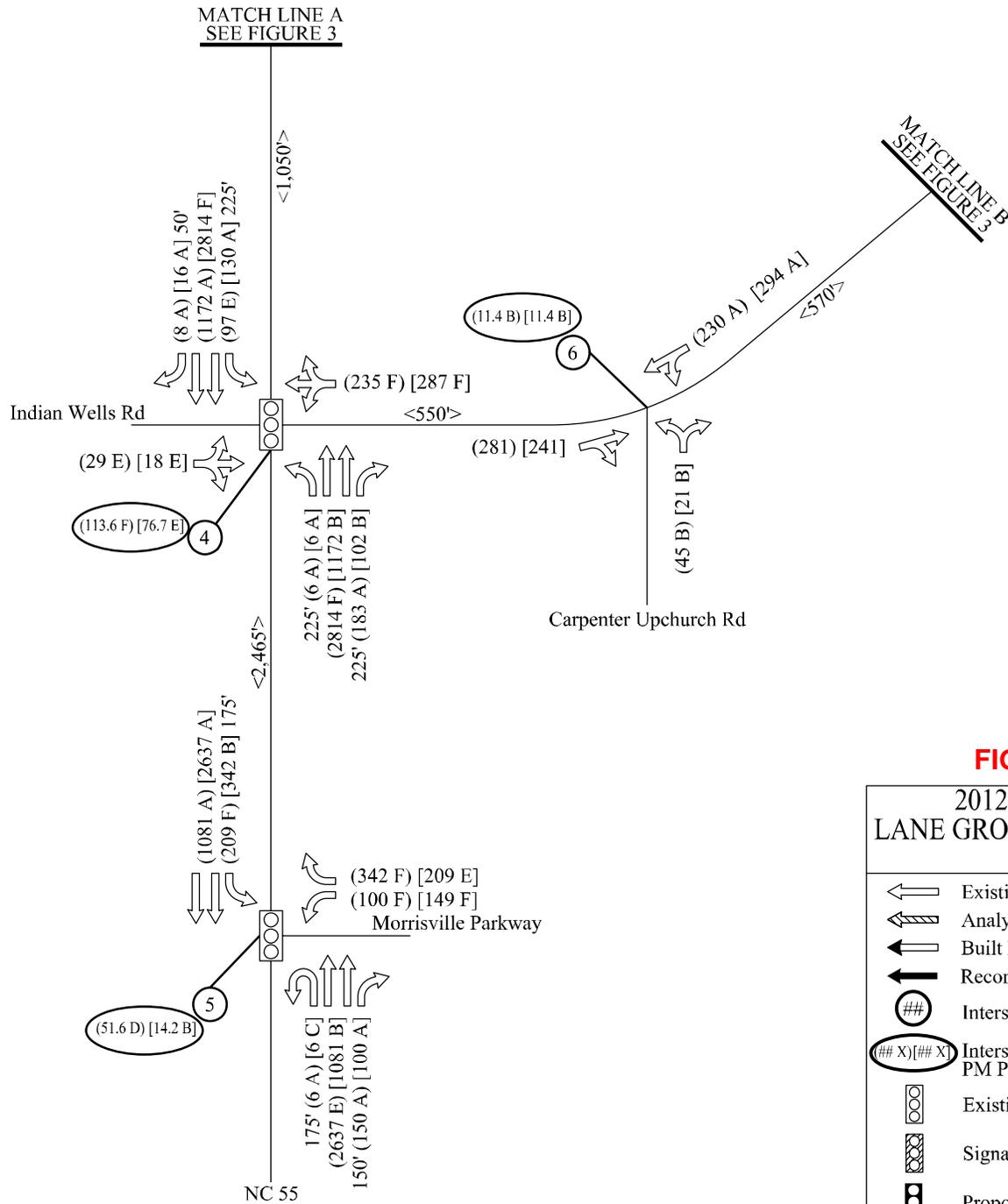
**FIGURE 3A**  
**2012 NO-BUILD**  
**LANE GROUP FLOWS & LOS**

	Existing Laneage
	Analyzed Laneage
	Built By Others
	Recommended Laneage
	Intersection Number
	Intersection AM Peak and PM Peak Delay and LOS
	Existing Signal
	Signal Proposed By Others
	Proposed Signal
	Existing Storage
	Proposed Storage
	Distance Between Intersections
	AM Peak Lane Group Flow and LOS
	PM Peak Lane Group Flow and LOS



Drawing Not to Scale





**FIGURE 3B**

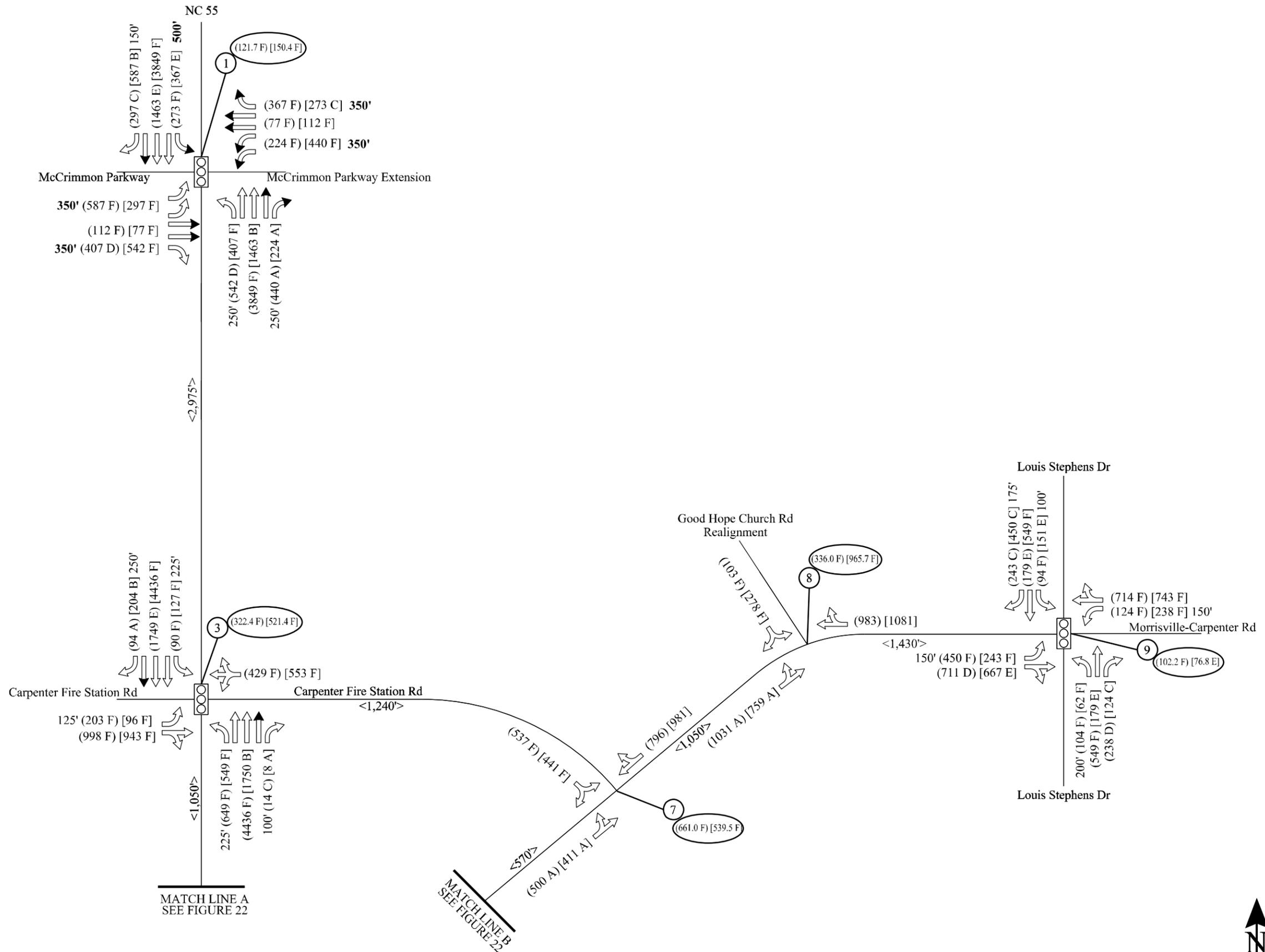
**2012 NO-BUILD  
LANE GROUP FLOWS & LOS**

- Existing Laneage
- Analyzed Laneage
- Built By Others
- Recommended Laneage
- Intersection Number
- Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Signal Proposed By Others
- Proposed Signal
- #### Existing Storage
- #### Proposed Storage
- <####> Distance Between Intersections
- (## X) AM Peak Lane Group Flow and LOS
- [## X] PM Peak Lane Group Flow and LOS



Drawing Not to Scale





**FIGURE 3c**

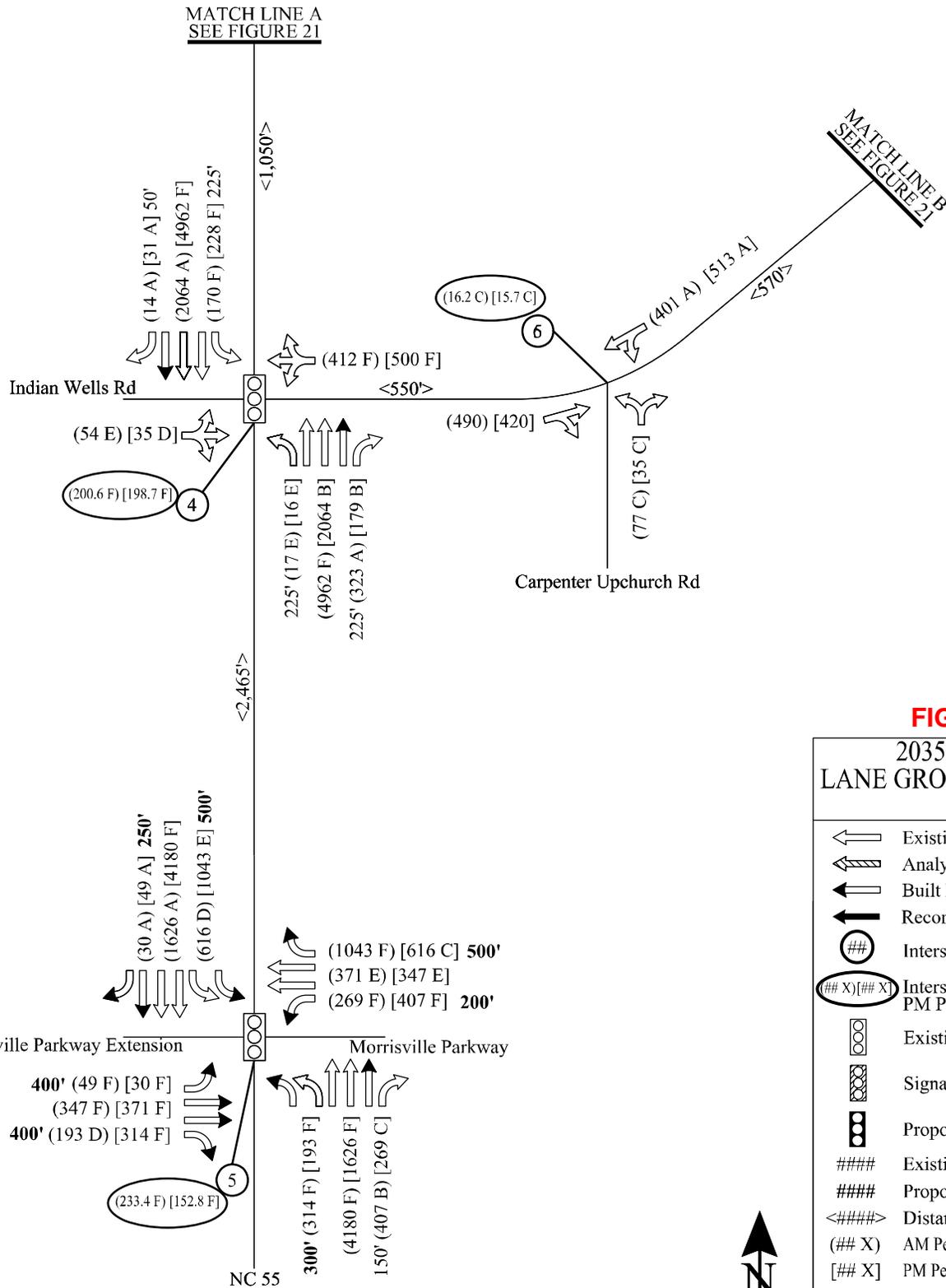
**2035 NO-BUILD  
LANE GROUP FLOWS & LOS**

- Existing Laneage
- Analyzed Laneage
- Built By Others
- Recommended Laneage
- Intersection Number
- Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Signal Proposed By Others
- Proposed Signal
- Existing Storage
- Proposed Storage
- Distance Between Intersections
- AM Peak Lane Group Flow and LOS
- PM Peak Lane Group Flow and LOS



Drawing Not to Scale





**FIGURE 3d**

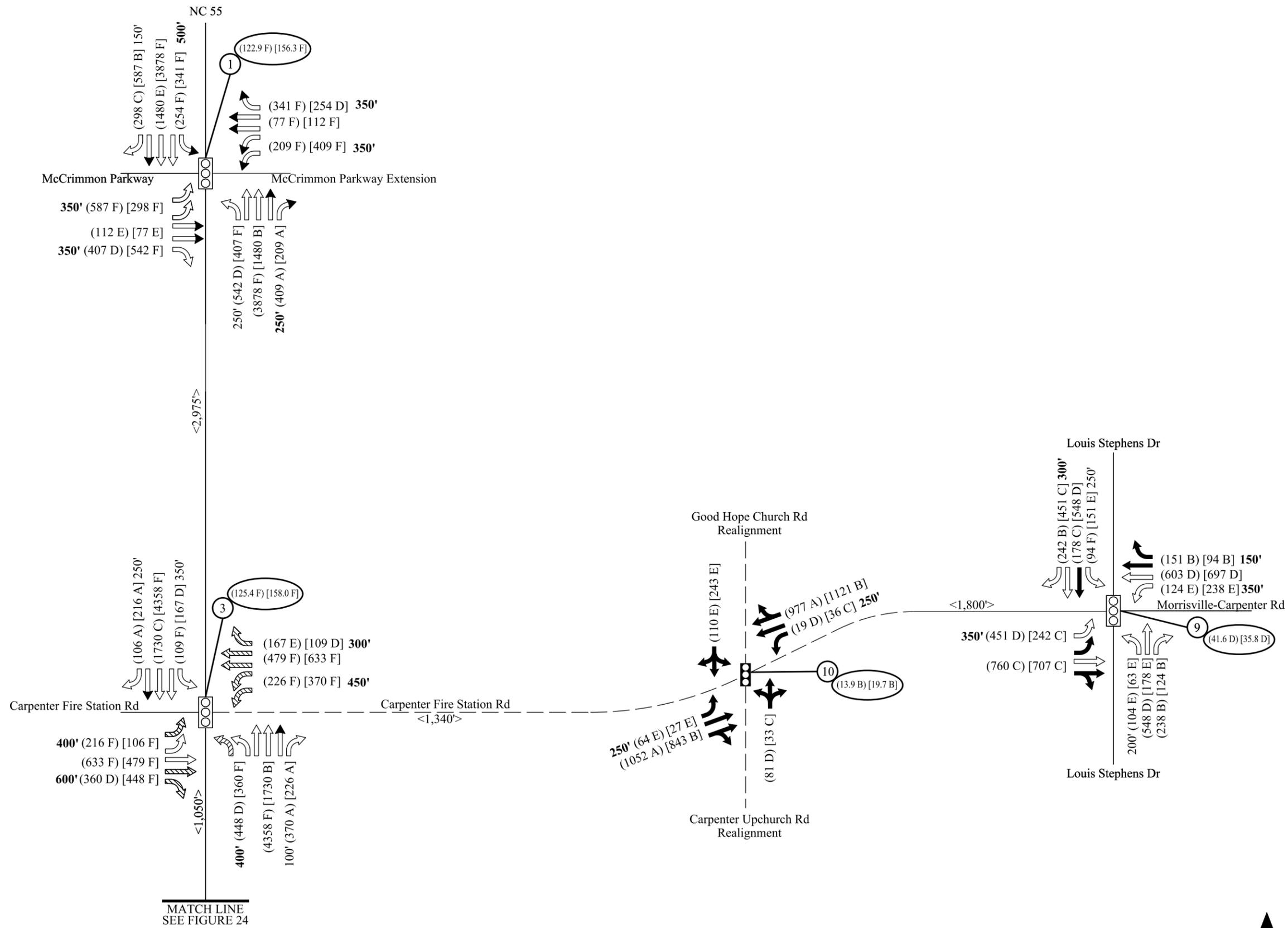
**2035 NO-BUILD  
LANE GROUP FLOWS & LOS**

- Existing Laneage
- Analyzed Laneage
- Built By Others
- Recommended Laneage
- Intersection Number
- Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Signal Proposed By Others
- Proposed Signal
- #### Existing Storage
- #### Proposed Storage
- <####> Distance Between Intersections
- (## X) AM Peak Lane Group Flow and LOS
- [## X] PM Peak Lane Group Flow and LOS



Drawing Not to Scale





**FIGURE 3e**

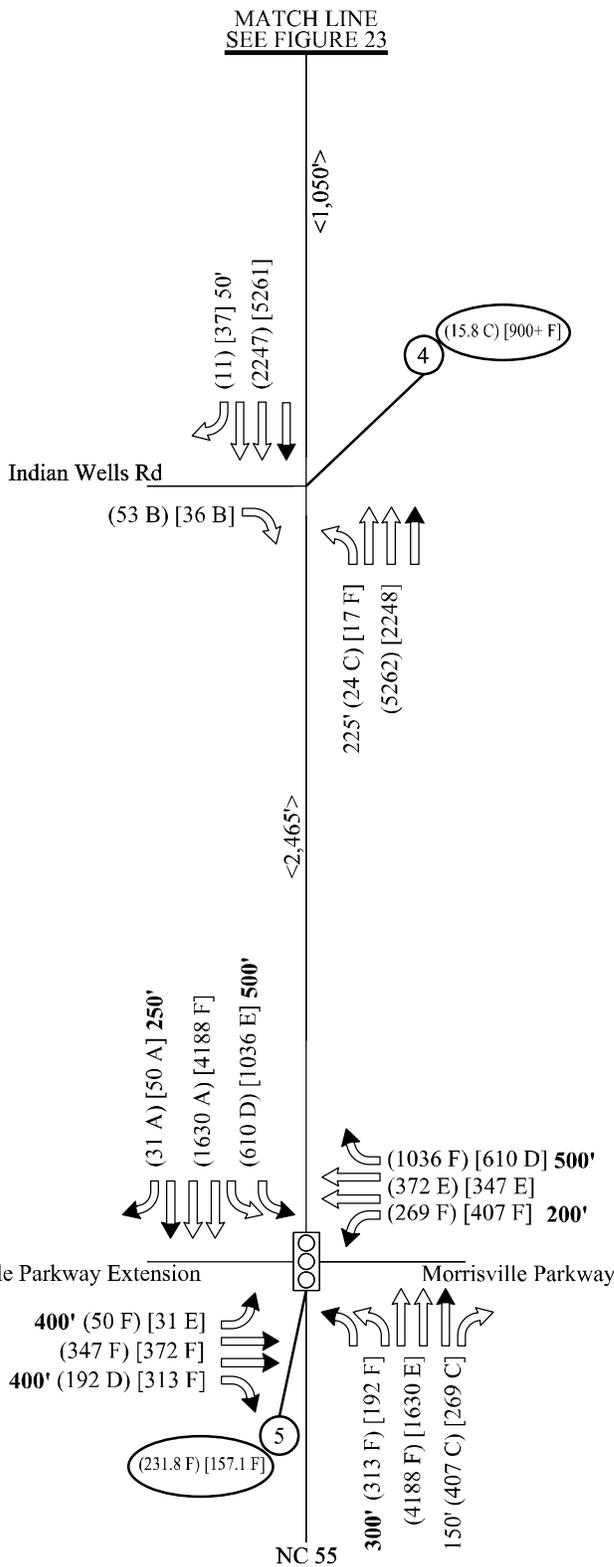
**2035 BUILD  
LANE GROUP FLOWS & LOS**

- Existing Laneage
- Analyzed Laneage
- Built By Others
- Recommended Laneage
- Intersection Number
- Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Signal Proposed By Others
- Proposed Signal
- Existing Storage
- Proposed Storage
- Distance Between Intersections
- AM Peak Lane Group Flow and LOS
- PM Peak Lane Group Flow and LOS



Drawing Not to Scale





**FIGURE 3f**

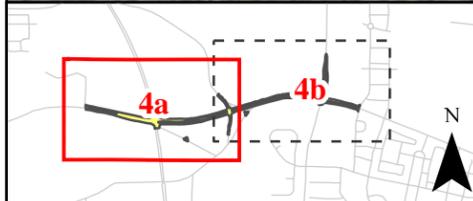
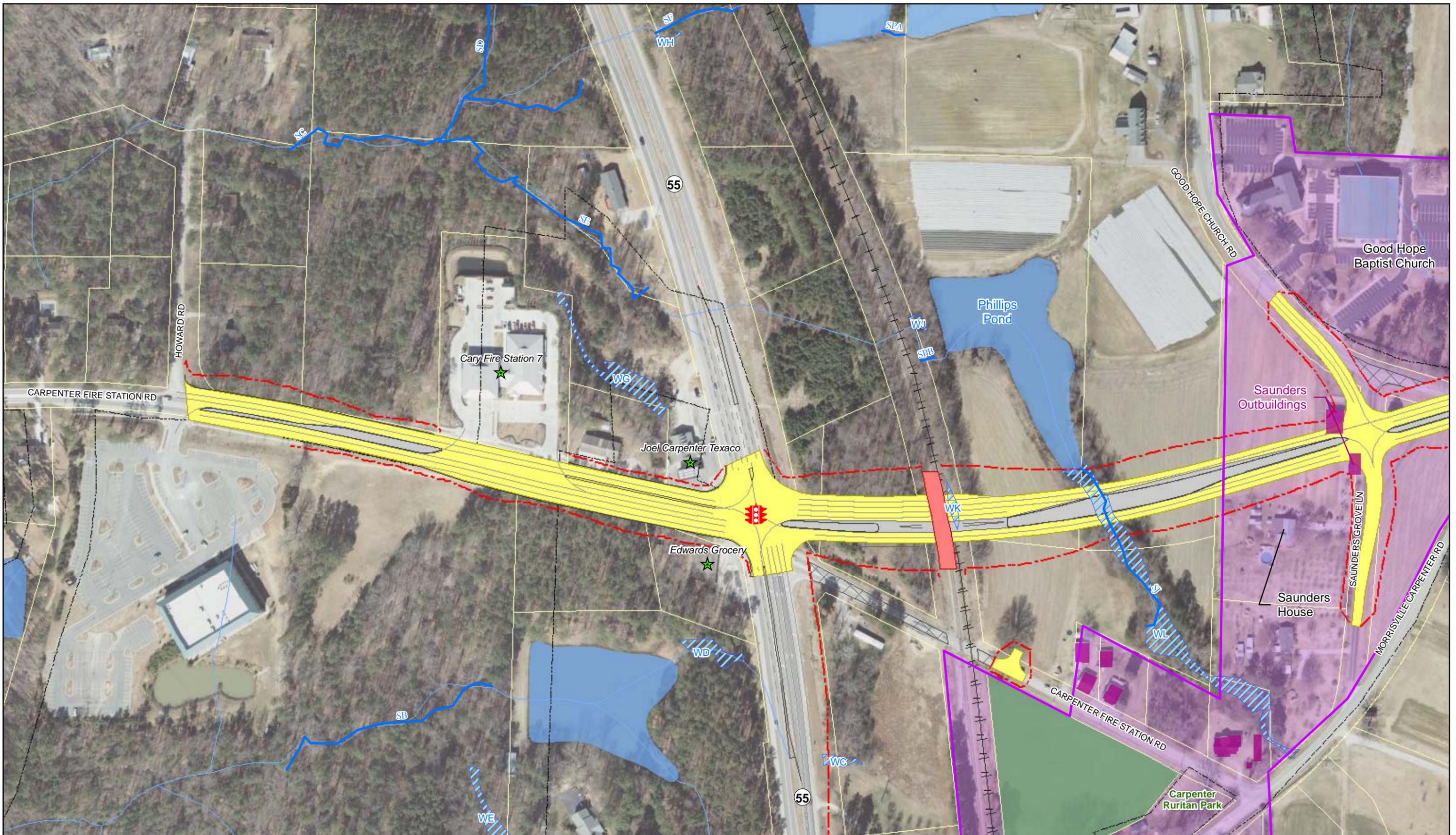
**2035 BUILD  
LANE GROUP FLOWS & LOS**

- Existing Laneage
- Analyzed Laneage
- Built By Others
- Recommended Laneage
- Intersection Number
- Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Signal Proposed By Others
- Proposed Signal
- ##### Existing Storage
- ##### Proposed Storage
- <#####> Distance Between Intersections
- (## X) AM Peak Lane Group Flow and LOS
- [## X] PM Peak Lane Group Flow and LOS

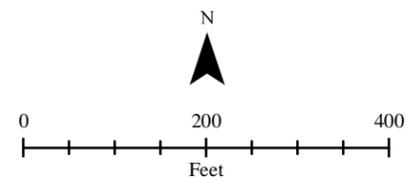


Drawing Not to Scale



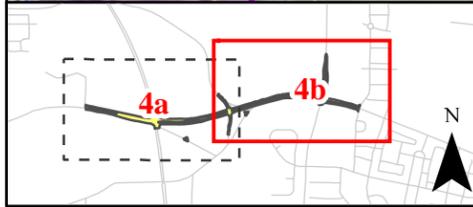
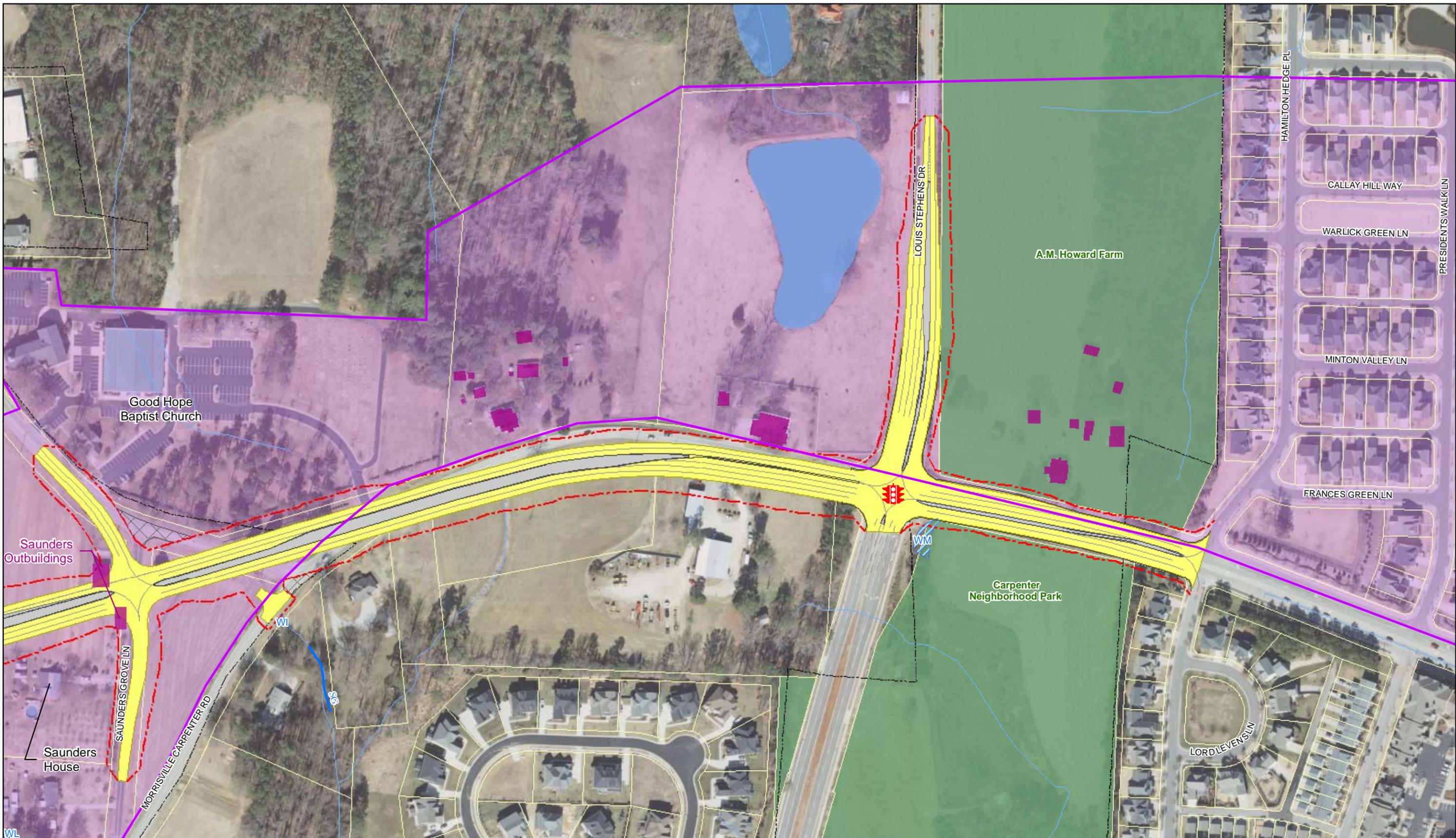


LEGEND		
Proposed Construction Limits	Proposed Concrete Median	Carpenter Historic District
Proposed Bridge	Public Parks or Open Space	Historic Structures
Pavement to be removed	Delineated Wetlands	Proposed Traffic Signal
Proposed Pavement	Delineated Streams	Hazardous Materials Site



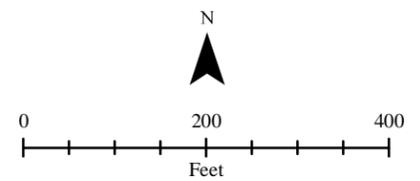
**Environmental Features**  
 Carpenter Fire Station Road  
 Realignment and Grade Separation  
 Town of Cary, Wake County

Figure 4a



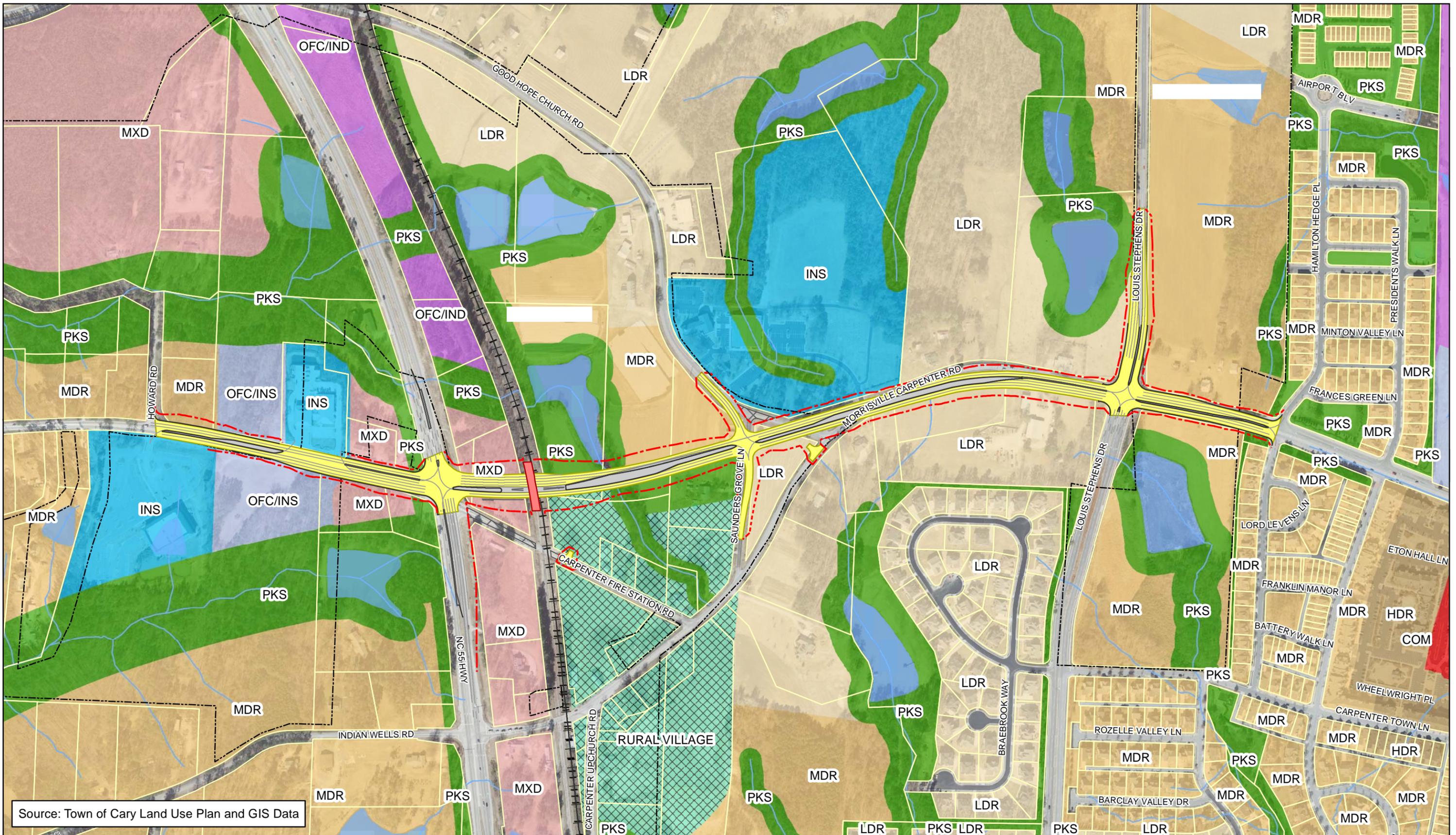
**LEGEND**

Proposed Construction Limits	Proposed Concrete Median	Carpenter Historic District
Proposed Bridge	Public Parks or Open Space	Historic Structures
Pavement to be removed	Delineated Wetlands	Proposed Traffic Signal
Proposed Pavement	Delineated Streams	Hazardous Materials Site



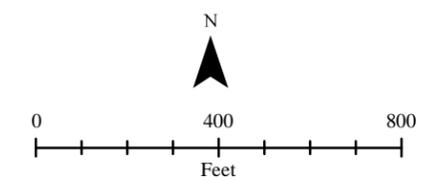
**Environmental Features**  
 Carpenter Fire Station Road  
 Realignment and Grade Separation  
 Town of Cary, Wake County

Figure 4b



Source: Town of Cary Land Use Plan and GIS Data

LEGEND					
	Rural Village		Medium Density Residential (MDR)		HDR Garden
	Very Low Density Residential (VLDR)		High Density Residential (HDR)		Mixed Use (MXD)
	Low Density Residential (LDR)		Institutional (INS)		Mixed Density Residential (MXDR)
	TC-LDR12		Transitional Office (TRANS_OFC)		Parks/Open Space (PKS)
	HDR Mid-Rise		Cottage, Business, Residential (CBR)		Commercial (COM)
	High Intensity Mixed Use (HMXD)		Office/Industrial (OFC/IND)		Office/Institutional (OFC/INS)
	Commercial Low Intensity (CLI)		Office/Institutional (OFC/INS)		



**Existing Land Use**  
 Carpenter Fire Station Road  
 Realignment and Grade Separation  
 Town of Cary, Wake County

**Figure 5**

# **APPENDIX A**

## **Agency Coordination**



## United States Department of the Interior

RECEIVED

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

JUL 20 2012

July 18, 2012

Tom Ellis, PE  
Town of Cary  
P.O. Box 8005  
Cary, North Carolina 27512-8005

Dear Mr. Ellis:

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 realignment of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road in Cary, Wake County, North Carolina. These comments provide information in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

Given the previously disturbed and suburban nature of the project area, impacts to fish and wildlife resources should be minimal. It is unlikely that any habitat for federally threatened or endangered species occurs within the project area. Therefore, the Service does not have any specific concerns for this project. We appreciate 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,

*for Gary Jordan*  
Pete Benjamin  
Field Supervisor



RECEIVED

JUL 23 2012

North Carolina Department of Environment and Natural Resources  
Office of Conservation, Planning, and Community Affairs

Beverly Eaves Perdue  
Governor

Linda Pearsall  
Director

Dee Freeman  
Secretary

July 19, 2012

Mr. Tom Ellis, Project Manager  
Town of Cary, Engineering Department  
PO Box 8005  
Cary, NC 27512-8005

Subject: Proposed Realignment of Carpenter Fire Station Road

Dear Mr. Ellis:

The NC Natural Heritage Program has no record of federally-listed endangered, threatened, or candidate species; or Critical Habitat or Wildlife Preserves within the referenced project area, nor within a one mile radius. Although our maps do not show records of federally-listed elements in the project area, it does not necessarily mean that they are not present. It may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys, particularly if the project area contains suitable habitat for rare species, significant natural communities, or priority natural area.

Please do not hesitate to contact me at 919-707-8628 if you have questions or need further information.

Judith Ratcliffe  
Freshwater Ecologist, Eastern Region  
NC Natural Heritage Program  
[judith.ratcliffe@ncdenr.gov](mailto:judith.ratcliffe@ncdenr.gov)

Mailing address: 1601 Mail Service Center, Raleigh, North Carolina 27699-1601  
Location: 217 W. Jones Street, Raleigh NC 27604  
Phone: 919-707-8600 Webpage: [www.oneNCSNaturally.org](http://www.oneNCSNaturally.org)

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*Naturally*  
Natural Resources Planning and Conservation



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

**RECEIVED**

**AUG 01 2012**

July 30, 2012

Mr. Tom Ellis, P.E.  
Project Manager  
Town of Cary  
P.O. Box 8005  
Cary, North Carolina 27512-8005

RE: Scoping Letter: Carpenter Fire Station Road Realignment, Wake County; TIP Project No.: U-5502

Dear Mr. Ellis:

The U.S. Environmental Protection Agency (EPA) has received your scoping letter dated July 13, 2012, for the above referenced project. As requested, EPA is providing comments consistent with the National Environmental Policy Act (NEPA). The Town of Cary is proposing to realign Carpenter Fire Station Road for a distance of 0.8 miles between NC 55 and Morrisville-Carpenter Road (SR 3014). The proposed project is expected to provide a four-lane, median divided facility with shoulders and sidewalks. The Town of Cary is expecting to receive State and Federal funds in addition to local funds for the project and anticipates the preparation on a Federal Environmental Assessment (EA).

Based upon GIS-level maps and the vicinity map the proposed realignment would appear to traverse through the middle of rural farms fields in addition to a large farm pond and possibly an intermittent stream. The farm fields appear to be in active agriculture. According to the scoping letter, the proposed project area contains the Carpenter Historic District listed on the National Register of Historic Places.

EPA requests that the Town of Cary evaluate the farmlands in consideration of the Farmland Protection Policy Act of 1981 requirements at Title 7, Part 657 and consider alternatives that avoid impacts to any prime farmlands. EPA has provided a link to these Department of Agriculture regulations in a footnote to this letter.

Footnote: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=7:6.1.3.6.27&idno=7>

EPA requests that the Town of Cary evaluate a full range of alternatives in the EA following the documentation for the purpose and need for the proposed project. The scoping letter did not specifically identify an existing traffic problem (need) but states that the project purpose is to improve traffic flow and operations around the project study area. EPA requests a copy of the EA when it becomes available for review.

Thank you for the opportunity to comment and please feel free to contact me at 404-562-9512 or by e-mail at [Militscher.chris@epa.gov](mailto:Militscher.chris@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Chris A. Militscher", with a long horizontal flourish extending to the right.

Christopher A. Militscher, REM, CHMM  
NEPA/Section 404 Merger Team Representative  
NEPA Program Office

For:

Heinz J. Mueller, Chief  
NEPA Program Office

Cc: C. Coleman, FHWA  
E. Midkiff, NCDOT  
E. Alsmeyer, USACE  
D. Wainwright, NCDWQ

From: Jenkins, Bill  
Sent: Monday, September 17, 2012 9:47 AM  
To: Tom Ellis  
Cc: Lapp, Kevin; McFalls, Eddie; Raymond, Lou  
Subject: FW: Proposed realignment of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road in Cary

Tom - We have received an e-mail response regarding the follow-up calls to the agencies.

Kevin Lapp - Please log this response in the tracking spreadsheet.

Thanks  
Bill

-----Original Message-----

From: Raymond, Lou  
Sent: Monday, September 17, 2012 7:02 AM  
To: Murray, Christopher A  
Cc: Jenkins, Bill  
Subject: RE: Proposed realignment of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road in Cary

Thank you for your input, we will pass this along to the Town of Cary and the project team.

Lou Raymond, P.E., AICP  
Project Manager, Transportation Planning D 704.556.5047 lou.raymond@aecom.com

6201 Fairview Road, Suite #400  
Charlotte, NC 28210  
T 704.553.6150 F 704.553.6151  
www.aecom.com

-----Original Message-----

From: Murray, Christopher A [mailto:cmurray@ncdot.gov]  
Sent: Friday, September 14, 2012 11:45 AM  
To: Raymond, Lou  
Subject: Proposed realignment of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road in Cary

Lou,

I am in receipt of a letter dated July 13, 2012 from the Town of Cary requesting environmental information regarding this project. Note the following information:

-Environmental studies in the project corridor should include delineations of wetlands and stream channels and surveys for federally or state-protected species.

-My review of Wake County GIS indicates that two channels are located in the project corridor. An unnamed tributary to Morris Branch is located between Saunders Grove Lane and the railroad. An unnamed tributary to Panther Creek is located in the NW quadrant of the NC 55 and Carpenter Fire Station Road. Any impacts to these streams will require permitting from the USACE and NCDENR-DWQ.

-The stream crossings appear to be located in the Jordan Watershed of the Cape Fear River Basin. Accordingly, they are likely subject to the NCDENR-DWQ riparian buffer rule. Impacts to buffers at the project will require permitting from the NCDENR-DWQ.

Please contact me if you need additional information.

Regards,

Chris Murray, PWS  
NCDOT Division 5 Environmental Supervisor

---

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



## North Carolina Department of Administration

Beverly Eaves Perdue, Governor

Moses Carey, Jr., Secretary

August 16, 2012

Mr. Tom Ellis  
Town of Cary  
Post Office Box 8005  
Cary, North Carolina 27512-8005

**Re: SCH File # 13-E-0000-0038; SCOPING; Proposed project consists of the realignment of approximately 0.8 miles of Carpenter Fire Station Road from Morrisville-Carpenter Road to NC 55. Project will also construct a grade separation with the CSX railroad.**

Dear Mr. Ellis:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "W E H Creech".

William E. H. Creech

Attachments

cc: Region J

*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:* [state.clearinghouse@doa.nc.gov](mailto:state.clearinghouse@doa.nc.gov)

*Location Address:*  
116 West Jones Street  
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue  
Governor

Dee Freeman  
Secretary

MEMORANDUM

TO: Zeke Creech  
State Clearinghouse

FROM: Melba McGee   
Environmental Review

RE: 13-0038 Scoping - Carpenter Fire Station Road from  
Morrisville-Carpenter Road to NC 55 in Wake County

DATE: August 8, 2012



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

Thank you for the opportunity to comment.

Attachments



## ☐ North Carolina Wildlife Resources Commission ☐

Gordon Myers, Executive Director

### MEMORANDUM

TO: Mr. Tom Ellis, PE  
Project Manager, Town of Cary

FROM: Travis Wilson, Highway Project Coordinator  
Habitat Conservation Program

DATE: August 2, 2012

SUBJECT: Response to the start of study notification regarding fish and wildlife concerns for the proposed improvements to Carpenter Fire Station Road, Wake County, North Carolina.



This memorandum responds to a request from the Town of Cary for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists on the staff of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed improvements. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

At this time we do not have any specific concerns related to this project; however, to help facilitate document preparation and the review process our general informational needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with:

NC Natural Heritage Program  
Dept. of Environment & Natural Resources  
1601 Mail Service Center  
Raleigh, NC 27699-1601.  
[WWW.ncnhp.org](http://WWW.ncnhp.org)

and,

---

**Mailing Address:** Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721  
**Telephone:** (919) 707-0220 • **Fax:** (919) 707-0028

## NCDA Plant Conservation Program

P. O. Box 27647  
Raleigh, N. C. 27611  
(919) 733-3610

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.
3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (USACE). If the USACE is not consulted, the person delineating wetlands should be identified and criteria listed.
4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.
5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).
6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.
7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.
8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.
9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages for this project. If we can further assist your office, please contact me at (919) 528-9886.



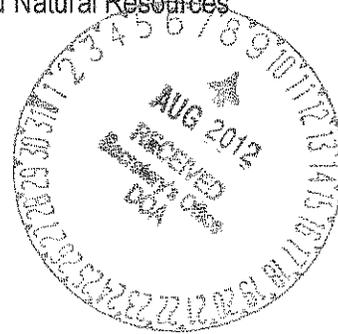
North Carolina Department of Environment and Natural Resources

Division of Water Quality  
Charles Wakild, P.E.  
Director

Beverly Eaves Perdue  
Governor

Dee Freeman  
Secretary

July 27, 2012



**MEMORANDUM**

To: Melba McGee, NCDENR Environmental Coordinator

From: Rob Ridings, NC Division of Water Quality, Transportation Permitting Unit *RR*

Subject: Scoping comments on proposed improvements to Carpenter Fire Station Road in Town of Cary, Wake County, State Clearinghouse Project No. 13-0038.

Reference your correspondence received July 24 , 2012 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for impacts to streams, buffers and possibly jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin & Subbasin	Stream Classifications	Stream Index Number	303(d) Listing?
UT Crabtree Creek	NEU 02	C; NSW	27-33-(1)	Yes
UT Kit Creek	CPF 05 (Jordan)	WS-V; NSW	16-41-1-17-2-(0.3)	No

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area. In the event that any jurisdictional areas are identified, the Division of Water Quality requests that the Town of Cary consider the following environmental issues for the proposed project:

**Project Specific Comments:**

1. Kit Creek is class WS-V; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Kit Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.

2. Crabtree Creek is class C; NSW; 303(d) impaired waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that the most protective sediment and erosion control BMPs be implemented in accordance with *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) to reduce the risk of further impairment to Crabtree Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ *Stormwater Best Management Practices*.

Transportation and Permitting Unit  
1650 Mail Service Center, Raleigh, North Carolina 27699-1617  
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604  
Phone: 919-807-6300 \ FAX: 919-807-6492  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)



3. Kit Creek is within the Jordan Lake Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0267. Crabtree Creek is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233. New development activities located in the protected 50-foot wide riparian areas within the basins shall be limited to “uses” identified within and constructed in accordance with 15A NCAC 2B.0267 and 2B.0233, respectively. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

#### **General Project Comments:**

1. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.
2. Environmental impact statement alternatives shall consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives shall include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ’s *Stormwater Best Management Practices Manual*, July 2007, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the applicant is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission’s Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
4. In accordance with the Environmental Management Commission’s Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
5. Future documentation, including the 401 Water Quality Certification Application, shall continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
6. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. The applicant shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.

7. An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis shall conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
8. The applicant is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, and rip rap to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
9. Where streams must be crossed, NCDWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, the applicant should not install the bridge bents in the creek, to the maximum extent practicable.
10. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.
11. Bridge deck drains shall not discharge directly into the stream. Stormwater shall 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 the most current version of NCDWQ's *Stormwater Best Management Practices*.
12. Sediment and erosion control measures should not be placed in wetlands or streams.
13. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
14. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater shall not be permitted to discharge directly into streams or surface waters.
15. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require a Nationwide Permit application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the applicant and written concurrence from NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
16. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall

not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

17. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
18. Unless otherwise authorized, placement of culverts and other structures in waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
19. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches, and/or sills may be required where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
20. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
21. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
22. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
23. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
24. 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 shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

25. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
26. Riparian vegetation (native trees and shrubs) shall be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

Thank you for requesting our input at this time. The Town of Cary 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 Rob Ridings at 919-807-6403.

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Tom Ellis, Town of Cary  
File Copy

DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES  
DIVISION OF WATER RESOURCES  
PUBLIC WATER SUPPLY SECTION

Inter-Agency Project Review Response

Project Number  
13-0038

County  
Wake

Project Name Town of Cary Type of Project

Scoping - Proposed project consists of realignment of approx 0.8 miles of Carpenter Fire Station Rd from Morrisville-Carpenter Rd to NC 55. Project will also construct grade separation with CSX Railroad

Comments provided by:

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

Name Michael Douglas-Raleigh RO Date: 07/24/2012

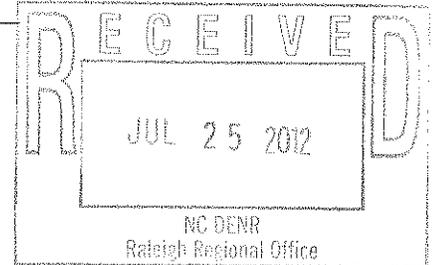
Telephone number: 919-791-4200

Program within Division of Water Resources:

- Public Water Supply
- Other, Name of Program: \_\_\_\_\_

Response (check all applicable):

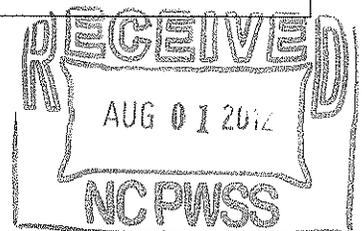
- No objection to project as proposed
- No comment
- Insufficient information to complete review
- Comments attached
- See comments below



*Any water main relocation must be approved by PWS Section - Technical Services Branch.*



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





NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

F02: HIGHWAYS AND ROADS

STATE NUMBER: 13-E-0000-0038

DATE RECEIVED: 07/17/2012

AGENCY RESPONSE: 08/06/2012

REVIEW CLOSED: 08/09/2012

MS SUSAN DECATSYE  
CLEARINGHOUSE COORDINATOR  
DEPT OF AGRICULTURE  
1001 MSC - AGRICULTURE BLDG  
RALEIGH NC



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DEPT OF AGRICULTURE  
DEPT OF CULTURAL RESOURCES  
DEPT OF TRANSPORTATION  
TRIANGLE J COG

**PROJECT INFORMATION**

APPLICANT: Town of Cary  
TYPE: National Environmental Policy Act  
Scoping

DESC: Proposed project consists of the realignment of approximately 0.8 miles of Carpenter Fire Station Road from Morrisville-Carpenter Road to NC 55. Project will also construct a grade separation with the CSX railroad.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:  NO COMMENT  COMMENTS ATTACHED

SIGNED BY:

*Susan Decatsye*

DATE:

*8/1/12*



Steven W. Troxler  
Commissioner

North Carolina Department of Agriculture  
and Consumer Services  
*Agricultural Services*

Vernon Cox  
Environmental Programs  
Specialist

August 1, 2012

Ms. Sheila Green  
State Clearinghouse  
N.C. Department of Administration  
1301 Mail Service Center  
Raleigh, North Carolina 27699-1301

State #: 13-E-0000-0038

RE: Proposed realignment of Carpenter Fire Station Road between NC 55 and SR 3014 in Wake County

Dear Ms. Green:

Thank you for the opportunity to comment on the proposed project to realign Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road. The North Carolina Department of Agriculture and Consumer Services (NCDA&CS) is concerned about the conversion of North Carolina's farm and forest lands to other uses. A satellite view of the area indicates there is the potential for adverse impacts to farms and forest land as a result of this project. As the Town of Cary proceeds with this project, NCDA&CS strongly encourages the project planners to avoid conversion of agricultural land to other uses whenever possible. When avoidance is not possible, all reasonable efforts to minimize impacts to farming operations and agricultural land should be implemented.

Respectfully,

Vernon Cox  
Environmental Programs Specialist

NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

*Rupal Desai*

COUNTY: WAKE

F02: HIGHWAYS AND ROADS

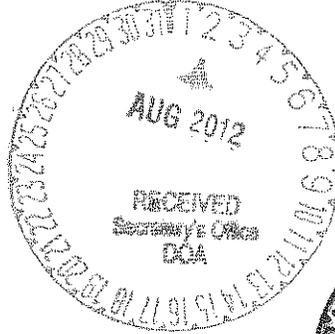
STATE NUMBER: 13-E-0000-0038

DATE RECEIVED: 07/17/2012

AGENCY RESPONSE: 08/06/2012

REVIEW CLOSED: 08/09/2012

MS CARRIE ATKINSON  
CLEARINGHOUSE COORDINATOR  
DEPT OF TRANSPORTATION  
STATEWIDE PLANNING - MSC #1554  
RALEIGH NC



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DEPT OF CULTURAL RESOURCES  
DEPT OF TRANSPORTATION  
TRIANGLE J COG

**PROJECT INFORMATION**

APPLICANT: Town of Cary  
TYPE: National Environmental Policy Act  
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AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:  NO COMMENT  COMMENTS ATTACHED

SIGNED BY: \_\_\_\_\_

*Rupal*

DATE: 07/30/12

NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

F02: HIGHWAYS AND ROADS

STATE NUMBER: 13-E-0000-0038

DATE RECEIVED: 07/17/2012

AGENCY RESPONSE: 08/06/2012

REVIEW CLOSED: 08/09/2012

MS CAROLYN PENNY  
CLEARINGHOUSE COORDINATOR  
CC&PS - DIV OF EMERGENCY MANAGEMENT  
FLOODPLAIN MANAGEMENT PROGRAM  
MSC # 4719  
RALEIGH NC

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DEPT OF CULTURAL RESOURCES  
DEPT OF TRANSPORTATION  
TRIANGLE J COG

**PROJECT INFORMATION**

APPLICANT: Town of Cary  
TYPE: National Environmental Policy Act  
Scoping

DESC: Proposed project consists of the realignment of approximately 0.8 miles of Carpenter Fire Station Road from Morrisville-Carpenter Road to NC 55. Project will also construct a grade separation with the CSX railroad.

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If additional review time is needed, please contact this office at (919)807-2425.



RECEIVED

JUL 19 2012

1301

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:  NO COMMENT  COMMENTS ATTACHED

SIGNED BY: John D. Burch

DATE: 25 Jul 2012

Not in SFHA.

NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

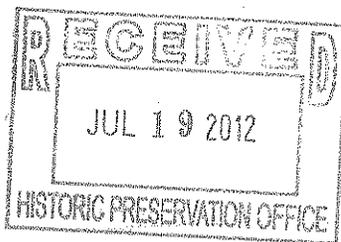
F02: HIGHWAYS AND ROADS

STATE NUMBER: 13-E-0000-0038

DATE RECEIVED: 07/17/2012

AGENCY RESPONSE: 08/06/2012

REVIEW CLOSED: 08/09/2012



ER 12-1223

MS RENEE GLEDHILL-EARLEY  
CLEARINGHOUSE COORDINATOR  
DEPT OF CULTURAL RESOURCES  
STATE HISTORIC PRESERVATION OFFICE  
MSC 4617 - ARCHIVES BUILDING  
RALEIGH NC

*Due 7/25/12 A (NC) DATA 7/26/12*

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DEPT OF AGRICULTURE  
DEPT OF CULTURAL RESOURCES  
DEPT OF TRANSPORTATION  
TRIANGLE J COG

*Due 8/3/12 See letter JDR 8/6/12*

PROJECT INFORMATION

APPLICANT: Town of Cary  
TYPE: National Environmental Policy Act  
Scoping

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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:  NO COMMENT  COMMENTS ATTACHED

SIGNED BY:

Renee Gledhill-Earley

DATE:

8.13.12





North Carolina Department of Cultural Resources  
State Historic Preservation Office

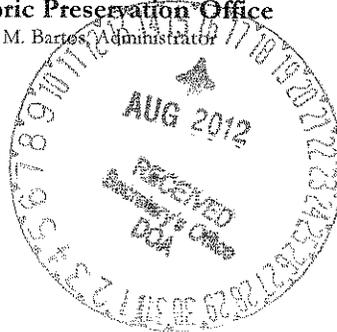
Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor  
Linda A. Carlisle, Secretary  
Jeffrey J. Crow, Deputy Secretary

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

August 7, 2012

Tom Ellis  
Town of Cary  
316 North Academy Street,  
Cary, NC 27513



Re: Carpenter Fire Station Road Realignment between NC 55 and Morrisville-Carpenter Road, Cary,  
Wake County, ER 12-1223

Dear Mr. Ellis:

Thank you for your letter of July 13, 2012, concerning the above project.

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 inclusion 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.

As stated in your letter, the project area contains the Carpenter Historic District, which is listed in the National Register of Historic Places. We will await the submission of the environmental assessment to issue formal comments on the effects the project may have on historic properties. However, it appears likely that the construction of a realigned four-lane, median-divided road and grade-separated crossing of the CSX Railroad will have significant impacts on the district's historic integrity.

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 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

for Ramona M. Bartos

cc: Mary Pope Furr, NCDOT, [mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)  
Gary Roth, Wake County Historic Preservation Commission, [groth@cappresinc.org](mailto:groth@cappresinc.org)  
State Clearinghouse



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

**FILE COPY**

September 5, 2012

Regulatory Division

Action ID: SAW-2012-01430

Mr. Tom Ellis, PE  
Town of Cary  
316 North Academy Street  
PO Box 8005  
Cary, North Carolina 27512-8005

Dear Mr. Ellis:

Reference your letter of July 13, 2012, concerning the proposal for the realignment of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road (SR 3014), Wake County, North Carolina. Your letter had requested our input for scoping comments on potential impacts to natural resources for inclusion in an Environmental Assessment under the National Environmental Policy Act. A map showing the general location of these lines was included with your letter.

After reviewing the referenced information, we are unable to determine if waters of the U.S. will be impacted from this proposal. Any discharge of excavated or fill material into waters of the U.S. and/or any adjacent wetlands that may be present within the project limits will require Department of the Army (DA) permit authorization. The type of DA authorization required (i.e. general or individual permit) will be determined by the location, type, and extent of jurisdictional area impacted by the project, and by the project design and construction limits.

Until additional data is furnished which details the extent of the jurisdictional impacts (if any) within the construction limits of the proposed project, we are unable to provide specific comments concerning DA permit requirements. To assist you with determining permitting requirements, we recommend that a more detailed delineation of the streams and/or wetlands present within the project site be performed. When this information becomes available, it should be forwarded to our office for review and comment, as well as a determination of DA permit eligibility.

Should you have any questions pertaining to this project or the permitting process, please call me at the Raleigh Field Office at 919-554-4884, Extension 35.

Sincerely,

Craig Brown  
Regulatory Project Manager  
Raleigh Regulatory Field Office



**North Carolina Department of Cultural Resources**  
**State Historic Preservation Office**

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor  
Linda A. Carlisle, Secretary  
Jeffrey J. Crow, Deputy Secretary

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

August 7, 2012

Tom Ellis  
Town of Cary  
316 North Academy Street,  
Cary, NC 27513

Re: Carpenter Fire Station Road Realignment between NC 55 and Morrisville-Carpenter Road, Cary,  
Wake County, ER 12-1223

Dear Mr. Ellis:

Thank you for your letter of July 13, 2012, concerning the above project.

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 inclusion 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.

As stated in your letter, the project area contains the Carpenter Historic District, which is listed in the National Register of Historic Places. We will await the submission of the environmental assessment to issue formal comments on the effects the project may have on historic properties. However, it appears likely that the construction of a realigned four-lane, median-divided road and grade-separated crossing of the CSX Railroad will have significant impacts on the district's historic integrity.

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 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

*for* Ramona M. Bartos

cc: Mary Pope Furr, NCDOT, [mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)  
Gary Roth, Wake County Historic Preservation Commission, [groth@cappresinc.org](mailto:groth@cappresinc.org)  
State Clearinghouse



## North Carolina Department of Cultural Resources

### State Historic Preservation Office

Ramona M. Bartos, Administrator

Pat McCrory, Governor  
Susan W. Kluttz, Secretary  
Kevin Cherry, Deputy Secretary

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

February 7, 2013

RECEIVED

FEB 11 2013

Tom Ellis  
Town of Cary  
PO Box 8005  
Cary, NC 27512-8005

Re: Architectural Survey, Carpenter Fire Station Road Realignment and Grade Separation, U-5502, Cary, Wake County, ER 12-1223

Dear Mr. Ellis:

Thank you for your letter of January 16, 2013, transmitting the architectural survey prepared by Coastal Carolina Research for the above project.

For the purpose of compliance with Section 106 of the National Historic Preservation Act, we concur that the **Carpenter Historic District** (WA 0787) is listed in, and remains eligible for listing in, the National Register of Historic Places. We also concur that, barring additional information to the contrary, the following properties are *not* eligible for listing in the National Register at this time:

- **House**, 4137 NC 55;
- **Carpenter-Ennis Farm** (WA 0747);
- **Ferrell House** (WA 0760);
- **House**, 1609 Morrisville Carpenter Road;
- **House**, 1709 Morrisville Carpenter Road;
- **House** (WA 7197), 6827 Indian Wells Road; and,
- **House** (WA 7196), 4037 NC 55.

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 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

A handwritten signature in cursive script that reads "Renee Gledhill-Earley".

for Ramona M. Bartos

cc: Gary Roth, Wake County Historic Preservation Commission, [groth@cappresinc.org](mailto:groth@cappresinc.org)



North Carolina Department of Environment and Natural Resources  
Division of Parks and Recreation

Beverly Eaves Perdue, Governor

Lewis R. Ledford, Director

Dee Freeman, Secretary

August 21, 2012

Mr. Tom Ellis, PE  
Town of Cary Engineering Department  
316 North Academy Street  
Cary, NC. 27513

Dear Mr. Ellis:

The North Carolina Division of Parks and Recreation (DPR) has conducted a Geographic Information Systems (GIS) review of the proposed realignment of Carpenter Fire Station Road between NC-55 and Morrisville Carpenter Road (SR 3014) in Cary, Wake County, North Carolina. Per the site information you sent via your cover letter dated July 13, 2012, we did not find records of State Parks or other DPR-managed lands or interests within the vicinity of this site.

Please contact me if you require additional information.

Sincerely,

Amin K. Davis  
Environmental Review Coordinator  
Division of Parks and Recreation, Natural Resources Program  
North Carolina Department of Environment and Natural Resources  
(919) 707-9329 / [amin.davis@ncdenr.gov](mailto:amin.davis@ncdenr.gov)



## Raymond, Lou

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**From:** Tom Ellis <Tom.Ellis@townofcary.org>  
**Sent:** Wednesday, July 18, 2012 2:27 PM  
**To:** Jenkins, Bill; McFalls, Eddie  
**Subject:** FW: Environmental Studies

FYI.

Tom Ellis, PE  
Traffic and Transportation Engineering Group  
Town of Cary Engineering Department  
Phone: (919) 469-4333  
Fax: (919) 460-4935

Please note that e-mail to and from this address is subject to the North Carolina Records Law and may be disclosed to third parties.

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**From:** Perry Ann Adams [<mailto:cappadams@aol.com>]  
**Sent:** Wednesday, July 18, 2012 2:16 PM  
**To:** Tom Ellis  
**Subject:** Environmental Studies

Dear Mr. Ellis,

We are currently reviewing the historic properties that could be threatened or compromised within the Core Study Area Corridor. In the mean time, I would like to encourage you to contact Renee Gledhill-Earley at the State Historic Preservation Office concerning this project; because Federal funds are being used in part, this means the project will require a section 106 review that she can assist you with.

[renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov) 919-807-6579

---

**Perry Ann Adams** *Capital Area Preservation*  
Tel: (919) 833-6404 | Fax: (919) 834-6404  
[cappadams@aol.com](mailto:cappadams@aol.com) | [www.cappresinc.org](http://www.cappresinc.org)

## Raymond, Lou

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**From:** Felix.Davila@dot.gov  
**Sent:** Wednesday, August 15, 2012 2:37 PM  
**To:** Tom.Ellis@townofcary.org  
**Cc:** McFalls, Eddie  
**Subject:** RE: realignment of Carpenter Fire Station Road

Thank you All!

---

**From:** Tom Ellis [<mailto:Tom.Ellis@townofcary.org>]  
**Sent:** Wednesday, August 15, 2012 2:10 PM  
**To:** Davila, Felix (FHWA)  
**Cc:** [EDDIE.MCFALLS@aecom.com](mailto:EDDIE.MCFALLS@aecom.com)  
**Subject:** RE: realignment of Carpenter Fire Station Road

Felix:

The STIP Number is U-5502. The Federal Aid Number is STPDA-1624(2). We have not heard from the NCDOT Project Development and Environmental Analysis Branch at this time so we do not have a PEDDA Engineer assigned. We will be contacting them in the next few days; once we receive this information we will let you know.

If you have any other questions please let us know; thanks.

Tom Ellis, PE  
Traffic and Transportation Engineering Group  
Town of Cary Engineering Department  
Phone: (919) 469-4333  
Fax: (919) 460-4935

Please note that e-mail to and from this address is subject to the North Carolina Records Law and may be disclosed to third parties.

---

**From:** [Felix.Davila@dot.gov](mailto:Felix.Davila@dot.gov) [<mailto:Felix.Davila@dot.gov>]  
**Sent:** Wednesday, August 15, 2012 9:20 AM  
**To:** Tom Ellis  
**Cc:** [EDDIE.MCFALLS@aecom.com](mailto:EDDIE.MCFALLS@aecom.com)  
**Subject:** realignment of Carpenter Fire Station Road

We received the attached letter. Would you please provide the STIP number for this project and the federal aid number.

Please be aware that only charges for work which occur after an authorization of federal funding has been issued are eligible for federal reimbursement.

Note: Eddie if you know, what is the PDEA engineer assigned to this project?

Thank you!

*Felix Davila P.E.  
Preconstruction and Environment Engineer  
Federal Highway Administration  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601*

## Memorandum

To: Meeting Attendees Page: 1

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CC: Project File

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Subject: Carpenter Fire Station Road Realignment and Grade Separation - Pre-Application Meeting – ST-1204 and TIP Project No. U-5502

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From: Lou Raymond and Eddie McFalls

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Date: May 19, 2014

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A Pre-Application meeting was held on March 12, 2014 at 1:00 PM at the Cary Town Hall in Room 11130 Cary, N. C.. The purpose of the meeting was to bring the Corps of Engineers and NCDWR up to speed on the project history and to review the first draft of the Memorandum of Agreement (MOA) with USACE, SHPO, NCDWR, and NCDOT as part of the Section 106 process for the subject project. The following people attended the meeting:

Tom Ellis	Town of Cary	<a href="mailto:tom.ellis@townofcary.org">tom.ellis@townofcary.org</a>
Lori Cove	Town of Cary	<a href="mailto:laura.cove@townofcary.org">laura.cove@townofcary.org</a>
Anna Readling	Town of Cary	<a href="mailto:anna.readling@townofcary.org">anna.readling@townofcary.org</a>
David Shaeffer	USACE	<a href="mailto:David.L.Shaeffer@usace.mil.gov">David.L.Shaeffer@usace.mil.gov</a>
Rob Ridings	NCDWR	<a href="mailto:Rob.ridings@ncdehr.gov">Rob.ridings@ncdehr.gov</a>
Renee Gledhill-Earley (via phone)	SHPO	<a href="mailto:renee.gledhill-earley@ncdcr.gov">renee.gledhill-earley@ncdcr.gov</a>
Beverly Robinson	NCDOT	<a href="mailto:brobinson@ncdot.gov">brobinson@ncdot.gov</a>
Nastasha Earle	NCDOT	<a href="mailto:nbearle@ncdot.gov">nbearle@ncdot.gov</a>
Susan Bamann	CCR	<a href="mailto:susan.bamann@ccrtarboro.com">susan.bamann@ccrtarboro.com</a>
Bill Jenkins	AECOM	<a href="mailto:bill.jenkins@aecom.com">bill.jenkins@aecom.com</a>
Eddie McFalls	AECOM	<a href="mailto:eddie.mcfalls@aecom.com">eddie.mcfalls@aecom.com</a>
Lou Raymond	AECOM	<a href="mailto:lou.raymond@aecom.com">lou.raymond@aecom.com</a>

Tom Ellis had sent out an email with the Draft MOA one week prior to the meeting. Handouts were provided to the attendees with an agenda and draft MOA and are also attached to these minutes. Following introductions, Tom Ellis and Lou Raymond presented an overview of the proposed project, previous coordination meetings with SHPO, NCDOT, and FHWA. At the previous coordination meetings, SHPO had made an initial determination that each of the Alternatives under consideration had an adverse effect on the Carpenter Historic District. As background on the Alternatives presented previously, Alternatives 1A and 1B were proposed to be grade-separated under the railroad and tie at-grade to NC 55 and 1A is a more northern alignment (west of Morrisville Carpenter Road) and 1B is a more southern alignment (west of Morrisville Carpenter Road). Alternative 2 goes over the railroad and over NC 55 with an interchange at NC 55. Alternative 3 goes under the railroad and under NC 55 with an interchange at NC 55.

After some discussion and consideration of the Section 4(f) impacts since the coordination meetings, the Town of Cary recommended to return the Federal funds. Town Council has approved a resolution to remove the federal funding from the project.

### Discussion

Several items were discussed relative to the anticipated Corps of Engineers permit requirements and draft MOA.

1. *Permit.* David Shaeffer explained that he considered this project in the pre-application phase and this meeting should be considered a Pre-Application Meeting. He inquired about the anticipated impacts to jurisdictional waters and based on them, he expects that the project would require a Nationwide 14 permit and the draft MOA would be a condition of the permit. The draft MOA is a document that would be legally reviewed by approximately 10 people with the Corps of Engineers and signed by the Wilmington District Colonel. Within the permit, it would need to be determined what the permit area is and what the area of potential effects would be. Also, storm water management would need to be accommodated.
2. *SHPO Comments and Discussion on the Draft MOA:*
  - a. Many uses of the word 'feasible' and 'if's and maybe's', need to be certain on these items.
  - b. Medians – are they included or not and why they're needed. AECOM described that medians (preferably landscaped to blend with surrounding area) would be needed to separate traffic in each direction thereby improving safety. In addition to landscaped medians, other roadway design criteria such as paved shoulder widths, swales, and street lighting were mentioned. SHPO also noted they would like more design information as part of the MOA approval process.
  - c. Relocating barns at 105 Saunders Grove Lane – who decides it is feasible? SHPO would like more information regarding the relocation of the barns at 105 Saunders Lane and determination of whether relocation is feasible. This was brought up in the context of concern over too much use of "if feasible" in the MOA. SHPO would want to know who decides if it is feasible.
  - d. Pond language – take out of MOA since it is outside the historic district.
  - e. Need information about what existing development is in and around historic district.
  - f. Include landscape locations. It was noted by Project Team that actual landscape medians and other landscaping locations are usually not determined until a landscaping plan is developed (included as part of final design).
  - g. There was initially discussion of getting the pond owners as signatories, but later SHPO said that the pond could be taken out of the MOA since it was not in the district. As a result, this leaves the Rimmers (barns) and any other owners that become involved in agreements for a mitigating action.
  - h. For the Rimmers property describe the condition/shape of the barns.
  - i. SHPO asked about design of the cul-de-sacs and if any improvements are going to be made to existing Carpenter Fire Station Road.
3. *SHPO Considerations and Recommendations for the MOA.* – SHPO stated that the MOA should describe what Saunders Grove Lane is going to look like in order to preserve the district. Zoning should be carefully looked at since with the proposed east-west Carpenter Fire Station Road and the north-south Saunders Grove Lane you have 6-lanes of traffic and that's attractive for development. The direct and indirect effects of the project in terms of scale and context of zoning need to be considered. One consideration is a local historic district at the crossroads. SHPO encouraged the Town to explore ways of preserving character of the district.
4. *State EA/FONSI* – For documentation in the State EA/FONSI we would need to list what would be committed to studying in final design for minimization and mitigation of impacts to the historic district. A list might include but not limited to the design of the road and criteria for medians, lighting, historical cross roads, and how they will be treated.

5. *Division of Water Resources* – The proposed project lies within the Jordan Lake and Neuse River basins and are subject to buffer certification and riparian buffer protection. Storm water treatment and hydrology can be evaluated by DWR between the FONSI and final design.
6. *Action Items* – The Corps of Engineers had general comments on some language in the draft MOA (not requested to date but will be requested in the near future) and can send those comments. The SHPO indicated that there were no fatal flaws with the project given Town funding and the Town should proceed with developing more detailed design for more definitive descriptions of what they will do. The Town of Cary will hold a public meeting on March 24, 2014 and complete a State EA/FONSI before proceeding with final design.

The above minutes are AECOM's understanding of the meeting's proceedings. If you have any questions or additions to these minutes, please either call or email Lou Raymond [Lou.Raymond@aecom.com](mailto:Lou.Raymond@aecom.com), (704) 556-5047 or [eddie.mcfalls@aecom.com](mailto:eddie.mcfalls@aecom.com) within five business days of receipt. Any new comments or requests for clarifications received within the designated timeframe will be incorporated into the record.

**APPENDIX B**  
**USACE Jurisdictional**  
**Determinations**

**U.S. ARMY CORPS OF ENGINEERS**  
**WILMINGTON DISTRICT**

Action Id. SAW-2013-01551 County: Wake U.S.G.S. Quad: NC-CARY

**NOTIFICATION OF JURISDICTIONAL DETERMINATION**

**Property Owner:** AECOM  
Kevin Lapp  
**Address:** 701 Corporate Center Drive  
Suite 475  
Raleigh, NC, 27607  
**Telephone Number:**

Size (acres)		Nearest Town	<u>Cary</u>
Nearest Waterway	<u>Morris Branch</u>	River Basin	<u>Haw. North Carolina.</u>
USGS HUC	<u>3030002</u>	Coordinates	Latitude: <u>35.82199</u> Longitude: <u>-78.873654</u>

Location description: The project study area is bordered to the east by Louis Stephens Rd., and to the south by Indian Wells Rd. and to the west by Howard Rd. as shown on the attached map.

**Indicate Which of the Following Apply:**

**A. Preliminary Determination**

Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

**B. Approved Determination**

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are waters of the U.S. including wetlands on the above described property subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
  - We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.
  - The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.
  - The waters of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on \_\_\_\_\_. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are no waters of the U.S., to include wetlands, present on the above described project area which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

- The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **James Lastinger** at **919-554-4884 x32** or **James.C.Lastinger@usace.army.mil**.

**C. Basis For Determination: Stream channels on site exhibit an established OHWM. Wetlands on site exhibit criteria as described in the Corps 1987 wetland delineation manual and appropriate regional supplement.**

**D. Remarks:**

**E. Attention USDA Program Participants**

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

**F. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)**

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers  
South Atlantic Division  
Attn: Jason Steele, Review Officer  
60 Forsyth Street SW, Room 10M15  
Atlanta, Georgia 30303-8801

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by \_\_\_\_\_.

\*\*It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.\*\*

Corps Regulatory Official:



Date: November 19, 2013

Expiration Date: November 19, 2018

*The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the attached customer Satisfaction Survey or visit <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online.*

Copy furnished:

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND  
REQUEST FOR APPEAL**

Applicant: <b>AECOM</b> <b>Kevin Lapp</b>	File Number: <b>SAW-2013-01551</b>	Date: <b>November 19, 2013</b>
--	------------------------------------	--------------------------------

Attached is:	See Section below
<input type="checkbox"/> INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/> PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/> PERMIT DENIAL	C
<input type="checkbox"/> APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/> PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.**

**A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT: You may accept or appeal the permit**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.**

**D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.**

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact:  
**District Engineer, Wilmington Regulatory Division,  
 Raleigh Regulatory Field Office  
 Attn: James Lastinger, Regulatory Specialist  
 3331 Heritage Trade Dr., suite 105  
 Wake Forest, NC 27587  
 919-554-4884 ext 32**

If you only have questions regarding the appeal process you may also contact:  
 Mr. Jason Steele, Administrative Appeal Review Officer  
 CESAD-PDO  
 U.S. Army Corps of Engineers, South Atlantic Division  
 60 Forsyth Street, Room 10M15  
 Atlanta, Georgia 30303-8801  
 Phone: (404) 562-5137

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:
---	-------	-------------------

**For appeals on Initial Proffered Permits send this form to:**

**District Engineer, Wilmington Regulatory Division, Attn: James Lastinger, 69 Darlington Avenue, Wilmington, North Carolina 28403**

**For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:**

**Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Jason Steele, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801  
 Phone: (404) 562-5137**

**PRELIMINARY JURISDICTIONAL DETERMINATION FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): November 19, 2013**

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: 701 Corporate Center Dr., suite 475, Raleigh, NC 27607**

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Wilmington, City of Cary, Carpenter-Fire Station Road Realignment, SAW-2013-01551**

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:  
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: NC County/parish/borough: Wake City: Cary  
Center coordinates of site (lat/long in degree decimal format): Lat. 35.82199° Pick List, Long. -78.873654° Pick List.  
Universal Transverse Mercator:  
Name of nearest water body: Morris Branch

Identify (estimate) amount of waters in the review area:  
Non-wetland waters: 3,299 linear feet: width (ft) and/or acres.  
Cowardin Class:  
Stream Flow:  
Wetlands: 1.246 acres.  
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:  
Tidal:  
Non-Tidal:

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLIES):**

- Office (Desk) Determination. Date:
- Field Determination. Date(s): August 27, 2013 by Mr. David Shaeffer

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

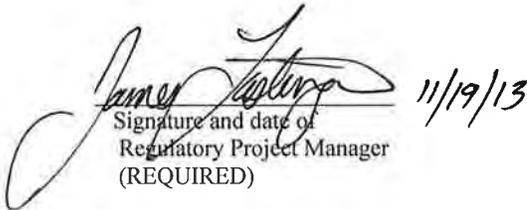
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: .
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): .  
or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Other information (please specify): Site visit made on August 27, 2013.

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

  
Signature and date of  
Regulatory Project Manager  
(REQUIRED)

\_\_\_\_\_  
Signature and date of  
person requesting preliminary JD  
(REQUIRED, unless obtaining the signature is  
Impracticable)

**RECEIVED**

SEP 06 2013

RALEIGH REGULATORY  
FIELD OFFICE

**Table 1. Jurisdictional Features along U-5502  
Carpenter-Fire Station Road Realignment**

Name	Status	HUC	Wetland Type	NCDWQ Stream Score	Jurisdiction
<b>STREAMS</b>					
SB	Intermittent	03030002		29.5	Jurisdictional
SC/SF	Perennial	03030002		30.5	Jurisdictional
SPA	Intermittent	03030002		Not Scored (Extremely disturbed)	
SD	Intermittent	03030002		22	Jurisdictional
SE/SPB	Perennial	03030002		30.5	Jurisdictional
SG	Intermittent	03020201		26	Jurisdictional
SH	Intermittent	03030002		21	Jurisdictional
SJ	Intermittent	03030002		24	Jurisdictional
<b>WETLANDS</b>					
WC	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
WD	Abutting RPW	03030002	Riparian	NA	Jurisdictional
WE	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
WG	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
WH	Abutting RPW	03030002	Riparian	NA	Jurisdictional
WI	Adjacent RPW	03020201	Riparian	NA	Jurisdictional
WJ	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
WK	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
WL	Abutting RPW	03030002	Riparian	NA	Jurisdictional
WM	Adjacent RPW	03030002	Riparian	NA	Jurisdictional
<b>PONDS</b>					
PA	Impounded RPW	03030002		NA	Jurisdictional
PB	Impounded RPW	03030002		NA	Jurisdictional
PC	Impounded RPW	03030002		NA	Jurisdictional
PD	Impounded RPW	03030002		NA	Jurisdictional





North Carolina Department of Environment and Natural Resources

Division of Water Resources  
Water Quality Programs  
Thomas A. Reeder  
Director

Pat McCrory  
Governor

John E. Skvarla, III  
Secretary

March 6, 2014

Kevin Lapp, AECOM  
701 Corporate Center Drive, Suite 475  
Raleigh, NC 27607

Subject: Carpenter-Fire Station Road Realignment Project, U-5502, Town of Cary, Wake  
County

Determination for Applicability to the Neuse Buffer Rules (15A NCAC 2B.0233) and Jordan Buffer Rules  
(15A NCAC 2B.0267)

Dear Mr. Lapp:

This memo is to confirm which streams and ponds listed in the updated Jurisdictional Determination you submitted for the above-mentioned project (dated December 20, 2013) for applicability to the Neuse and Jordan Buffer Rules.

**NCDWR has confirmed that the following features are applicable to the Neuse and Jordan Buffer Rules as shown on the referenced jurisdictional maps: Streams SB, SC, SD, SE, SR, SG, SJ, SPA, and SPB. Ponds PA, PB, PC, and PD.**

**NOT Subject: Stream SH.**

This letter only addresses the applicability to the buffer rules and does not approve any activity within the buffer, Waters of the United States, or Waters of the State. Any impacts to wetlands, streams and buffers must comply with the Neuse and Jordan Buffer Rules, 404/401 regulations, water supply regulations (15A NCAC 2B .0216), and any other required federal, state and local regulations. Please be aware that even if no direct impacts are proposed to the protected buffers, sheet flow of all new stormwater runoff as per 15A NCAC 2B.0233 and 2B.0267 is required.

The owner (or future owners) or permittee should notify NCDWR (and other relevant agencies) of this determination in any future correspondences concerning this property and/or project. This on-site determination shall expire five (5) years from the date of this letter.

Landowners or affected parties that dispute a determination made by NCDWR or Delegated Local Authority that a surface water exists and that it is subject to the mitigation rules may request a determination by the Director. A request for a determination by the Director shall be referred to the Director in writing c/o Amy Chapman, NCDWR Wetlands/401 Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650.

Transportation and Permitting Unit  
1650 Mail Service Center, Raleigh, North Carolina 27699-1650  
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604  
Phone: 919-807-6300 \ FAX: 919-733-1290  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

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One  
North Carolina  
*Naturally*

Individuals that dispute a determination by NCDWR or Delegated Local Authority that "exempts" a surface water from the mitigation rules may ask for an adjudicatory hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice and the date the affected party (including downstream and adjacent landowners) is notified of this decision. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. Lacy Presnell, General Counsel  
Department of Environment and Natural Resources  
1601 Mail Service Center

This determination is final and binding unless you ask for a hearing within 60 days.

If you have any additional questions or require additional information please call Rob Ridings at 919-707-8786.

Sincerely,



Rob Ridings

cc: NCDWR Transportation Permitting Unit File Copy

**APPENDIX C**  
**Public Involvement**

# **Public Meeting 1**



**Comments or Questions?**

Contact the Town's project manager with any questions or comments:

**Tom Ellis, P.E.**  
**Town of Cary Engineering Department**  
**(919) 469-4333**  
[tom.ellis@townofcary.org](mailto:tom.ellis@townofcary.org)

**Citizens Informational Workshop**

October 16, 2012, 5-7 PM

**Good Hope Baptist Church**  
 6628 Good Hope Church Road



The Town of Cary has scheduled a Citizens Informational Workshop to get your input for the project. **We want to hear your thoughts, concerns, and suggestions before we start the study.** We will provide maps with aerial photography and constraints as well as provide you with handouts and comment sheets.

Anyone interested in the project should plan to drop by at his or her convenience. No formal presentation will be made; however, Town of Cary representatives will be available to discuss the project on a one-to-one basis throughout the open-house meeting.

The Citizens Information Workshop is being held to provide the public an opportunity to participate in the planning process and update them on the project's status. Comments and information received from the public will be used in conjunction with comments provided by environmental review and regulatory agencies to help shape the project.



October 2012

# Study Updates

## Carpenter Fire Station Road Realignment & Grade Separation



**PROJECT SCHEDULE**

The upcoming public meeting is the first step in a process used to select the best alternative and minimize community impacts. After comments received at the Citizens Informational Workshop are considered and used to prepare preliminary alternatives, the following actions are anticipated:

**REALIGNMENT STUDY**

**Fall 2012 -**  
 Technical field studies performed to assist the development of preliminary designs and the environmental document

**Winter 2013 -**  
 Presentation of preliminary design and second Citizens Informational Workshop

**Spring 2013 -**  
 Conduct a Public Hearing through Cary's Town Council to approve the project

**Summer 2013 -**  
 Prepare Final Engineering Designs taking into consideration comments received at the Second Citizens Informational Workshop and Public Hearing

**CONSTRUCTION**

**Summer 2015 – Summer 2017\***  
 Funding is included in the Community Investment Bond Referendum, which voters will decide on November 6

Project updates are also available on the Town's website (<http://www.townofcary.org>) on the Engineering Department's Street Projects webpage

**contents**

- Schedule **P.1**
- Concepts **P.2**
- NEPA Process **P.3**
- Budget **P.3**
- Public Involvement **P.4**

### Cary Works to Realign Carpenter Fire Station Road

The Town of Cary is proposing to realign approximately 0.8 miles of Carpenter Fire Station Road between NC 55 and Morrisville-Carpenter Road (SR 3014). The project (STIP No. U-5502) will provide a four-lane median divided facility with shoulders. The Town of Cary proposes to construct a grade separation with the CSX Railroad as part of the project. The project also includes operational analysis for NC 55 traffic within one mile of the Carpenter Fire Station Road intersection.

The purpose of the proposed project is to improve traffic capacity and operations along Carpenter Fire Station Road by addressing capacity deficiencies and congestion associated with travel along Carpenter Fire Station Road and NC 55 through roadway realignment and grade separation of the existing railroad line.

The Town is kicking off the NEPA environmental study and design process and wants to get you involved. Come out to a **Citizens Informational Workshop on October 16** to learn more about the project and help us learn more about the community and its concerns.

**Preliminary Alternatives** – Using Geographic Information Systems data as well as field

studies of the natural and human environment, including but not limited to wetlands, streams, businesses, residences, churches, cemeteries, and historic resources, the project team will identify preliminary alternatives. These constraints will be used to determine where potential realignment and grade-separated alternatives could be placed. The preliminary alternatives will be presented to the Town of Cary, NCDOT, and environmental resource agencies for consideration. Although the number and location of preliminary alternatives could still change, the approximate impacts to the natural and human environment will be calculated, summarized, and presented at the next Citizens' Informational Workshop.

**Funding** – The proposed project is included in the 2012-2020 State Transportation Improvement Program (STIP). Currently the project is only funded for planning and environmental studies by the Town of Cary. No funding for right of way acquisition and/or construction is currently included in the STIP. Funding for this construction of this project is included in the Community Investment Bond Referendum, which voters will decide on November 6. Information is available at <http://carybonds.org/>.

# TOWN of CARY

**ENGINEERING DEPARTMENT**

316 N Academy St.  
 Cary, NC 27513  
 919.469.4030 ph  
 919.460.4935 fax  
[www.townofcary.org](http://www.townofcary.org)

## WHY THIS PROJECT? WHY NOW?

This project has long been part of Cary's Comprehensive Transportation plan (CTP) and is detailed in the Carpenter Community Plan. The project is also shown in the Triangle's long-range transportation plan (LRTP) as a link planned for completion by 2015.

When completed, this project will provide benefits including improved east-west traffic flow, reduced traffic congestion on NC 55 and CFS Road, improved connectivity, and enhanced traffic safety by eliminating at-grade railroad crossings with CSX.

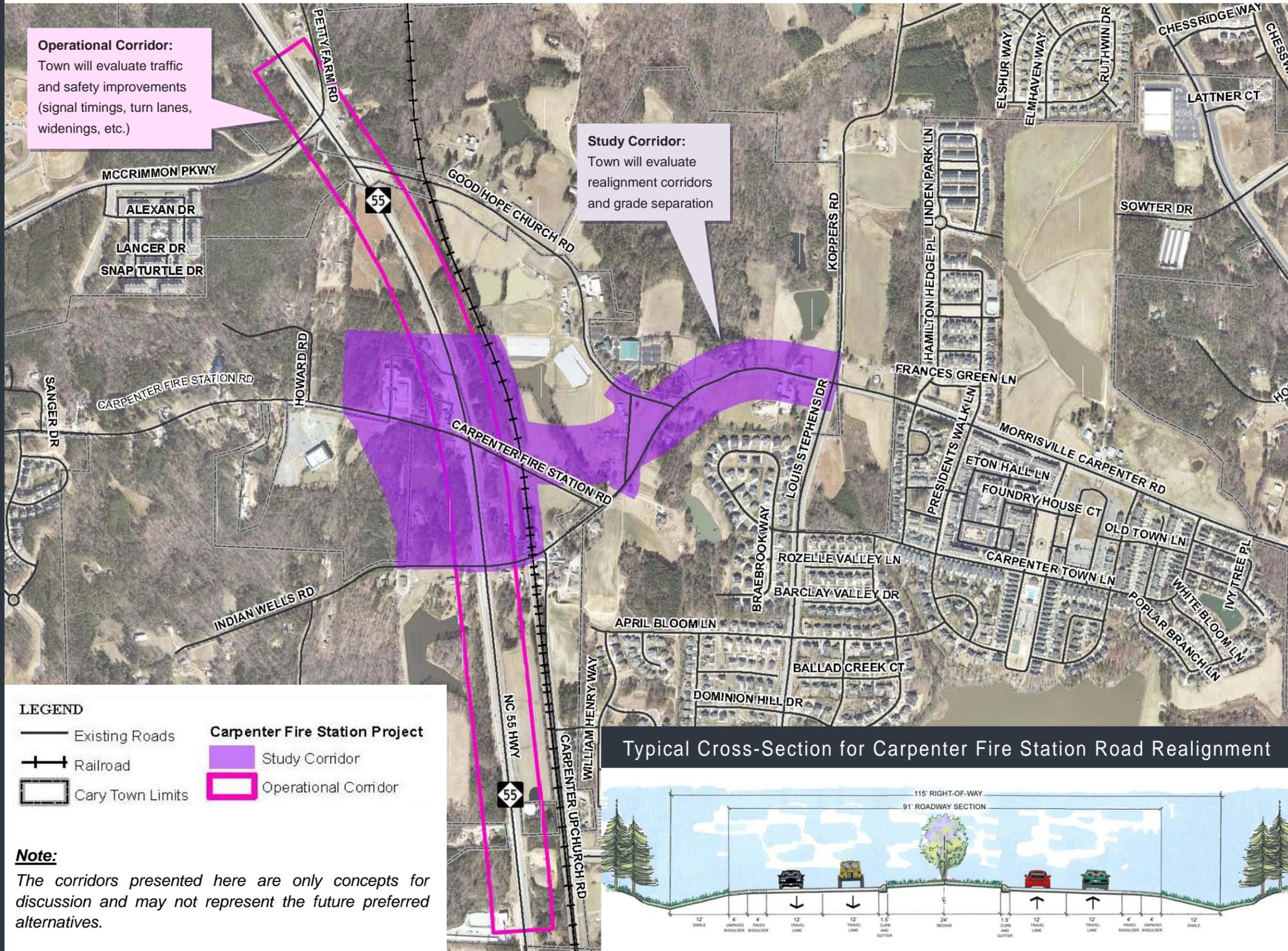
In May 2012, Town Council approved a Four-Party Agreement between CSX, NCDOT, Town of Cary, and a local developer in relation to the construction of Parkside Town Commons near NC 55 and NC 540. In accordance with agreement between the Town and the developer as the development moves forward:

- O'Kelly Chapel Road will extend east to RTP with an at-grade crossing across CSX.
- Carpenter Fire Station Road crossing will be closed prior to the opening of the O'Kelly Chapel Road crossing.
- The local roadways will be improved to facilitate closing the existing Carpenter Fire Station rail crossing and redirecting traffic to Morrisville Carpenter Road, including road widening, turn lanes, and additional safety enhancements.

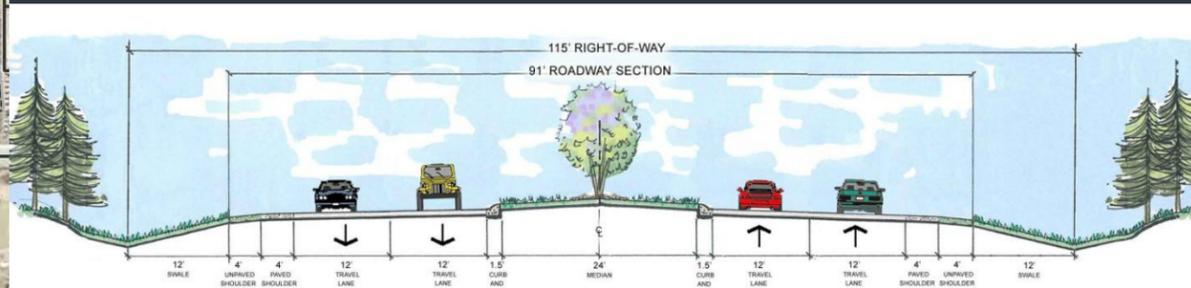
• The Carpenter Fire Station Road grade-separated crossing will be constructed by 2022, with the Morrisville Carpenter Road at-grade crossing being closed after the project is completed.

# Study Area for Carpenter Fire Station Road Realignment and Grade Separation

## Study Corridor and Operational Corridor



## Typical Cross-Section for Carpenter Fire Station Road Realignment



## WHAT IS NEPA? Environmental Documentation for Projects

The development of roadway projects with federal funding requires planning be done in accordance with the National Environmental Policy Act (NEPA). NEPA is a federal law enacted in 1970 that requires governments to consider the environmental impacts of, and alternatives to, major proposed actions in its decision-making processes. The act is the basic national charter for the protection of the environment.

For this project, an environmental assessment (EA) will be prepared and will be reviewed by NCDOT and Federal Highway Administration (FHWA). The EA includes identification of the project's purpose and need, documentation of the potential alternatives, comparison of each alternative's environmental impacts, and coordination with the public and regulatory agencies.

## BUDGET

The Town is funding the current study through a grant received from the Capital Area Metropolitan Planning Organization (CAMPO) Locally Administered Project Program (LAPP).

FY 2012 - \$900,000 for interchange study  
\$720,000 from STP-DA grants,  
\$180,000 from Town funds

FY 2017 - \$17,000,000 for construction  
Funding is included in the Community Investment Bond Referendum, which voters will decide on November 6

# **Public Meeting 2**



Comments or Questions?

Mail or email workshop comments to:

**Tom Ellis, P.E.**  
 Town Project Manager  
 Town of Cary Facilities  
 Design & Transportation  
 Services Department  
 316 N Academy Street  
 Cary, NC 27513  
 (919) 469-4333  
[tom.ellis@townofcary.org](mailto:tom.ellis@townofcary.org)

You may also contact the Town project manager at any time with questions during the project.

Stay updated on the project at the Town's website, [www.townofcary.org](http://www.townofcary.org), by searching "Carpenter Fire Station Road," or scan this QR code with your smart device to go directly to the project webpage.



(continued from front)

congestion on NC 55 and Carpenter Fire Station Road, improved connectivity, and enhanced traffic safety by eliminating an at-grade railroad crossing with the CSX railroad line on Carpenter Fire Station Road. Good Hope Church Road and Saunders Grove Lane will also be realigned with the planned Carpenter Fire Station Road Improvements.

**Moving Forward** – At the conclusion of this workshop and upon completion of an Environmental Assessment (EA) required for this project, the Town will select a preferred roadway alignment. Input has been received from numerous agencies including the North Carolina Department of Transportation (NCDOT), State Historic Preservation Office, US Army Corps of Engineers, CSX Railroad, and other environmental review and regulatory

agencies. Dialogue with these agencies will continue through the final design phase.

After the final alignment is selected, detailed surveys will be performed to more precisely locate all existing features including roadways, driveways, buildings, trees, shrubs, and other features. Final design plans will then be developed and upon their completion Town representatives will contact the property owners who will be directly impacted by the project and meet with them to review the plans and discuss impacts.

**Funding** – Funding for this project is included as part of the Community Investment Bonds approved by Cary voters on November 6, 2012. More information is available on the Town's website at <http://www.townofcary.org> by searching "Carpenter Fire Station Road."



Rendering of alignment and underpass looking west from Good Hope Church Road towards NC 55 (Conceptual Only)



March 2014

# Project Update

## Carpenter Fire Station Road Realignment & Grade Separation



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- Project Benefits **P.1**
- Alignment Alternatives **P.2-3**
- Funding **P.4**
- Contact Information **P.4**

### PROJECT SCHEDULE

This second citizens' workshop is the next step in a process used to select the best alternative and minimize community impacts. Comments received at the workshop will be considered and used as part of the preparation of the final engineering designs for this project. The following is the current schedule:

#### REALIGNMENT STUDY

##### Fall 2012 – Spring 2014

Technical field studies and surveys performed in order to provide alignment alternatives and prepare the necessary environmental documentation.

##### Spring 2014

Presentation of realignment alternatives and other information at the second citizens' workshop.

##### Summer 2014 – Summer 2016

Perform detailed surveys for the selected alignment and prepare Final Engineering Designs taking into consideration comments received at the second citizens' informational workshop. Plan reviews will be required with NCDOT, CSX Railroad, and the various public and regulatory agencies.

#### CONSTRUCTION

##### Summer 2016 – Summer 2018

Construction of railroad underpass and Carpenter-Fire Station Road realignment.

### Update for Carpenter Fire Station Road Realignment

**Workshop Overview** - The Town of Cary has worked with our engineering design consulting firm on evaluating different roadway realignment alternatives for realigning approximately 0.5 miles of Carpenter Fire Station Road between NC 55 and Morrisville Carpenter Road. The alignment alternatives presented at this workshop were developed to avoid or minimize possible impacts to existing wetlands, streams, residences, and buildings, including those that are contributing features of the Carpenter Historic District.

The Town is presenting these different realignment alternatives as well as other exhibits at the workshop. Conceptual visualizations of the project, including the new underpass below the CSX Railroad, are also being presented at the workshop. The Town hopes that you have time to review the materials and to provide your

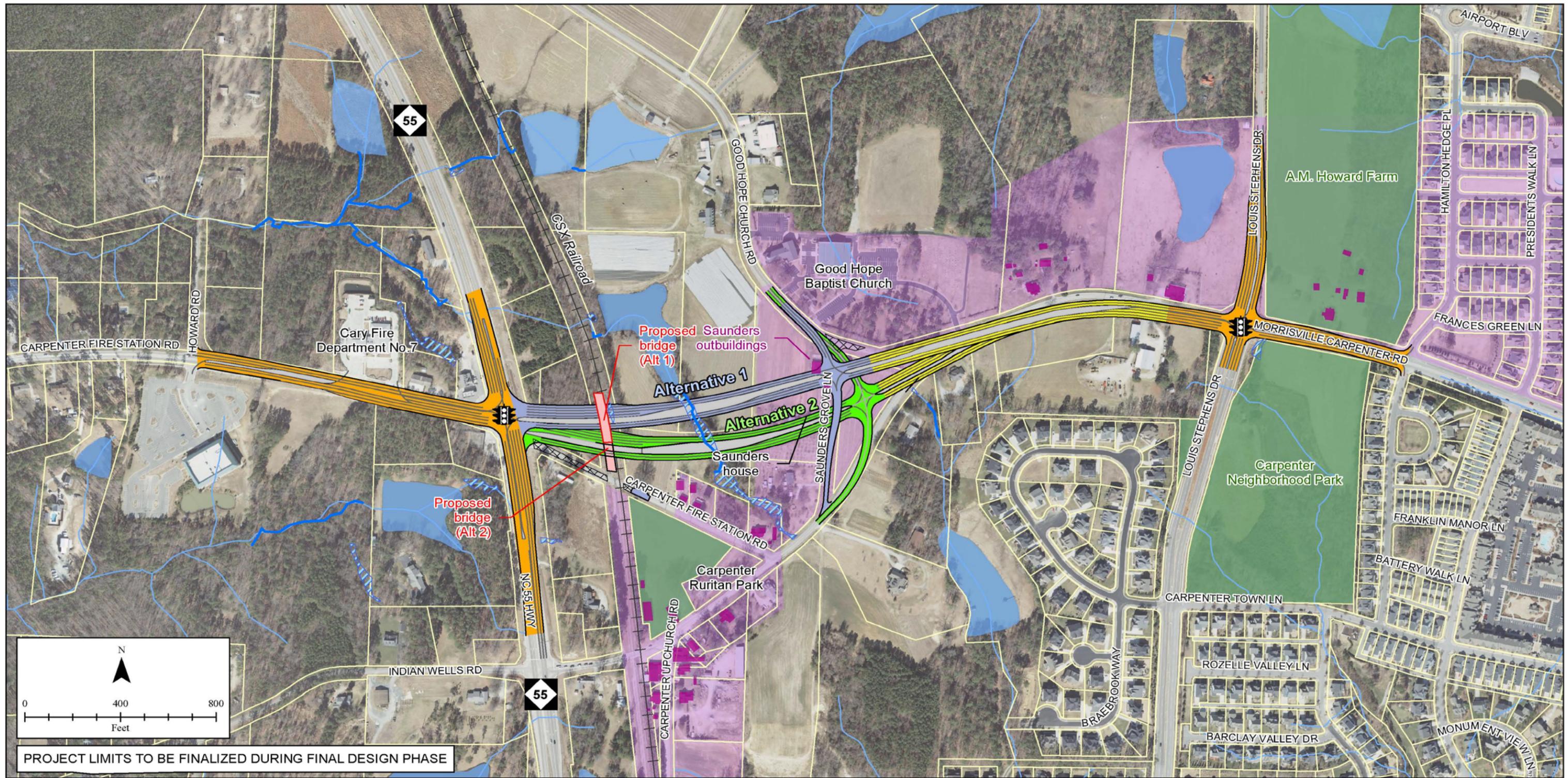
comments for the alignment alternatives, as well as provide any other thoughts and suggestions you may have for this project. If you are unable to attend the workshop or need additional time, you can mail or email your comments to the Town's project manager. The mailing address and contact information is included with this update.

**Project Benefits** – This project has long been a part of Cary's Comprehensive Transportation Plan (CTP) and is detailed in the Carpenter Community Plan. The project is also shown as a link in the Triangle's Metropolitan Transportation Plan (MTP).

When completed, this project will provide benefits including improved east-west traffic flow, increased traffic flow, reduced traffic

(continued on back)





PROJECT LIMITS TO BE FINALIZED DURING FINAL DESIGN PHASE

**LEGEND**

- Alternative 1 (Bond Project)
- Alternative 2 (Bond Project)
- Transition - 4 lane to 2 lane (Alts. 1 and 2)
- Future improvement not currently funded
- Proposed bridge
- Proposed median
- Pavement to be removed
- Public parks or open space
- Parcels
- Delineated wetlands
- Delineated streams
- Historic structures
- Carpenter Historic District
- Existing traffic signal



**Proposed Alternatives**  
Carpenter Fire Station Road  
Realignment and Grade Separation

Town of Cary, Wake County

Date:  
03/2014

